

*And thou shalt love the LORD thy God with all thine heart, and with all thy soul, and with all thy might.*  
Deut 6:5 (KJV)

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**Office Hours:** MWF from 08–13h00 (except times when I am in class or lab); if I am in my office feel free to come in, if it is something really important then best make an appointment.

## The course

**Time:** 07h45–08h45 MWF (lectures); 07h45–10h55 or 12h05–15h15 on Tuesdays (Labs 1 & 2).

**Location:** VPH 313 (lectures); VPH 215 (Labs)

### Textbooks:

- Hole's Essentials of Human Anatomy & Physiology (12<sup>th</sup> Edition with Connect) by Shier, Butler & Lewis. McGraw-Hill Higher Education. ISBN 978-0-07-340372-4. We will use Connect Plus for class and labs. You can purchase it as a stand alone product (ISBN: 978-0-07-763788-0 ) or online when you register for Connect<sup>1</sup>. You can register without paying: there is a two week trial period after which you will need to purchase access to Connect. **When you register and purchase Connect Plus an ebook is included in the cost. You do not need to purchase a paper copy unless you want to.**<sup>2</sup>
- Fearfully and wonderfully made by Philip Yancey & Paul Brand. Zondervan, 2010.

This is a four credit course that caters for allied-health professions (nursing, physical therapy, athletics etc. . . ). The purpose of this course is:

- to help students gain a practical understanding of human anatomy that they can use in the service of humankind to GOD's glory.
- for students to learn names, locations and interactions of anatomical structures.
- for students to learn how to describe anatomical structures and their interactions with other anatomical structures.
- for students to learn to think and talk anatomically using the correct anatomical terminology.
- for students to learn the organization of the human body's organ systems in preparation for the Introduction to Human Physiology course.

<sup>1</sup>To register enter Blackboard, select *content* and then select content folder *Learnsmart* and then select the first assignment, *Chapter 1: Introduction to Human Anatomy and Physiology*.

<sup>2</sup>Investing the money in a good quality notebook computer or tablet might be a better idea.

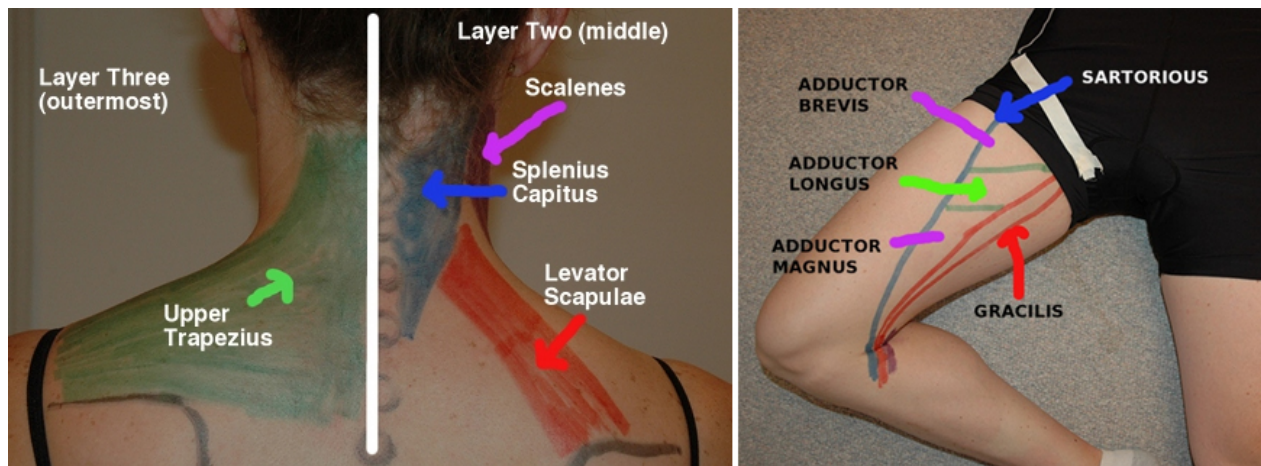
# Philosophy of Learning & Teaching

The idea of the brain storing discrete pieces of memory in defined areas is not correct. The brain assembles memories by using different parts of the brain, especially the sensory parts of the brain: occipital cortex, auditory cortex, sensory cortex, motor cortex, parietal cortex etc... and forges connections between the brain regions. *Learning is an active process.* The more parts of your brain you engage the better you will learn. Memories are also assembled on a foundation of existing memories—*prior learning*. In each class you must be prepared to participate in accessing the prior learning of the class and assembling new memories.

