For Students- BIO 141 and BIO 142- Lab

I have summarized the lab requirements for the Human Anatomy and Physiology Laboratory Classes.

The students must check the lab activities mentioned in this handout and the lab manual.

Some lab activities such as key terms, pre lab diagram labeling, tracing the pathways, reading materials in the lab manual need to be completed outside the class room- home assignments

Experiments, dissections, class activities, model inventories, and experiments are some of the class activities have to be performed in the class room.

You need to know the materials needed for lab quizzes.

Key terms, labeling the diagrams, and the models are included in the lab quiz and a must to learn.

Models supplied in the class room should be used for model inventories.

If you come early in the class room, you can start with taking model inventories and filling the tables provided in your lab manual.

Experiments and dissection should be done by forming a team in the class room.

Lab coat, gloves, goggles should be worn during the time of experiments as stated in your lab manual.

I have tried to summarize the most important lab materials that are needed during the course. I am not responsible for any omission, typing error, or any mistakes in this handout. Please always check the syllabus and your lab manual for accuracy.
BIO 142- First Lab Activities to do- Chapter 12- Nervous Tissue

Please follow procedure below for the rest of the labs during Spring Session. If you need my assistance or direction, please seek help:

1. Complete the key terms. Can be done outside the class
2. Label and color the diagrams- in the class room
3. Complete the exercises- Reading and understanding- before coming to class
4. Complete the model inventories and tables- in the class room
5. Check your recall- complete after all the activities are done for the chapter
6. Check your understanding- complete after all the activities are done for the chapter

Lab Activities in the class room: Must be completed in the classroom

1. Page 289- Procedure – Model Inventory for Nervous Tissue
2. Page 290- Procedure Microscopy of Nervous Tissue
3. Page 292- Procedure- Time to Trace- Neuronal Action Potential-
4. Lab Model- in the lab
BIO 142 - Second Lab Activities to do- Central Nervous System (Chapter 13) and peripheral and Autonomic Nervous System (Chapter 14)

Please follow procedure below for the rest of the labs during Spring Session. If you need my assistance or direction, please seek help:

1. Complete the key terms. Can be done outside the class
2. Label and color the diagrams- in the class room
3. Complete the exercises- Reading and understanding- before coming to class
4. Complete the Dissection- Brain- in the class room
5. Complete the model inventories and tables- in the class room
6. Check your recall- complete after all the activities are done for the chapter
7. Check your understanding- complete after all the activities are done for the chapter

Lab Activities in the class room: Must be completed in the classroom

1. Page 339- Procedure – Testing the Cranial Nerves
2. Page 346- Procedure Testing the Spinal Reflex
3. Page 349- Procedure- Testing Blood Pressure and Heart Rate Response to Exercise
BIO 142- Third Lab Activities to do- general and Special Senses (Chapter 15)

Please follow procedure below for the rest of the labs during Spring Session. If you need my assistance or direction, please seek help:

1. Complete the key terms. Can be done outside the class

2. Label and color the diagrams (Pre Lab Exercises) - in the class room

3. Complete the Pre Lab Exercises and Exercises- Please Read and take notes before coming to class

4. Page 366/370/376- Procedure- Model Inventory for the Eye/Ear/Olfaction and Taste first (table 15.2- table 15.3-table 15.5) - Complete the model inventories and tables- in the class room

5. Page 367- procedure Eyeball Dissection in the class room

6. Check your recall- complete after all the activities are done for the chapter

7. Check your understanding- complete after all the activities are done for the chapter.

Lab Activities in the classroom: Must be completed in the classroom

1. Page 368- Procedure – Comparing the Distribution of Rods and Cones
2. Page 369- Procedure Testing the Extraocular Muscles
4. Page 373- Procedure- Hearing Acuity- Rinne Test- tuning fork- sensorineural hearing loss- damage to inner ear or the vestibulocochlear nerve
5. Page 374- Equilibrium- Procedure Romberg Test
6. Page 377- Procedure- Testing Error of Localization or tactile localization- ability to determine the location of skin touched
7. Page 378- Procedure- Testing Two-Point Discrimination- assesses the ability to perceive the number of stimuli (points) placed on the skin
BIO 142 - Fourth Lab Activities to do- Lymphatic System (Chapter 20), Digestive System (Chapter 23), Endocrine System (Chapter 26)

