PENNSTATE HERSHEY
College of Medicine

Structural Basis of Medical Practice SBMP 715

Academic Year 2012-2013
Fall Semester

PENNSTATE
Milton S. Hershey Medical Center
College of Medicine

SBMP 715: STRUCTURAL BASIS OF MEDICAL PRACTICE

COURSE SYLLABUS
Academic Year 2012-2013

SBMP Course Co-Directors

Dr. Loren A. Evey, Associate Professor
of Neural & Behavioral Sciences
Interim Co-Director
Telephone: 717-531-0003 x287626
E-mail: lae2@psu.edu

Dr. Gordon L. Kauffman, Jr.
Professor of Surgery, Medicine
C&M Physiology, and Humanities
Telephone: 717-531-8815
E-mail:gkauffman@hmc.psu.edu

Component	Director(s)	Room Number	Phone	E-mail
Gross Anatomy	Dr. Evey	C1709B	X287626	lae2@psu.edu
Embryology	Dr. Lazarus	C3739C	X285667	mdl19@psu.edu
Radiology	Dr. Brian	30 Hope Dr	X1093	plb14@psu.edu
Clinical Correlate	Dr. Bollard Dr. Berlin	C6860 C7833	X8390 X8006	ebollard@psu.edu cmb6@psu.edu
Surgical Elective	Dr. Mackay	C3840	X4340	dmackay@psu.edu
Humanities	Dr. Myers	C1743C	X8778	krm16@psu.edu

Interim Vice Dean for Educational Affairs	Dr. Eileen Moser	C1708	X3876
Director of Curriculum Development & Evaluation	Glenda Shoop	CG617G	X8563
Curriculum Coordinator (Yrs 1&2)	Tomi Kurzinger	C1704	X4304

Description and Overview

The Structural Basis of Medical Practice (SBMP) consists of Gross Anatomy, Embryology, Clinical Correlates for Gross Anatomy and Embryology, and Radiology. In addition, the students have the elective of a Surgical Correlate. This learning experience provides the opportunity to gain the fundamental knowledge of the gross structure, organization, development, and function of the human body in both a lecture and laboratory setting. The laboratory portion will consist of a complete dissection of the human body.

The course is structured in 4 major sections: i) Lower Extremity and Thorax, ii) Abdomen, Pelvis and Perineum, iii) Upper Extremity and Back, and iv) Head and Neck. The curriculum will be fully integrated as to gross anatomy, embryology, clinical correlates and radiology in each section.

Week 1	Week 2	Week 3	Week 4
		Exams #1 & #2	

Week 5	Week 6	Week 7	Week 8
	Exams #3 & #4		**Exams #5 & #6**

Week 9	Week 10	Week 11
		Exams #7 & #8

INVENTORY

Gross Anatomy

Lecture:	65 hours
Small Group/Lab:	118 hours

TOTAL: 183 hours (80%)

Radiology

Lecture:	9 hours
Review:	4 hours

TOTAL: 13 hours (6%)

Clinical Correlate

Gross:	26 hours
Embryology:	6 hours

TOTAL: 32 hours (14%)

SUBTOTAL: 228 hours

Exams 24 hours

TOTAL: 24 hours

GRAND TOTAL: 252 hours-11 week schedule

Goals and Objectives

1. Describe and identify the essential features of normal human anatomy at the tissue, organ, and system level.

2. Identify the position and extent of normal structures in radiographs, contrast studies, air studies, angiograms, echograms, cross-sections, CT scans, magnetic resonance images, and osteology material.

3. Describe the embryological development of organs and organ systems in a manner sufficient to understand the underlying defects in major congenital malformations.

4. State the anatomical basis of clinical procedures and pathological processes and seek an anatomical solution to a clinical problem.

Requirements and Expectations

The requirement of this course is to be enrolled as a student in medicine or in the Program on Education in Human Structure.

Our goal is to provide the preclinical foundation for medicine with respect to human structure, and to correlate this knowledge with the beginnings of understanding both pathobiology of disease and physical diagnosis. All of this within the realm of promoting team work, professional decorum and interaction, respect and compassion for others, honesty, integrity, self-reliance, and a sense of humor. The faculty and staff of SBMP are dedicated to excellence in teaching. Our view is that the faculty and staff of SBMP may be in need of your medical help in the future, and that it is in our best interest to have you learn as a much as possible.

