

PRIMARY HUMAN ANATOMY: BIOL20600
SPRING 2007

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Lectures: Tues. and Thurs. 8:00 - 9:15 am in Textor 102

Labs: M 1:00 and 3:00 pm, T 9:25 am and 1:00 pm, R 9:25 am and 1:00 pm in CNS 202

Required Texts:

1. Martini, F.H. and M.J. Timmons, R.B. Tallitsch. 2006. *Human Anatomy* 5th ed. Prentice Hall ISBN 0-8053-7210-5
2. Kapit, W. and L.M. Elson. 2002. *The Anatomy Coloring Book* 3rd ed. Benjamin Cummings. ISBN 0-8053-5086-1

Optional Text: Moses, K.P., J.C. Banks, P.B. Nava and D. Petersen. 2005. *Atlas of Clinical Gross Anatomy* Elsevier/Mosby ISBN 0-3230-3744-5

Objectives:

This course is designed for students in the Occupational and Physical Therapy programs. It can count as an elective for students in the Biology/Biochemistry majors. The purpose is to introduce you to the study of human anatomy and to prepare you for future courses involving dissection of the cadaver. The *Atlas of Clinical Gross Anatomy* will be used in the summer PT/OT anatomy course at Rochester. We will begin by defining terminology and outlining the basic organization of the body. We will concentrate our discussion on the skeletal, muscular, nervous and cardiovascular systems. In the second half of the term we will focus on regional anatomy.

In the laboratory we will study the bones and major muscles of the body. We will use muscle cards and patterns to learn actions, attachments and nerve supply. Surface anatomy will be highlighted. There will be a hands-on opportunity to examine human skeletons, models and sheep brains and to view videotapes of cadaver dissections. The cat will be used in the second half of the term as a model for teaching good dissection techniques.

Web Access: through WebCT <http://courses.ithaca.edu>

Evaluation of Learning:

LECTURE: 3 tests each worth 10% = 30%

LABORATORY: 9 quizzes + 2 presentations + participation = 25%

LAB FINAL (week of April 30-May 3 in lab period) = 15%

LECTURE FINAL (May, 7th 10:30 am) = 30%

TOTAL = 100%

*Please note: There are **no extra credit** assignments.

Course Policies:

Attendance: The undergraduate handbook states the general policy that students are expected to attend classes and that they are responsible for all material even when absent. Both lecture and laboratory are integral and essential parts of the course. If for a valid reason, you cannot attend your scheduled lab section, you must contact your lab instructor and make it up in another section during that week. **Two un-excused absences** from the laboratory or **conspicuous absences** from lecture and you will be **dropped from the course**.

Standards of Academic Conduct: These are outlined clearly in the student handbook: “Academic honesty is a cornerstone of the mission of the College”. Please familiarize yourself with the definition of plagiarism. Academic dishonesty can lead to a zero grade on that assignment, a failing grade in the course, academic code probation, suspension or expulsion from the College depending on the gravity of the violation and the decision of the judicial board.

Students with Disabilities: In compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act, reasonable accommodation will be provided to students with documented disabilities on a case by case basis. Students must register with the Office of Academic Support Services (607-274-1005, TDD 607-274-7319, acsdd@ithaca.edu) and schedule an appointment with their instructors as soon as possible to discuss their needs.

Dissection Policy: If a student has a compelling, valid reason for not performing the dissections (ethical, religious, medical) they must inform us in writing within the first two weeks of classes. In the letter the student should state the exact reasons for requesting an exemption. Requests will be evaluated and if necessary an alternate exercise will be assigned.

Reading assignments: You should familiarize yourself with the assigned chapters and coloring book pages *before* coming to class.

Group Presentations: Each student will do 2 muscle presentations during lab. Sign-up sheets will be circulated and full instructions will be discussed in the first lab period.