Please follow procedure below for the rest of the labs during Spring Session. If you need my assistance or direction, please seek help:

1. Complete the key terms. Can be done outside the class

2. Label and color the diagrams (Pre Lab Exercises) - in the class room

3. Complete the Pre Lab Exercises and Exercises- Please Read and take notes before coming to class

4. Page 493/370/376/633- Procedure- Model Inventory for the Digestive/Endocrine (table 23.1- table 23.2-table 23.3- table 26-1 table 26-2) - Complete the model inventories and tables- in the class room

5. Check your recall- complete after all the activities are done for the chapter

6. Check your understanding- complete after all the activities are done for the chapter.

7. Tracing

Lab Activities in the class room: Must be completed in the classroom

1. Page 494- Procedure – Tracing the Flow of Lymph through the Body
2. Page 562- Procedure Model Inventory for the Digestive System
3. Page 569- Procedure- Model Inventory for the Histologic Structures of the Digestive System
4. Page 569- Procedure- Microscopy of Digestive Organs
5. Page 573- Procedure-Test Carbohydrate Digestion (experiment)
6. Page 575- Procedure- Test Protein Digestion (experiment)
7. Page 577- Procedure- Test Lipid digestion (experiment)
8. Page 579- Tracing Steps- Cookie
9. Page 638- Procedure Model Inventory of the Endocrine System
10. Page 641- Procedure Microscopy
11. Page 642- Time to Trace
12. Page 644- Endocrine “Mystery cases”
BIO 142 - Fifth Lab Activities to do- Urinary System Anatomy (Chapter 24), Urinary System Physiology (Chapter 25), Reproductive System (Chapter 27), Human Development and Heredity (Chapter 28), and The Big Picture of Human Anatomy and Physiology (Chapter 29).

Please follow procedure below for the rest of the labs during Spring Session. If you need my assistance or direction, please seek help:

1. Complete the key terms. Can be done outside the class

2. Label and color the diagrams (Pre Lab Exercises) - in the class room

3. Complete the Pre Lab Exercises and Exercises- Please Read and take notes before coming to class


5. Check your recall- complete after all the activities are done for the chapter

6. Check your understanding- complete after all the activities are done for the chapter.

7. Tracing

Lab Activities in the class room: Must be completed in the classroom

1. Page 598- Procedure – Model Inventory for the Urinary System
2. Page 599- Procedure- Kidney Dissection
3. Page 603- Procedure- Microscopy
4. Page 616- Procedure- Making a Model Kidney and Testing Glomerular Filtration
5. Page 618- Procedure-Urinalysis part one and part two (experiment)
6. Page 621- Time to Trace
7. Page 658- Stages of Mitosis (table 27.1)
8. Page 660- Procedure- Model Inventory for the Male Reproductive System
9. Page 664- Procedure- Model Inventory for the Female Reproductive System
13. Page 671- procedure- time to Trace- male gamete and female gamete
14. Page 686- Procedure- Time to Trace
15. Page 689- Procedure- Model Inventory of fetal Development
16. Procedure- Determining paternity with Blood typing- table 28.3 and 28.4
17. Page 694- testing the Ability to Taste PTC
18. Procedure- Testing Color Vision
BIO 141- First Lab Activities to do- Introduction to Anatomical terms (Chapter 1)

Please follow procedure below for the rest of the labs during Spring Session. If you need my assistance or direction, please seek help:

1. Complete the key terms. Can be done outside the class

2. Label and color the diagrams- in the class room

3. Complete the exercises- Reading and understanding- before coming to class

5. Complete the model inventories and tables - in the class room

6. Check your recall- complete after all the activities are done for the chapter

7. Check your understanding- complete after all the activities are done for the chapter

Lab Activities in the class room: Must be completed in the classroom

Page 5- Procedure- Demonstrating Anatomical Position
Page 6- Procedure- Directional Terms
Page 7-8- Procedure- Regional terms
Page 9- Procedure- Body cavities and membranes
Page 11- Fetal Pig Dissection- Four Students will form a Team- Fill Table 1.2
Page 15- Procedure- Serous Membranes
Page 16- Procedure- Application of Terms, Cavities, and Membranes
Page 17- Procedure- Sectioning Along Anatomical Planes
Page 18- Procedure- Identifying Examples of Anatomical Planes of Sections
Page 19- Procedure- Organs
Page 20- Procedure- Organ Systems
Please follow procedure below for the rest of the labs during Spring Session. If you need my assistance or direction, please seek help:

1. Complete the key terms. Can be done outside the class

2. Label and color the diagrams- in the class room

3. Complete the exercises- Reading and understanding- before coming to class

4. Complete the model inventories and tables- in the class room

5. Check your recall- complete after all the activities are done for the chapter

6. Check your understanding- complete after all the activities are done for the chapter

Lab Activities in the class room: Must be completed in the classroom

Page 52- Procedure- Magnification
Page 54- Procedure- Focusing the Microscope
Page 68- Procedure- Preparing a cell sample
Page 70- Procedure- Examining the Cellular Diversity with Microscopy
Page 72- Measuring the Rates of Diffusion
Page 75- Procedure- Watching Osmosis in Action
Page 78- Procedure- Identify Structure of Cell division
Page 78- Procedure- Model Mitosis
Page 79- Procedure- Microscopy of the Cell Cycle
Page 94- Procedure- Microscopy of the Epithelial Cells
Page 102- Procedure- Microscopy of Connective Tissue proper
Page 104- Procedure- Microscopy of Cartilage
Page 106- Procedure- Microscopy of Bone and Blood
Page 108- Procedure- Microscopy of Muscle Tissue
Page 110- Procedure- Microscopy of Nervous Tissue
Page 111- Procedure- Determine Major Tissue Types of Organs
Page 112- Procedure- Build an organ
Page 125- Procedure- Model Inventory for the Integumentary System
Page 127- Procedure- Microscopy of the Skin
Page 128- Procedure- Mapping Touch receptor Distribution
Page 130- Procedure- Fingerprint Analysis
**BIO 141- Third Lab Activities to do- Introduction to Skeletal System (Chapter 7) Skeletal System (Chapter 8) Articulation (Chapter 9)**

Please follow procedure below for the rest of the labs during Spring Session. If you need my assistance or direction, please seek help:

1. Complete the key terms. Can be done outside the class
2. Label and color the diagrams- in the class room
3. Complete the exercises- Reading and understanding- before coming to class
4. Complete the model inventories and tables in the class room
5. Check your recall- complete after all the activities are done for the chapter
6. Check your understanding- complete after all the activities are done for the chapter

**Lab Activities in the class room: Must be completed in the classroom**

Page 143- Procedure- Model Inventory for Compact Bone and Spongy Bone
Page 143- Procedure- Microscopy
Page 144- Procedure- Examining the Chemical components of Bone- Experiment
Page 146- Procedure- Identifying Bone Shapes
Page 148- Procedure- Identification of Long Bone Structures
Page 167 and Page 181 - Please learn the Cranial, Facial Bones and Other structures, Remaining Structures of the Axial Skeleton, Pectoral Girdle and Upper Limb, Pelvic girdle and Lower Limb= listed in Exercise 8-1 (page 159) Exercise 8-2 (page 168) Exercise 8-3 (page 173), Exercise 8-4 (page 183)
Page 208- Procedure- Structural and Functional Classification of Joints
Page 209- Procedure- Identify Structure of Synovial Joints
Page 211- Procedure- Classification of Synovial Joint
Page 213- Procedure- Testing the Integrity of the ACL and PCL- Experiment
Page 215- Procedure- Identifying Joint Motions of Common Movements
BIO 141 - Fourth Lab Activities to do- Muscle tissue (Chapter 10) Muscular System (Chapter 11)