OBJECTIVES FOR STUDENT LEARNING

1. Make competent physicians.
2. Present fundamental information of basic science with clinical overtones.
3. Encourage independence.
4. Develop rigorous thinking and work habits.
5. Develop skills in working with others.
6. Orient students to patient care.
7. Display role models for responsibility, compassion, and knowledge.
8. Provide a firm background of knowledge for application of today's medicine.
9. Provide a firm background of knowledge for application of tomorrow's medicine.
10. Give a broad based educational experience and generate individual training with general knowledge rather than small pockets of information or superficial skills.
11. Learn to be a keen observer.
12. Emphasize small group learning and interaction.
13. Learn problem solving.
14. Learn structural terminology - 10,000 new terms.
15. Learn pronunciation of medical terms.
16. Emphasize that accomplishment of terminology/pronunciation is the basis for communication to colleagues.

17. Learn resources such as CD ROMS, internet, MEDLINE, email.

18. Understand the human body and its construction so as to be a correlative basis for physical diagnosis.

19. Integrate knowledge from gross anatomy, embryology, radiology, histology, clinical correlates, and physical diagnosis.

20. Train physicians to make complicated decisions and evaluate facts.

21. Emphasize accurate diagnosis.

22. Relate that future medical practice will rely on physical diagnosis and skills of the physician rather than expensive testing.

23. Emphasize variability of the human body.

24. Emphasize disease processes and the seamless transition of basic science skills to clinical practice.

25. Examine students using broad range of testing material: essay, short answer, and photographs/diagrams.

26. Stress organizational skills for acquiring knowledge.

Required Texts and Resources

1. Dissecting Instruments Supplied by Multidiscipline Labs:

- Mayo-pattern dissecting scissors, 5 1/2”
- Sharp scissors, 4 1/2”
- Scalpel handle, Bard-Parker #4 (equivalent)
- Scalpel blades, Bard-Parker #22 (or equivalent)
- Huber probe
- Flexible probe
- Forceps sharp, 4 1/2”
- Forceps, thumb dressing, 5”
- Kelly hemostat, 5 1/2”

2. Scrubs or Laboratory Coat/Gloves/Shoes:

Scrubs or a white, knee-length coat, **reasonably clean** and in good condition, must be worn in the dissecting laboratory **at all times. Gloves are required for dissection. No open shoes (flip-flops, sandals) allowed.**

3. Required Textbooks:

Standring, S. Gray’s Anatomy: The Anatomical Basis of Clinical Practice, 40th ed., Lippincott Williams & Wilkins

4. Required Dissector:

Tank, P.W. Grant’s Dissector, 15th ed., Lippincott Williams & Wilkins

5. Required Atlas (only one is required):

Abrahams, P.H., Marks, S.C., Hutchings, R.T. McMinn’s Color Atlas of Human Anatomy, 6th ed., Elsevier

Agur, A., Lee, N. Grant’s Atlas of Anatomy, 13th ed., Lippincott Williams & Wilkins

Clemente, C.D. Anatomy: A Regional Atlas of the Human Body, 6th ed., Lippincott Williams & Wilkins

Drake, R.L, Vogl, A.W., Mitchell, A.W.M., Tibbitts, R.M., Richardson, P.E. Gray’s Atlas of Anatomy, 2nd ed., Churchill Livingstone (Elsevier)

Gilroy, A.M., MacPherson, B.R., Ross, L.M. Atlas of Anatomy, 1st ed., Thieme Stuttgart

Moses, K.P., Banks, J.C., Nava, P.B., Petersen, D. Atlas of Clinical Gross Anatomy, 2nd ed., Elsevier

Netter F. Atlas of Human Anatomy, 5th ed., Elsevier

Putz, R., Pabst, R. Sobotta. Atlas of Human Anatomy, 14th ed ,Elsevier

Rohen, J.W., C. Yokochi, E. Lutjen-Drecoll. Color Atlas of Anatomy, 7th ed., Lippincott Williams & Wilkins

Tank, P.W., Gest, T.R. Atlas of Anatomy, Lippincott Williams & Wilkins

6. Recommended Dictionary:

Stedman, Stedman's Medical Dictionary, 28th ed., Lippincott,Williams and Wilkins
Dorland, Dorland's Illustrated Dictionary, 32nd ed., Elsevier