Lecture and Laboratory Tests: Tests are given during the lecture period scheduled and will be based on previous lectures, readings and muscles. Tests will include matching, short answer, multiple choice and diagrams. The final exam will be in the Hill Center gym on **Monday, May 7th at 10:30 am**. It will include all material covered in the course with an emphasis on regional anatomy. Lab tests will be given during the first 15 minutes of the lab periods indicated on the lab schedule. The final lab test is a comprehensive practical exam.

Missed tests: A test (lecture or lab) missed during an un-excused absence will result in a **zero grade for that test**. For an unexpected absence (illness, death or illness of immediate family, accident), you must inform us before the test if at all possible. You can call my voice mail (607-274-3610) and leave a message, email a message (muma@ithaca.edu) or contact the Biology office (607-274-3161). Such notification does not guarantee our accepting your reason for absence, but failing to notify us guarantees you will not be excused. Oversleeping **does not** constitute a valid excuse.

TENTATIVE LECTURE SCHEDULE

Chapters followed by (MTT) refer to Martini et al., Plates refer to the coloring book by Kapit and Elson, Atlas numbers refer to Moses et al. (Structures are shown on more than one figure in the texts and this syllabus highlights only some of those pages)

DATE	Topics
Tues. Jan. 23	1. Introduction + Terminology (Chapter 1 MTT, and p. 2 in Atlas) Coloring Book Plates 1 Anatomic Planes and Sections, 2 Position and Direction, 5+6 Regions of the Body, 23 Terms of Movements
Thurs. Jan. 25	2. Tissue Types (Chapter 3 MTT), Plates 10 Epithelium, 11 Connective Tissues, 12 Cartilage and Bone, 13 Muscle, 17 Integration of Tissues
Tues. Jan 30	3. Skeletal System (Chapter 5 MTT), Plates 20 Long Bone Structure, 21 Axial/Appendicular Skeletons
Thurs. Feb. 1	4. Articulations (Chapter 8 MTT), Plate 22 Classification of Joints, Joints of Thorax, bottom of Plate 30
Tues. Feb. 6	5. Muscular System (Chapter 9 MTT), Plates 44 Skeletal m., 45 Muscle Action, Extra-ocular mm. p. 263 MTT, Fig. 6.4 and Table 6.1 in Atlas and Plate 97
Thurs. Feb. 8	6. Muscles of Facial Expression + Mastication (Chapter 10 MTT), Plates 46, 47, and in the Atlas: Fig. 4.3, and sections of Tables 4.1 and 5.2, Temporomandibular joint (TMJ) - Fig 5.4 in Atlas and Plate 26, Review
Tues. Feb. 13	TEST # 1 (Lectures 1-6 + muscles to end of serratus anterior m.)
Thurs. Feb. 15	7. Nervous System (Chapter 13 MTT), Plate 70
Tues. Feb. 20	8. Spinal Cord / Spinal Nerves / Dermatomes (Chapter 14 MTT) Plates 77, 84, 90 and in the Atlas - Fig. 26.5
Thurs. Feb. 22	9. Cervical and Brachial Plexuses: (begin on p. 364 MTT), Plate 87 and in the Atlas sections on pages 172-180
Tues. Feb. 27	10. Brain (Chapter 15 MTT), Plates 73, 74, 75, 76
Thurs. March 1	11. Brain (continued) Meninges, Ventricles, CSF, Plates 80, 81, 82
Tues. March 6	12. Joints of the Back and Upper Extremity (parts of Chap. 8 MTT and Chap. 18 in the Atlas - Shoulder complex + Chap. 20 - Elbow jt.) Plates 32 Glenohumeral jt.+ 34 Elbow jts., Review
Thurs. March 8	TEST # 2 (Lectures 7-12 + muscles to pronator teres m.)
March 12 - 16	SPRING BREAK - Enjoy!
DATE	Topics