Please follow procedure below for the rest of the labs during Spring Session. If you need my assistance or direction, please seek help:

1. Complete the key terms. Can be done outside the class
2. Label and color the diagrams- in the class room
3. Complete the exercises- Reading and understanding- before coming to class
4. Complete the model inventories and tables- table 10.2/table 11.1/ table 11.2 on page 231, page 267, and page 269 in the class room
5. Check your recall- complete after all the activities are done for the chapter
6. Check your understanding- complete after all the activities are done for the chapter

**Lab Activities in the class room: Must be completed in the classroom**

Page 228- Three types of Muscle Tissue
Page 232- Procedure- Microscopy of Skeletal Muscle Tissue
Page 233- Procedure- Model Inventory for the Neuromuscular Junction
Page 234- Procedure- Microscopy of the Neuromuscular Junction
Page 236- Procedure- Time to Trace- Neuron Action Potential
Page 237 – Diagramming Your Tracing
Page 238- Procedure- Measuring the Length-Tension Relationship- experiment- upon availability of hand dynamometer
Page 242- Procedure- Microscopy of Cardiac and Smooth Muscle Tissue
Page 267- Procedure- Model Inventory of Skeletal Muscles
Page 268- Procedure- Build Muscles
Page 271- Procedure- Determine the Muscles Involved in Common Movements
Models Present in the Lab
**BIO 141 - Fifth Lab Activities to do - Cardiovascular System: Part 1 the Heart (Chapter 16), Cardiovascular System- Part II: Blood vessel Anatomy (Chapter 17), Cardiovascular System- Part III: Cardiovascular Physiology, Blood (Chapter 19), Respiratory System Anatomy (Chapter 21), Respiratory System Physiology (Chapter 22)**

Please follow procedure below for the rest of the labs during Spring Session. If you need my assistance or direction, please seek help:

1. Complete the key terms/pathways. Can be done outside the class
2. Label and color the diagrams- in the class room
3. Complete the exercises- Reading and understanding- before coming to class
5. Check your recall- complete after all the activities are done for the chapter
6. Check your understanding- complete after all the activities are done for the chapter

**Lab Activities in the class room: Must be completed in the classroom**

- Page 396- Model Inventory for the Heart
- Page 398- Procedure- Heart Dissection
- Page 401- Procedure- Tracing Blood through the Heart
- Page 402- procedure- Microscopy of cardiac Muscle Tissue
- Page 404- Procedure- Tracing the Electrical Events of the Heart
- Page 421- Model Inventory for arteries
- Page 426- Model Inventory for veins
- Page 435- procedure- Microscopy
- Page 448- Procedure- Heart Auscultation Result
- Page 449- procedure- Pulse Palpation
- Page 450- Auscultation for carotid Bruits
- Page 451- Measuring capillary Refill Time
- Page 452- procedure- measuring Blood pressure
- Page 453- Measuring the effects of Autonomic nervous System on Blood pressure and Heart Rate
- Page 454- Measuring the effects of Caffeine on Blood pressure and Heart Rate
- Page 455- Procedure- Ankle-Brachial Index
- Page 459- Procedure- Interpreting an ECG
- Page 468- Procedure- Microscopy of a Peripheral Blood Smear
- Page 470- Procedure- performing a Differential White Blood cell Count
- Page 472- Procedure- Testing Simulated Blood
- Page 473 – Procedure- Solving the Murder Mysteries - if time permits
Page 476: Procedure- Blood type Matching Practice
Page 478: Procedure- type matching Transfusions
Page 519: Procedure- Model Inventory for the Respiratory System
Page 520: procedure- Time to Trace
Page 524: procedure- Microscopy
Page 526: Model
Page 535: Respiratory Volumes and capacities
Page 536: labeling Pulmonary Volume and capacities
Page 538: Procedure- model Ventilation with Bell-Jar Model
Page 540: procedure- Measuring respiratory Volumes with a Wet Spirometer
Page 543: procedure- Measure the Effect of carbon Dioxide on the pH of a Solution