7. Recommended Supplies:

Pens/Colored Pencils Masks (optional)

8. Additional Learning Tools for Consideration:

Texts: Moore, Agur, Dalley, Essential Clinical Anatomy, Clinically Oriented Anatomy, Hollinshead's, Textbook of Anatomy, Moore, Before We Are Born, T.W. Sadler Langman's Medical Embryology, Drake, Gray's Anatomy for Students, Morton, Gross Anatomy: The Big Picture, Toy, Ross, Cleary, Case Files Anatomy
Flash Cards: Netter, Gilroy, Grays
Review Books: High Yield Gross , High Yield Embryology, Chung, Gross Anatomy

9. Problems with taking exams:

In the event a student becomes ill and cannot be present for an examination, a doctor's excuse and a completed Notification of Absence form must be presented to the Curriculum Coordinator (Ms. Tomi Kurzinger, C1704) **within 48 hours of the schedule exam** and arrangements can be made to reschedule the examination. The student is required to contact a course co-director **prior** to the scheduled examination if he/she is unable to attend the exam

10. Bone Boxes

Each table will be assigned a numbered bone box to utilize during the lab portion of this course. As a group you will be responsible for the appropriate use and safe return of the material upon the completion of the final exam. *Note: the bone box must be returned in order to receive your final exam and course grades.*

Bone boxes are to be stored in the storage cabinets provided. *Note: Nothing except bone boxes can be stored in the cabinets. Other materials including lab coats, supplies, books, gloves, etc. will be discarded during periodic checks.*

If the box is returned with broken or missing specimens, a repair/replacement cost will be determined and divided equally among group members. Notices regarding monies due will be distributed to students in November. *Should action not be taken by you in accordance with the due date specified in the memo, a "hold" will be placed on your student loan and additional course registration until either the outstanding material or fee is received.*

Sample replacement costs (These are estimated – students are responsible for actual replacement costs).

Skull	$800	Articulate Hand	$150	Fibula	$40
Clavicle	$30	Tibia	$60	Complete box	$2,300

11. Course Evaluations

Students should complete course evaluations at 7 and 11 weeks.

12. Videos on Reserve in Library

1	Anatomy/Brain #2 Medical Surface
2	Anatomy of the Human Eye Series: The Extraocular Muscles
3	Anterior ASP Leg & Dorsum Foot, Guides Section
4	Anterior Aspect of Thigh Guides Dissection #8
5	Blunt Dissection of Major Fiber Systems-Human Brain
6	Dissection of the Thorax Series: Thoracic Wall, Part I
7	Dissection of the Thorax II Pleurae & Lungs
8	Dissection of the Thorax III, Middle Mediastinum
9	Dissection of the Thorax Series: Posterior & Superior Mediastina Pt IV
10	Female Pelvic Viscera
11	Functional Anatomy of the Hand
12	Gross Topography of the Brain: Anatomy/Brain #1
13	Human Embryology-Development of GI Tract
14	Osteo #1-Osteology of the Skull
15	Osteo #3-Osteology of the Skull-The Cranial Cavity
16	Osteo #4-Osteology of the Skull-Temporal Bone
17	Osteo #6-Osteology of the Skull-Inferior Surface of Cranium
18	Pathways for General Senses Trigeminal Nerve Functional Neuro
19	Placenta & Fetal Membrane
20	Plantar Aspect of Foot Guides/Dissection
21	Posterior Aspect of Leg Guides/Dissection
22	Posterior Aspect of Thigh Guides/Dissection
23	Shoulder/Arm
24	Acland's Video and DVD's Atlas of Human Anatomy
25	Tape 1: Upper Extremity – 2 hrs. 10 min.
26	Tape 2: Lower Extremity – 2 hrs. 28 min.
27	Tape 3: The Trunk – 2 hrs. 28 min.
28	Tape 4: Head & Neck, Part I – 2 hrs. 40 min.
29	Tape 5: Head & Neck, Part II – 2 hrs. 41 min.
30	Tape 6: The Internal Organs – 2 hrs. 32 min.

Electronic Links and References

http://www.humangrossanatomy.us

http://psh.mrooms.net

Grading Policy

The total number of points for SBMP will be 800.