Tues. March 20	13. Joints of the Pelvis and Lower Extremity (parts of Chapter 8 MTT and Chapters 41 + 43 in Atlas), Plates 39 Sacroiliac and Hip Jts., 41 Knee Jt., 42 Ankle Jt.
Thurs. March 22	14. Cranial nerves (Chapter 15 - begin on p. 406 MTT, Table 3.4 in Atlas), Plate 83
Tues. March 27	15. Sensory Pathways (Chapter 16 MTT), Plate 78 - Ascending tracts
Thurs. March 29	16. Motor Pathways (Chapter 16 MTT), Plate 79 - Descending tracts
Tues. April 3	17. Autonomic Nervous System: Sympathetic Division (Chapter 17 MTT), Plates 92, 93
Thurs. April 5	18. ANS: Parasympathetic Division (Chapter 17 MTT), Plate 94
Tues. April 10	19. Cardiovascular + Lymphatic systems (Chapters 22 + 23 MTT), Plates 102, 103, 121 (*this lecture is NOT on Test #3)
Thurs. April 12	TEST #3 (Lectures 13-18, muscles to semitendinosus m.)
Tues. April 17	20. Heart Structure + Coronary Circulation (Chapter 21 MTT, Chapter 30 in Atlas), Plates 104, 105, 107
Thurs. April 19	21. Regional Anatomy: Putting it all together - Head and Neck (Figs. 22.13, 22.15, 22.22 MTT), Plate 48 Triangles of the Neck, 109 Arteries of the Brain, 116 Veins
Tues. April 24	22. Regional Anatomy: Upper Extremity (Figs. 11.8, 11.9, 22.12, 22.23 MTT), Movers of Hand Jts. Plate 59, Arteries and Veins Plate 110
Thurs. April 26	23. Regional Anatomy - Thorax (Figs. 24.14, 22.16, 22.23 MTT), Plates 112 Aorta + branches, 117 Azygos system
Tues. May 1	24. Regional Anatomy - Abdomen and Pelvis (Figs. 10.13, 10.15 MTT), Plates 51 Muscles of Anterior Abdominal Wall, 52 Pelvis, 53 Perineum
Thurs. May 3	25. Regional Anatomy - Lower extremity (Figs. 11.18, 11.20, 22.18, 22.19, 22.25 MTT), Plates 67 Muscles of the Foot, 111 Arteries of Lower Limb, 118 Veins of Lower Limb
Monday May 7	FINAL EXAM (10:30 am -12:30 in the Hill Center gym) - cumulative with emphasis on lectures 19-25 + muscles from weeks 10-12.

LABORATORY SCHEDULE

Lab Week	Bones / Dissection (Plates refer to Coloring Book, Pages to Atlas)	Muscles	Quiz
1 Jan. 22	Bones and sutures of the skull (Plate 24 and pp. 14-16 in Atlas)	Ant. neck m.	No quiz
2 Jan. 29	Axial Skel. - Vert., Thorax (Plates 28-30, Pages 300-306)	Post neck mm.	Quiz 1 - skull + sterno. m.
3 Feb. 5	Append. Skel. - Pectoral girdle + humerus (Plate 31, Pages 193, 207, 220, 221)	Pectoral mm.	Quiz 2 – vert. thorax, scalene mm.
4 Feb. 12	Ulna, Radius, Hand (Plates 33,35, 36, Pages 247, 256, 266, 270)	Extrinsic Scap. mm.	No quiz (lab 1-3 mm. on lect. test)
5 Feb. 19	Pelvic Girdle (Plates 37, 38, Pages 445 - 447)	Intrinsic Scap. mm.	Quiz 3 – all upper limb + ext. scap. mm.
6 Feb. 26	Femur, Leg, Foot (Plates 40, 42, 43, Pages 521, 535, 536, 547, 557, 570, 571) (on lab quiz March 26th)	Arm mm.	Quiz 4 – pelvic girdle + intrinsic scap. mm.
7 March 5	Skull II - holes (Plate 25, Pages 17, 18, 20)	Ant. Forearm mm.	No quiz (lab 4-6 mm. on lecture test)
March 12	*SPRING BREAK!	Enjoy!	
8 March 19	Sheep Brain + Cranial Nerves (Plates 73, 75, 83)	Post. Forearm mm.	Quiz 5 – *Ant. forearm mm. only
9 March 26	Cat Dissection - Skin	Gluteal group + Post. Thigh mm.	Quiz 6 - Lower limb bones + post. forearm mm.
10 April 2	Cat Dissection - Neck + Upper Extremity	Thigh mm.	Quiz 7 – Gluteal and post. thigh mm. only
11 April 9	Cat Dissection - Lower Extremity	Ant. and Medial Thigh mm.	No quiz (lab 7, 8, 9 mm on lect. test)
12 April 16	Cat Dissection - Viscera	Anterolateral and Post. Leg mm.	Quiz 8 – Thigh mm. (lab 10)
13 April 23	Review (Plates 60, 68, 69)	No new muscles!	Quiz 9 – Ant. + med. thigh mm. (lab 11)
April 30- May 3	Final Lab Test (during regular lab)		Refer to review sheet

