ANATOMY & PHYSIOLOGY (STUDENT'S GUIDE)

MANUAL PRACTICAL

BOOK & ATLAS

By

DR. ANUAR MD ZAIN (Senior Lecturer – Anatomy & Physiology)

UniSZA

Preface

From the Author

Anatomy & Physiology has been core knowledge for medical, nurses as well as all health sciences students. This companion book and atlas has been revised to match the new edition of the main text, providing varied learning activities to facilitate and reinforce learning process.

The systems approach of the main text forms the framework for the exercises, many of which are based on clear illustrations of body structure and functions.

I hope that you will find this book a stimulating and useful companion to your anatomy and physiology studies including those when revision is essentially acquired.

I would to expressed my deepest thank to all faculty member, would have been unable to prepare this manual & atlas book.

Thank you.

ANUAR MD ZAIN
M.Sc & Ph.D in Medical Physiology
B.Sc (Hons.) in BioMedical Science
Lecturer & Subject Coordinator
Human Anatomy & Physiology

Content

Learning Activities Sheet

Student name: .....
Matric No: .....

Place a checkmark in the appropriate box as you complete each of the steps below

1. ❑	Take	Manual sheets provided by your instructor.
2. ❑	Stop	Have your instructor evaluate your performance Follow your instructor's recommendations concerning the following learning activities.
3. ❑	Read	Module Objective Sheet.
4. ❑	Study	Information Sheet OR objectives obtained from each practical.
5. ❑	Research	Find any related anatomy & physiology reference books OR online resources to learn more about the organization of the human body.
6. ❑	Do	Assignment Sheet provided in each practical session (if any).
7. ❑	Stop	Have your instructor evaluate your performance/answers. If the evaluation is satisfactory, continue to step 8. If the evaluation is NOT satisfactory, repeat step 6.
8. ❑	Study	Student Handout's OR any extra notes given by your Lecturer/Instructor
		Have your instructor evaluate your performance.
		Follow your instructor's recommendations concerning a review of the above learning activities.
9. ❑	SUBMIT	Lab report/answers to your Instructor/Lecturer.

Report format

1. **Title Page**
    - The title of the experiment.
    - Name / names of any lab partners.
    - Matriculation number and program.
    - Lecturer's name.
    - The date the lab was performed
2. **Title**

   The title says what you did. It should be brief (aim for ten words or less) and describe the main point of the experiment or investigation. An example of a title would be: "Effects of Ultraviolet Light on Borax Crystal Growth Rate". If you can, begin your title using a keyword rather than an article like 'The' or 'A'.
3. **Introduction / Objective**

   Usually the Introduction is one paragraph that explains the objectives or purpose of the lab. In one sentence, state the hypothesis. Sometimes an introduction may contain background information, briefly summarize how the experiment was performed, state the findings of the experiment, and list the conclusions of the investigation. Even if you don't write a whole introduction, you need to state the purpose of the experiment, or why you did it. This would be where you state your hypothesis.
4. **Materials / Reagents / Apparatus**

   List everything needed to complete your experiment.
5. **Methods / Procedures**

   Describe the steps you completed during your investigation. This is your procedure. Be sufficiently detailed that anyone could read this section and duplicate your experiment. Write it as if you were giving direction for someone else to do the lab. It may be helpful to provide a Figure to diagram your experimental setup.
6. **Data**

   Numerical data obtained from your procedure usually is presented as a table. Data encompasses what you recorded when you conducted the experiment. It's just the facts, not any interpretation of what they mean.
7. **Results**

   Describe in words what the data means. Sometimes the Results section is combined with the Discussion (Results & Discussion).

8. **Discussion or Analysis**

   The Data section contains numbers. The Analysis section contains any calculations you made based on those numbers. This is where you interpret the data and determine whether or not a hypothesis was accepted. This is also where you would discuss any mistakes you might have made while conducting the investigation. You may wish to describe ways the study might have been improved.

9. **Conclusions**

   Most of the time the conclusion is a single paragraph that sums up what happened in the experiment, whether your hypothesis was accepted or rejected, and what this means.

10. **Figures & Graphs**

    Graphs and figures must both be labelled with a descriptive title. Label the axes on a graph, being sure to include units of measurement. The independent variable is on the X-axis. The dependent variable (the one you are measuring) is on the Y-axis. Be sure to refer to figures and graphs in the text of your report. The first figure is Figure 1, the second figure is Figure 2, etc.

11. **References**

    If your research was based on someone else's work or if you cited facts that require documentation, then you should list these references.

- Laboratory reports should be prepared **INDIVIDUALLY**
- Send reports **BEFORE THE NEXT PRACTICAL SESSION**

Orientation

Welcome to the human anatomy and physiology laboratory that accompanies the lecture in DBB10103, DBB10403, DBP10103, DBP10503, NDN10203, DBL10103, DBL10903, DBR11103 - Human Anatomy & Physiology. This lab provides you with a rare opportunity to explore anatomy using dissected human cadavers. Exploring cadavers is the true approach to learning anatomy, that is, experiencing anatomy in its three-dimensional reality. There is no better way to learn this subject. In lecture you will use your sense of hearing to listen and learn and your visual sense to see two-dimensional illustrations throughout the lecture. The lab opens the door to additional senses — those of touch, three-dimensional vision, and even the unique smell of a cadaver lab. This allows you to gain a total exposure to the design of the human body.