Grades will reflect the total of 4 lecture examinations and 4 laboratory examinations (exams 1-8), each worth 100 points. Scores on the laboratory and on the lecture examinations will be provided, along with a cumulative (running) average of all examinations.

60% will be the passing grade for all examinations.

Individuals with a cumulative (running) average of less than 60% after each set of examinations will be asked to meet with the faculty in order to provide guidance for improvement.

To pass the course students must have a cumulative (running) average of 60% on all 8 examinations and a score of at least 60% on 5 of the 8 examinations.

Approximately 10-15% of the class will receive an Honors grade.

Approximately 10-15% of the class will receive a High Pass grade.

Examination Policy

Students are required to take all examinations.

There will be a lecture and laboratory examination for each of the 4 sections of the course (i.e., 4 lecture and 4 laboratory exams).

Inasmuch as possible, each examination will reflect a particular section of work. In other words, the examinations will not measure cumulative learning. However, structures (e.g., nerves, arteries) in one section of work that overlap with another section will be the responsibility of the student.

Unless otherwise noted by the faculty, only information from the textbooks (Standring, Gray's Anatomy) or the dissector (Grant's) will be recognized.

Irregularities on tests observed by faculty, staff, and/or students will be immediately brought to the attention of Dr. Eileen Moser, Interim Vice-Dean of Educational Affairs.

Students are on the honor system for examinations. Faculty will be present to address questions.

In the event a student becomes ill and cannot be present for an examination, a doctor's excuse and a completed Notification of Absence form must be presented to the Curriculum Coordinator (Ms. Tomi Kurzinger, C1704) **within 48 hours of the schedule exam** and arrangements can be made to reschedule the examination. The student is required to contact a course co-director **prior** to the scheduled examination if he/she is unable to attend the exam

Students having problems other than illness must speak with one of the Co-Directors of SBMP in order to be excused from an examination at an assigned time, and make arrangements to reschedule the examination.

All corrected tests will be returned to the student. Please retain all tests until the conclusion of the course.

Answers to examination questions will be posted.

Questions to faculty about answers and/or grading of tests are welcomed. However, these concerns must be brought to our attention within 2 weeks after the return of a particular examination.

Sign-up sheets for examinations will be posted at least 2 days prior to scheduled exams. Students will select a number when signing up for the examinations and this number will serve as the identification of that student.

Attendance Policy

Students are expected to attend all lectures and laboratories.

Statement on Remediation

All decisions regarding remediation are made by the Academic Progress Committee (APC) for Years I & II during its spring deliberations. Remediation may begin immediately upon the student's receipt of the Academic Progress Committee's decision following the Spring APC meeting. If offered the opportunity to remediate a course(s), it is the student's responsibility to contact the appropriate course co-directors to initiate remedial activities. Specific guidelines for the remediation process were included in the student packet that was distributed in the beginning of this academic year.

Disability Statement

Note to students with disabilities: It is Penn State's policy to not discriminate against qualified students with documented disabilities in its educational programs. If you have a disability-related need for modifications in this course, contact, Dr. George F. Blackall, Director of Student Development or x6148**.**

PENNSTATE HERSHEY
College of Medicine
1855

ACADEMIC INTEGRITY

Academic Year 2012-2013

Academic Integrity at Penn State is defined by Faculty Senate Policy 49-20 as "the pursuit of scholarly activity in an open, honest, and responsible manner."

The University Code of Conduct states, "all students should act with personal integrity; respect other students' dignity, rights, and property; and help create and maintain an environment in which all can succeed through the fruits of their efforts. Academic integrity includes a commitment not to engage in or tolerate acts of falsification, misrepresentation, or deception. Such acts of dishonesty violate the fundamental ethical principles of the University community and compromise the worth of work completed by others."

Academic dishonesty (including, but not limited to cheating, plagiarism, or falsification of information) will not be tolerated and can result in academic or disciplinary sanctions such as a failing grade (F) in the course.