MUSCLE ASSIGNMENTS LISTED BY LAB (see schedule on previous page)

You are responsible for the identification (diagram), function (actions), origin and insertion and innervations (nerve supply) for the following muscles. These muscles will be presented during lab and are tested in weekly lab quizzes AND on the lecture tests. Required answers are based on the tables in Moses et al. *Atlas of Clinical Gross Anatomy*. We recommend that you make flash cards and learn a “muscle a day”.

Lab / Muscles / (Atlas Table Number) - Coloring Book Plate

1. Sternocleidomastoid m. (Table 12.1 on page 134 in Atlas) + Plate 48 in coloring book
2. Anterior scalene m., Middle scalene m., Posterior scalene m. (Table 13.1 on page 149) + Plate 48
3. Pectoralis major m., Pectoralis minor m. Subclavius m., Serratus anterior m. (Table 15.1 on page 167) + Plates 54 + 56 (*note subclavius not shown)
4. Trapezius m., Latissimus dorsi m., Levator scapula m., Rhomboid major m. and Rhomboid minor m. (Table 17.1 on page 190) + Plates 54 + 56
5. Deltoid m., Supraspinatus m. Infraspinatus m., Teres minor m.(103), Teres major m., Subscapularis m. (Table 17.1 on page 190) + Plates 55 + 56
6. Biceps brachii m., Coracobrachialis m., Brachialis m., Triceps brachii m., Pronator teres m. (Table 19.1 on page 216 and Table 21.1 on page 242) - Plates 56 + 57
7. Flexor carpi radialis m., Flexor carpi ulnaris m., Flexor digitorum superficialis m., Pronator quadratus m. (Table 21.1 on page 242) - Plates 57 + 58
8. Brachioradialis m., Extensor carpi radialis longus m., Extensor carpi ulnaris m., Extensor digitorum m., Supinator m. (Table 22.1 on page 255) - Plates 57 + 58
9. Gluteus maximus m., Gluteus medius m., Biceps femoris m., Semimembranosus m., Semitendinosus m. (Table 42.1+ 42.2) - Plates 61 + 62
10. Psoas major m., Iliacus m. Tensor fasciae latae m., Sartorius m., Pectineus m. Gracilis m. (Table 40.1 p. 495 and Table 40.2 p. 495) - Plates 63 + 64
11. Quadriceps femoris group (Rectus femoris m., Vastus lateralis m., Vastus medialis m., Vastus intermedius m.) Adductor brevis m., Adductor longus m., Adductor magnus m., (Table 40.1 p. 495 and Table 40.2 p. 495) - Plates 63 + 64
12. Tibialis anterior m., Extensor digitorum longus m., Gastrocnemius m., Soleus m., Flexor digitorum longus m., Tibialis posterior m. (Table 44.1 and 45.1) - Parts of Plates 65 + 66

+ other muscles will be covered in lecture in less detail