You may have asked yourself as you were registering for this class, what can I expect in the anatomy lab? How do I prepare for lab? What is expected of me? The following information will help answer these questions and provide guidelines for a successful learning experience.

1. Each lab will begin with a visual quiz that will require approximately 10 minutes to administer. There will be a total of eleven quizzes during the semester. All will count towards your grade. The quizzes are administered at the beginning of lab, so be on time. Questions will not be repeated for latecomers. You must attend the lab for which you are registered. **Only under extenuating circumstances, and with written approval, can you take a quiz in another session, or for that matter attend another lab time.**

2. The quizzes are visual tests that you will take at the beginning of the lab session. The quiz will cover the material that you will study in the lab. The purpose behind quizzing students on material they will be studying in the current lab is to encourage students to come to lab prepared. Years of experience, have demonstrated that this helps students get the most out of their lab experience. The E-Books in Human Anatomy & Physiology that accompanies your books contains numerous cadaver photographs that you will study in preparation for the lab quizzes. These cadaver photographs correspond to lecture material from the previous week and are similar to the cadaver materials you will study in the lab. Each photograph is a professionally prepared dissection to not only help you prepare for the lab, but also to allow you to take the lab home with you. By having access to these excellent photographs, you can study the cadavers from the lab without being in the lab.

3. Attendance is required as the lab is 30% of the course grade. The lab time should be used wisely. Again, history demonstrates that the students who perform best in the course are those who come prepared for lab, work hard, and do not waste time in the laboratory.

4. There can be no food or drinks in the lab.

5. A seating chart will be assigned, so pick the seat you want for the semester. This helps the teaching staff learn your names and allows them to run a more orderly lab.

6. **Never touch skeletal material or models with pens and pencils as it mars these expensive, hard-to-replace materials.** Use a probe to point to these objects. Handle all skeletal material with extreme care, as this will help us prolong the use of these unique and valuable teaching materials.

7. Guests and visitors are not allowed in the lab. There is simply not enough room for people who are not registered for the course to attend the lab.

8. Anatomical materials cannot be loaned out to students. The materials used in the lab are to remain within the lab. There are no exceptions.

9. It is a privilege to have human body parts to study and use as learning aids. Very few undergraduate courses have access to human body parts. Please respect this privilege.

10. Following the quiz there will be a brief orientation by the teaching assistant in charge of the lab. This will be followed by the general lab work (if applicable during the practical session).

11. **Students are responsible for identifying the structures listed on the designated pages of this manual for quiz and test purposes**. During the lab you will work with teaching assistants/lecturer who will teach you using the prosected cadavers. They will help you identify the structures listed in the lab manual and will teach you techniques to learn anatomy on the cadaver prosections.

12. Students should prepare for lab by reading the objectives for the pertinent lab each week. This is extremely important. If you are prepared, you will maximize your learning experience.

13. It is important to use the lab time wisely. During the majority of the lab period you will be involved in small, structured learning groups. In these small groups a teaching assistant will work with you to help you see and learn the anatomy on the cadavers. There will be other periods of time during some of the labs where you will have time to review what you are learning by taking practice practical examinations.

14. The lab contains a variety of materials to help you visualize the anatomy being covered in the lectures. There are pictures, models, and human body parts. Be aware of all these materials and use them to your full advantage in learning anatomy.

15. Take advantage of the staff of teaching assistants in the labs. Do not hesitate to ask questions. **The only bad questions are those that are not asked!** Every effort will be made to answer even the most difficult of questions.

16. The anatomy & physiology staff encourages you to fully participate and take complete advantage of the materials and resources available. With proper **preparation,** this lab can be an exciting and unique educational experience.

17. **After the lab is over**

Towards the end of the semester, you will have the opportunity to attend review labs on weekdays. This provides you with an opportunity to study the cadavers and reinforce the material that you are learning as you prepare for the final practical examination, an **OSPE**. This section of the lab manual will help you prepare for these reviews. After you have completed the lab, use this section to jot down notes on the structures and cadaver parts that you feel you would like to review in more detail. Being able to refer back to these notes will help you maximize your time during the weekend review labs. One of the major objectives you should keep in mind throughout the labs is to be constantly preparing for the lab practical examination. This review section can help you focus your efforts toward this end. Review labs allow you to study the body parts on your own, emphasizing your own specific needs. You determine where you need to spend your time and you then spend it most effectively. If you will look back over this section before coming to the special review labs, you will find that you can maximize your learning efforts.

HAVE FUN GUYS AND GOOD LUCK !

UNISZA