CUMED Sub-Committee for Years I & II
Approved January 6, 2003

PENNSTATE HERSHEY
College of Medicine

The Educator's Code of Conduct

The Penn State Milton S. Hershey Medical Center and Penn State College of Medicine are dedicated to developing and maintaining a strong commitment to ethical teaching practices at all levels of the education process. The foundation for this Educator's Code of Conduct is provided by the Penn State University Graduate School Statement on Teaching Ethics (1). The development of this Graduate School statement was based on a special issue of the journal, *New Directions for Teaching and Learning*. In this special issue, entitled *Ethical Dimensions of College and University Teaching: Understanding and Honoring the Special Relationship between Teachers and Student*s (2*)*, several authors provided theoretical and practical guidelines for honing ethical college teaching skills. Some of the authors' recommendations have been used to formulate the Educator's Code of Conduct provided herein. Some of these recommendations were modified to specifically fit the needs of both educators and students at the Hershey Medical Center and the Penn State College of Medicine. Both the Unified Campus Commitment to Excellence of the Hershey Medical Center and Penn State College of Medicine (3) and the Code of Ethical Behavior of the Hershey Medical Center, Policy A-20 HAM (4) were also consulted in preparing this Educator's Code of Conduct.

Four Norms to Govern Teaching

Honesty

Honesty and integrity must be practiced during all aspects of the education process.

Promise-Keeping

Promise keeping requires the educator to fulfill the "promises" made at the beginning of the semester or any other learning activity. Syllabi, assignments, grading principles, and class and office hour schedules each involve promises that are made to students and that must be adhered to under normal circumstances.

Respect for Persons

The educator must approach the learner with personal respect. In addition, the educator ought to encourage mutual respect among students. In particular, respect for race, religion, sexual orientation, disability gender, age, marital status, cultural differences, and political conviction should be supported and encouraged in all aspects of the educational process. Additionally, educators ought to show respect and common courtesy for students both during interpersonal interactions and in responding promptly to students' need for guidance and feedback. An environment free from harassment and discrimination, verbal abuse, physical violence, and intimidation in any form must also be provided for all learning activities.

Fairness

Recognizing the inherent subjectivity involved in grading, an educator ought to ensure that their grading practices are as objective as possible by creating and adhering to unambiguous criteria.

PENNSTATE HERSHEY
College of Medicine

Principles of Ethical College and University Teaching

Content Competence

An educator maintains a high level of subject matter knowledge and ensures that the content of the educational experience is current, accurate, representative, and appropriate to the position of the learning experience within the students' program of study. The educator must be capable of approaching each learner with a commitment to meeting his or her educational needs.

Pedagogical Competence

A pedagogically competent educator communicates the objectives of the educational experience to students, is aware of alternative instructional methods or strategies, and selects methods of instruction that are effective in helping students to achieve the course objectives.

Dealing with Sensitive Topics

Topics that students are likely to find sensitive or discomforting are dealt with in an open, honest, and positive way.

Student Development

The overriding responsibility of the educator is to contribute to the intellectual development of the student, at least in the context of the educator's own area of expertise, and to avoid actions such as exploitation and discrimination that detract from student development.

Dual Relationship with Students

To avoid conflict of interest, an educator does not enter into dual-role relationships with students that are likely to detract from student development or lead to actual or perceived favoritism on the part of the educator. The establishment of a romantic/sexual relationship between an educator and a student should be reported to the immediate supervisor of the educator. Such relationships should be dealt with consistent with Penn State Administrative Policy AD41 — Sexual Harassment (5).

Student Confidentiality

Student grades, letters of evaluation, attendance records, and private communications are treated as confidential materials and are released only with student consent, for legitimate academic purposes, or if there are reasonable grounds for believing that releasing such information will be beneficial to the student or will prevent harm to the student or to others.

Patient Privacy and Confidentiality

Educators who utilize patient information as part of any educational experience must follow patient privacy and confidentiality guidelines as outlined by the Health Insurance Portability and Accountability Act of 1996 (HIPAA).

Respect for Colleagues

An educator respects the dignity of his or her colleagues and works cooperatively with colleagues in the interest of fostering student development.

Valid Assessment of Students

An educator is responsible for taking adequate steps to ensure that the assessment of a student's performance is valid, open, fair, and congruent with the course/educational experience objectives. An educator must be aware that such assessments are important in students' lives and in the development of their careers.

Respect for Institution and Profession

In the interest of student development, an educator is aware of and respects the educational goals, policies, and standards of the institution in which he or she teaches and the profession which he or she represents.