Lectures will focus on introducing students to anatomical terminology and describing anatomical structures and their interactions. Labs will be directed at introducing students to human anatomy and creating an environment wherein they can learn the names and locations of anatomical structures. The labs reinforce the class material.

## Studying Anatomy

Anatomy is not an easy subject. You will need to learn names, locations as well as structures. Anatomy is not only about learning names and locations. It is principally about understanding how the anatomical structures interact to form a healthy functioning human being. To understand the anatomy you must be able to describe the structures and their interactions. Students should take a practical approach to studying anatomy. Most of the muscles and some of the blood vessels can be palpated or observed directly on your person. Using marker pens, tape and paper it is possible to use your body as canvas on which to study anatomy.



Photos taken from <http://www.athletestreatingathletes.com/>

You can, by knowing the points of insertion of muscles, work out what types of motions they can perform. Muscles are also named for their attachments and motions so these can be worked out based on your knowledge of the bones. As a general rule, nerves and blood vessels travel together<sup>3</sup> and possess the same root name. For example the ulnar nerve, ulnar artery and ulnar vein.

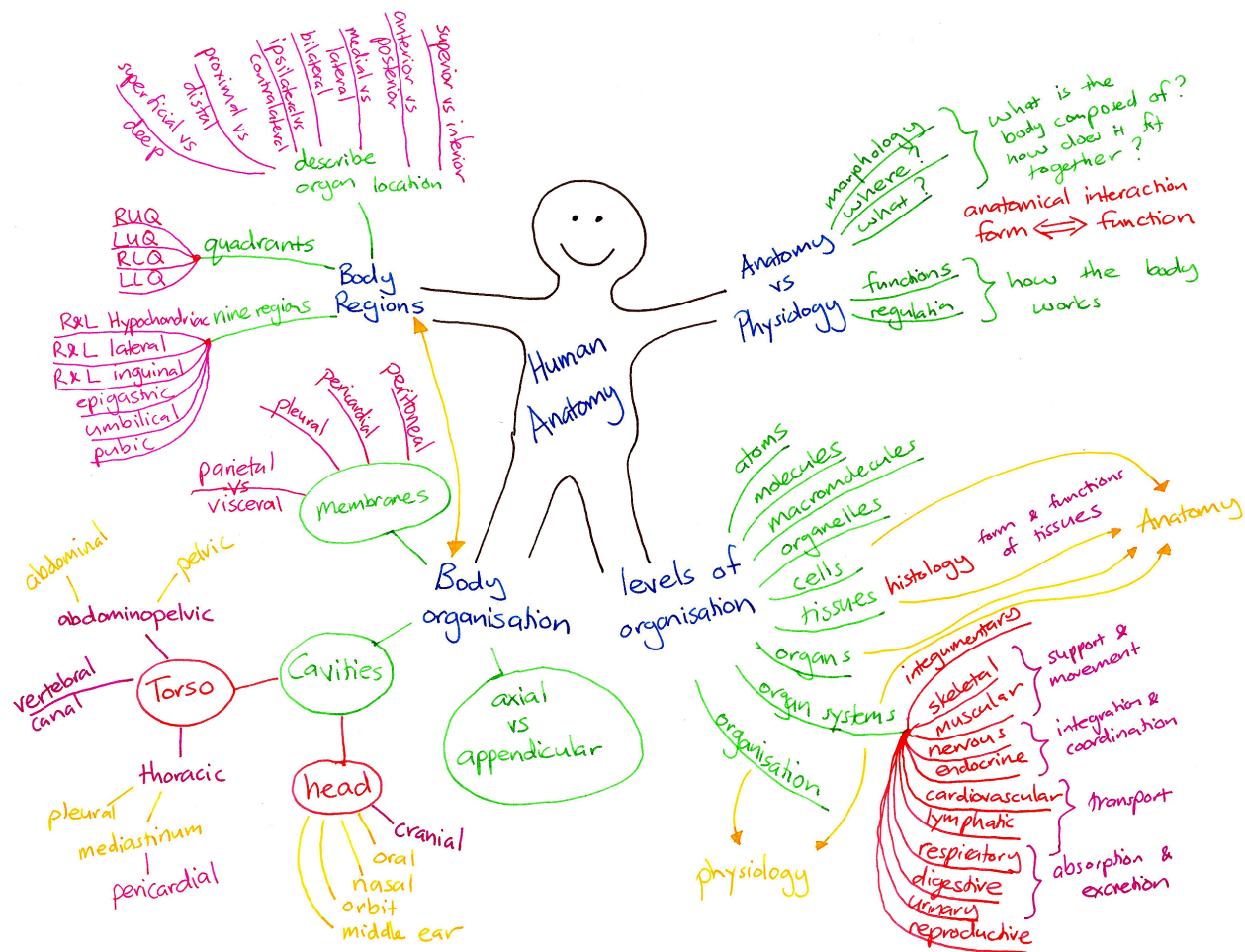
ConnectPlus LearnSmart is a dynamic learning tool. It will quiz you as you go through the textbook and adapt to requiz you on material you haven't mastered. The LearnSmart assignments will be due before each lecture. There will then be a timed online quiz of the lecture material to determine how much you have learned. These assignments and quizzes will count 10% of your final grade. To make the best of LearnSmart you should write out important information and make study notes as you go along. A word list and study questions will be made available on Blackboard (file: Study Guide) which will be updated as we progress. I like using mindmaps<sup>4</sup> or drawing out anatomical structures and annotating them (we will practice this in class). *To learn anatomy you must*

<sup>3</sup>Principle of relative positioning of structures in the human body. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4146091/>

<sup>4</sup>[https://en.wikipedia.org/wiki/Mind\\_map](https://en.wikipedia.org/wiki/Mind_map).

*draw anatomy.* I make a lot of use of the white board, on which I draw out anatomical features to explain their significance. Frame-work figures, where you draw in the missing information and annotation, will be uploaded to Blackboard for you to print out and bring to class so you can participate in the drawing of anatomy. When I use Powerpoint presentations I will make these slides available to you on Blackboard. I highlight and annotate portions of the ebook that is available online to guide your studies.

Labs are used to reinforce the material covered in class. You need to participate or they will be of no benefit to you. Lab participation is voluntary<sup>5</sup> and volunteers will be sought as human models in some labs to demonstrate anatomical structures. Towards the end of most labs there will be a viewing of the cadaver so the relevant anatomy can be reviewed.



Mindmap of Chapter 1.

For audio-visual learners, take any topic in the textbook and search Youtube and you will find something to help you. If you find something really useful, please share it with the rest of the class. A list of useful websites will be put on Blackboard.

## Integration of Faith & Learning

In many respects this is a practical course. What you will learn here will aid you in applying what you learn later. The application of your learning will enable you to serve GOD in the profession of your choosing. Learning Anatomy in this class is for the glory of GOD as well as your benefit. There is no need to link in Bible verses or

<sup>5</sup>Lab Assignments are compulsory. If you do not complete them then you won't get the credit.



lengthy theological discussion as the learning of Anatomy is worship in itself. The book, Fearfully and wonderfully made is supplied to you to see that your faith informs how you will use and think about what you learn in class; but also that learning the class material is what will enable you to serve GOD. You are learning Anatomy to realize your goal of service to humankind and GOD.