Citing Sources of Educational Material

An educator acknowledges and documents, as appropriate, the sources of information and other materials used for teaching.

Violations of the Educator's Code of Conduct

Should a learner experience conduct that is inconsistent with the Educator's Code of Conduct, he/she is encouraged to first address the issue with either the educator responsible for the inconsistency or the director of the course in which the educator teaches. Should this attempt to resolve the problem fail, or if the nature of the inconsistency is such that the learner does not feel comfortable addressing the issue with either the educator or the course director, the student may consult other individuals. These individuals may include but are not limited to: faculty advisor, student ombudsman, departmental chair, the Vice Dean for Educational Affairs, and the Vice Dean for Faculty and Administrative Affairs. The decision of who to contact may be dependent on the educational program of the learner and/or type of violation that was encountered.

References

(1) http://www.gradsch.psu.edu/research/ethics.html#teaching)
(2) http://cte.uncwil.edu/et/br030697.htm
(3) Unified Campus Commitment to Excellence of the Penn State Milton S. Hershey Medical Center and College of Medicine; 05/11/01
(4) Code of Ethical Behavior of the Hershey Medical Center, Policy A-20 HAM; Effective Date October, 2001
(5) http://guru.psu.edu/POLICIES/Ad41.html

Developed by the Unified Campus Academic Team
Endorsed by Teams Council — May 21, 2003

STRUCTURAL BASIS OF MEDICAL PRACTICE
2012-2013

Page numbers refer to Grant's Dissector, 15th edition, by P. W. Tank unless otherwise noted.
All lectures will be held in Lecture Room B unless otherwise noted.
All laboratories will be held in Room C3762 (MDL Labs) unless otherwise noted.
Bold print indicates exams or groups.
Group A refers to tables 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35
Group B refers to tables 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36

DATE		**TOPIC**	**LECTURER**	**PAGES/CHAPTERS**
6-Aug	Lec:	Introduction (8AM-9AM)	Dr. Evey	Gray's, 1-191
	Lab:	Intro to Lab/**Group A** (9AM-12PM)		1-4, 165-169
	Lec:	Subinguinal Region (1PM-2PM)	Dr. Evey	
	Lab:	Intro Lab/**Group B** (2PM-5PM)		1-4, 165-169
7-Aug	Lec:	The Cadaver Experience/**Group B** (9AM-10AM)	Dr. Myers	
	Lec:	Clinical Correlate: Your Patients Before They Were Yours/ **Group B** (10AM-11AM)	Dr. Shapiro	
	Lab:	Anterior and Medial Thigh/**Group A** (9AM-12PM)		169-176
	Lec:	Gluteal Region and Ischiorectal Fossa (1PM-2PM)	Dr. Evey	
	Lab:	Anterior and Medial Thigh/**Group B** (2PM-5PM)		169-176
	Lec:	The Cadaver Experience/**Group A** (3-4PM)	Dr. Myers	
	Lec:	Clinical Correlate: Your Patients Before They Were Yours/ **Group A** (4PM-5PM)	Dr. Shapiro	
8-Aug	Lec:	Anatomy in History/**Group B** (9AM-10AM)	Dr. Wilson	
	Lec:	Ethics in Anatomy/**Group B** (10AM-11AM)	Dr. Neely	
	Lab:	Gluteal Region/**Group A** (9AM-12PM)		176-181
	Lec:	Thigh and Popliteal Fossa (1PM-2PM)	Dr. Evey	
	Lab:	Gluteal Region/**Group B** (2PM-5PM)		176-181
	Lec:	Anatomy in History/**Group A** (3PM-4PM)	Dr. Wilson	
	Lec:	Ethics in Anatomy/**Group A** (4PM-5PM)	Dr. Neely	
9-Aug	Lec:	Gametogenesis & Fertilization (8AM-9AM)	Dr. Lazarus	
	Lab:	Thigh and Popliteal Fossa/**Group A** (9AM-12PM)		181-184
	Lec:	Ethics in a Short White Coat/**Group B** (9AM-10AM)	Dr. Volpe	
	Lec:	Leg (1PM-2PM)	Dr. Evey	
	Lab:	Thigh and Popliteal Fossa/**Group B** (2PM-5PM)		181-184
	Lec:	Ethics in a Short White Coat/**Group A** (3PM-4PM)	Dr. Volpe	
10-Aug	Lec:	Clinical Correlate: Lower Extremity I (8AM-9AM)	Dr. Bollard	
	Lec.	Bilaminar & Trilaminar Embryo/**Group B** (9AM-10:30AM)	Dr. Lazarus	