At times we will digress from the Anatomy curriculum to show how your learning of human Anatomy can enlighten your understanding of Scripture. Your faith will inform how you think about your learning; and your learning will inform your interpretation of Scripture and develop your faith. Faith and Learning are implicitly integrated.

## Evaluation & Student Obligations

Your efforts will be evaluated by seven means (percentages in brackets are the contribution of that section to your final grade):

1. **Mid-term Exams (40%):** there will be four mid-term exams worth 75– 100 points each. These will be administered during class times.
2. **Lab Quizzes (25%):** will take place during Labs and consist of 25 questions (usually 15 lab-related and 10 class-related questions). These quizzes will pertain to the previous Lab's work as well as the material covered the preceding 3 lectures (WFM). The lowest lab quiz grade will not be used to tabulate your final grade. If you miss a quiz for a valid reason (see the Student Handbook) you can retake the quiz. A word list is provided for each lab. You will need to know the name and location of each structure. (You will be provided an image and you will have to name the structures indicated.)
3. **Final Exam (15%):** will count 150 points and cover the entire semesters' work. It will take place on Monday the 14th of December from 10h30–12h30 in the regular class venue.
4. **Online LearnSmart Quiz (5%):** You will earn points by working through the textbook on Connect Plus. Ideally, these quizzes should be taken before the relevant lecture so that you can use the lecture to ask questions and revise instead of using the lectures as the primary location for learning. These online quizzes will close the day of the relevant class. They will be reopened again before the final exam.
5. **Online Quizzes (5%):** there will be a variable point quiz for each lecture. Questions from the class quizzes tend to reoccur in the the Lab Quizzes and exams. At times, a homework assignment might be given as preparation for an exam or to research information that isn't in the textbook. Points from these assignment will be included under "online quizzes". The top 20 quizzes will be used to tabulate your grade. Online quizzes remain active until the day of the relevant midterm exam.
6. **Online Lab Quizzes (5%):** After each lab there will be an online quiz. This quiz will be active up until the next lab period. This quiz will consist of several questions: structures you need to identify or name; or facts you should have learned from the lab. Some of these questions will reoccur in the in-lab Lab Quiz. If you have followed the lab notes, and worked through the lab you should be able to answer these questions.
7. **Journaling (5%):** you will be required to hand in a journal based on your thoughts from reading Brand's Fearfully & Wonderfully Made. A guide with exemplar questions to think about will be posted on Blackboard. They are graded on a 2 point scale<sup>6</sup>: if you did a good job (at least a page) you get 2 points; sloppy work will get you 1 point; if you hand in nothing you get 0 points. These points will be scaled up to 5% of your final grade.

Take note that in the above scheme that at least 20% of your grade is comprised of class work. If you work diligently through the work you need only attain an average of 66% for the exams and lab quizzes to achieve a C-average. Also, note that lab work counts 30% of your final grade. Lab work is important.

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<sup>6</sup>Good work expresses thought-out ideas and has few spelling and grammatical errors. Sloppy work has poorly developed ideas and has many spelling and grammatical errors.

Letter grades will be awarded according to the following scheme:

A	≥ 94%	B+	≥ 87%	C+	≥ 77%	D+	≥ 67%
A-	≥ 90%	B	≥ 83%	C	≥ 73%	D	≥ 63%
		B-	≥ 80%	C-	≥ 70%	D-	≥ 60 %

Actual scores are rounded up to determine the letter grade. For example, 72.5% would be reported as a C on your final grade report. Last year's class average was a B— and no one failed. All grades will be posted on Blackboard. If you require extra time or any other support in exams please contact me before the time so the proper arrangements can be made.

It is expected that you will attend class and exams. If you are involved in one or another sporting activity and you know in advance that you will not be in class for the exam **let me know before hand** so you can write the exam in a timely manner. In the case of an emergency, your exam can be rescheduled.

Please see the [Student Handbook](#) (pages 12 and 13) with regards to Academic Integrity, Cheating and Plagiarism<sup>7</sup>. It is your responsibility to know the rules. It is expected that you will respect the privacy of other students (see page 12) and try to avoid seeing another student's grade. Due to the manner by which exams and quizzes are returned this is not always practical. (If you are very sensitive about your grades let me know in advance.) Also see Accommodations for Students with Disabilities (page 3) and again, please let me know in advance if you need assistance.

**Policy on electronic devices:** Talking and texting in class is rude and disruptive. It is not permitted. The use of tablets and notebook computers are permitted for study purposes. Using them play games in class is distracting to others and is not permitted. The tapping of keys on a computer keyboard can be disruptive. Please take this into consideration. A soft-touch keyboard would be best for all should you decide to use a computer in class. If you bring a computer to class, please sit along the periphery of the class so as not to distract other students.

## Course Outline

The table on the following page is a tentative outline of the course. It is subject to change as needed but should correlate with the exams indicated. The sequence of class topics may change in response to the needs of the class. Every effort will be made to make sure that there is a Revision class the Wednesday before each exam. Email questions to the Prof in advance of this review session. Test dates will not be moved after the 31<sup>st</sup> of August (but exam content may be altered as needed). Please check other class syllabi to determine if there are any exam date conflicts. There will be a lab quiz every week except for the first lab. All exams will occur in the lecture venue.

The labs indicated in the table on the next page will cover the topics as indicated and occur on the dates indicated. The Lab# in this table correlate with those in the course outline. This timetable might change to adapt to the needs of the students. There will be a quiz at the start of each lab session that will cover the work of the previous lab as well the previous week's class work.

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<sup>7</sup>Plagiarism: to use the words or ideas of another person as if they were your own words or ideas. If you quote something from a website or book (by, for example, cutting-and-pasting), the correct thing to do is to cite the source.

Course outline with exam dates.

<b>Examination</b>	<b>Topic</b>	<b>Textbook Sections</b>
Exam 1 Friday September 11 75 points	Introduction Cells Tissues Integumentary System Labs 1–3	1.1–1.3, 1.6 & 1.7 + p31–38 3.1, 3.4 5.1–5.6 6.1–6.5
Exam 2 Friday October 2 100 points	Skeletal System Muscular System Labs 4–6	7.1–7.13 + p185–187 8.1–8.2, 8.5–8.8
Exam 3 Friday October 30 100 points	Nervous System The Senses Endocrine System Labs 8 & 9	9.1–9.5, 9.9–9.16 10.1–10.9 11.1, 11.2, 11.5–11.10
Exam 4 Friday November 20 100 points	Blood Cardiovascular System Lymphatic System Respiratory System Labs 10–12	12.1–12.3, 12.5 13.1, 13.2, 13.4, 13.6–13.8 14.1–14.3, 14.5–14.6 16.1–16.2
Final Exam 14 December, 08h00–10h00 150 points	all of the above but especially... Digestive System Urinary system Reproductive System Growth & Development Labs 1–14	15.1–15.10 17.1, 17.2, 17.4 19.1, 19.2, 19.4, 19.6 20.1–20.4

List of labs, their dates and the study topics covered in each lab.

<b>Lab #</b>	<b>Date</b>	<b>Topic</b>
Lab 1	August 25	Introduction & organ systems
Lab 2	September 1	Body regions & Surface Anatomy
Lab 3	September 8	Tissues & Skin
Lab 4	September 15	Musculo-skeletal systems: head & neck
Lab 5	September 22	Musculo-skeletal systems: torso
Lab 6	September 29	Musculo-skeletal systems: pectoral girdle & arms
Lab 7	October 6	Musculo-skeletal systems: pelvic girdle & legs
Lab 8	October 13	Nervous System: meninges & brain
Lab 9	October 27	Nervous System: peripheral & autonomic
Lab 10	November 3	Special senses & endocrine systems
Lab 11	November 10	Cardiovascular system: Heart & lungs
Lab 12	November 17	Cardiovascular system: blood vessels & lymphatics
Lab 13	November 24	Respiratory & Digestive System
Lab 14	December 1	Urinary & Reproductive systems
Lab 15	December 8	Growth & Development & Revision