DATE		TOPIC	LECTURER	PAGES/CHAPTERS
	Lab:	Leg/**Group A** (9AM-12PM)		184-193
	Lec:	Foot, Arches, Gait (1PM-2PM)	Dr. Evey	
	Lab:	Leg/**Group B** (2PM-5PM)		184-193
	Lec.	Bilaminar & Trilaminar Embryo/**Group A** (3PM-4:30PM)	Dr. Lazarus	
13-Aug	Lec:	Clinical Correlate: Lower Extremity Circulation (8AM-9AM)	Dr. Han	
	Lab:	Foot and Ankle/**Group A** (9AM-12PM)		193-198
	Lec:	Joints of Lower Extremity (1PM-2PM)	Dr. Evey	
	Lab:	Foot and Ankle/**Group B** (2PM-5PM)		193-198
14-Aug	Lec:	Embryonic Period (8AM-9AM)	Dr. Lazarus	
	Lec.	Lower Limb Development/**Group B** (9AM-10AM)	Dr. Lazarus/ Nasralah	
	Lab:	Joints of Lower Extremity/**Group A** (9AM-12PM)		198-203
	Lec:	General Organization of the Thorax (1PM-2PM)	Dr. Evey	
	Lab:	Joints of Lower Extremity/**Group B** (2PM-5PM)		198-203
	Lec.	Lower Limb Development/**Group A** (3PM-4PM)	Dr. Lazarus/ Nasralah	
15-Aug	Lec:	Clinical Correlate: Critical Periods of Development (8AM-9AM)	Dr. Berlin	
	Lab:	Thoracic and Pleural Cavities/**Group A** (9AM-12PM)		26-27, 63-69
	Lec:	Anatomy of Ventilation (1PM-2PM)	Dr. Evey	
	Lab:	Thoracic and Pleural Cavities/**Group B** (2PM-5PM)		26-27, 63-69
16-Aug	Lec:	Clinical Correlate: Nerves of Lower Extremity (11AM-12PM)	Dr. Greensmith	
	Lec:	Principles of Radiology (1PM-2PM)	Dr. Scorza	
	Lec:	Radiology of Lower Extremity (2PM-3PM)	Dr. Bernard	
	Lec:	Clinical Correlate: Lower Extremity II (3PM-4PM)	Dr. Bollard	
17-Aug	Lec:	Respiratory System Development (8AM-9AM)	Dr. Lazarus/ Hammer	
	Lab:	Lungs, Anterior & Middle Mediastinum/**Group A** (9AM-12PM)		69-73
	Lec:	Anatomy of Heart, Great Vessel (1PM-2PM)	Dr. Evey	
	Lab:	Lungs, Anterior & Middle Mediastinum/**Group B** (2PM-5PM)		69-73
20-Aug	Lec:	Radiology of the Thorax (8AM-9AM)	Dr. Bernard	
	Lab:	Anatomy of Heart, Great Vessel/**Group A** (9AM-12PM)		73-82
	Lec:	Heart Development/**Group B** (9AM-10AM)	Dr. Lazarus/ Immonen	
	Lec:	Dorsal Mediastinum/Thoracic Autonomics (1PM-2PM)	Dr. Evey	
	Lab:	Anatomy of Heart, Great Vessel/**Group B** (2PM-5PM)		73-82

DATE		TOPIC	LECTURER	PAGES/CHAPTERS
	Lec:	Heart Development/**Group A** (3PM-4PM)	Dr. Lazarus/ Immonen	
21-Aug	Lec:	Clinical Correlate: Nerve/Muscle Disorders of Lower Extremity (8AM-9AM))	Dr. Conforti	
	Lec:	Clinical Correlate: Heart & Lung Development /**Group B** (9AM-10AM)	Dr. Berlin	
	Lab:	Superior Mediastinum/**Group A** (9AM-12PM)		82-87
	Lec:	Abdominal Wall (1PM-2PM)	Dr. Evey	
	Lab:	Superior Mediastinum/**Group B** (2PM-5PM)		82-87
	Lec:	Clinical Correlate: Heart & Lung Development /**Group A** (3PM-4PM)	Dr. Berlin	
22-Aug	Rev:	Radiology Review (9AM-10AM)	Dr. Bernard	
	Lec:	Clinical Correlate: Lower Extremity (2PM-3PM)	Dr. Reid	
	Lec:	Clinical Correlate: Thorax (3PM-4PM)	Dr. Bollard	
	Lec:	Clinical Correlate: Cardiothoracic (4PM-5PM)	Dr. Mehta	
23-Aug		**SBMP EXAMS #1 and #2 (LR-A, LR-B, MDL) (1-7 PM)**		
24-Aug	Lec:	Descent of Testes (8AM-9AM)	Dr. Lazarus	
	Lab:	Abdominal Wall/**Group B** (9AM-12PM)		89-91, 95-98 (omit inguinal region)
	Lec:	Inguinal Canal (1PM-2PM)	Dr. Evey	
	Lab:	Abdominal Wall/**Group A** (2PM-5PM)		89-91, 95-98 (omit inguinal region)
27-Aug	Lec:	Development of GI Tract (8AM-9AM)	Dr. Lazarus	
	Lab:	Inguinal Canal, Scrotum, Spermatic Cord/**Group B** (9AM-12PM)		91-95, 129-131, 147
	Lec:	Abdominal Cavity (1PM-2PM)	Dr. Evey	
	Lab:	Inguinal Canal, Scrotum, Spermatic Cord/**Group A** (2PM-5PM)		91-95, 129-131, 147
28-Aug	Lab:	Laparotomy/**Group B** (10AM-12PM)		98-102
	Lec:	Abdominal Vasculature (1PM-3PM)	Dr. Evey	
	Lab:	Laparotomy/**Group A** (3PM-5PM)		98-102
29-Aug	Lec:	Development of Arteries & Veins (8AM-9AM)	Dr. Lazarus/ Immonen	
	Lab:	Bile Passages, Celiac Trunk, Portal Vein, Superior & Inferior Mesenteric Vessels/**Group B** (9AM-12PM)		102-112
	Lec:	Liver, Duodenum and Pancreas (1PM-2PM)	Dr. Evey	
	Lab:	Bile Passages, Celiac Trunk, Portal Vein, Superior & Inferior Mesenteric Vessels/**Group A** (2PM-5PM)		102-112

DATE		TOPIC	LECTURER	PAGES/CHAPTERS
30-Aug	Lab:	Removal and Examination of G.I. Tract/**Group B** (9AM-12PM)		112-116
	Lec:	Kidneys, Suprarenals & Abdominal Autonomics (1PM-2PM)	Dr. Evey	
	Lab:	Removal and Examination of G.I. Tract/**Group A** (2PM-5PM)		112-116
31-Aug	Lec:	Clinical Correlate: GI System (8AM-9AM)	Dr. Moyer	
	Lec:	Clinical Correlate: Abdominal Vessels (9AM-10AM)	Dr. Han	
	Lec:	Clinical Correlate: Abdomen (11AM-12PM)	Dr. Bollard	
	Lec:	Development of Urinary System (1PM-2PM)	Dr. Lazarus/ Swartz	

	Lec:	Clinical Correlate: GI Tract (2PM-3PM)	Dr. Gusani	
3-Sep		**LABOR DAY**		
4-Sep	Lab:	Post Abdominal Structures/**Group B** (10AM-12PM)		116-124
	Lec:	Topography of Pelvic Viscera (1PM-3PM)	Dr. Evey	
	Lab:	Posterior Abdominal Structures/**Group A** (3PM-5PM)		116-124
5-Sep	Lec:	Reproductive System Development (8AM-9AM)	Dr. Lazarus/ Immonen	
	Lab:	Pelvic Viscera of Female and Male/**Group B** (9AM-12PM)		125-129, 137-138, 152-156
	Lec:	Perineum (1PM-2PM)	Dr. Evey	
	Lab:	Pelvic Viscera of Female and Male/**Group A** (2PM-5PM)		125-129, 137-138, 152-156
		Dean's Welcome Picnic- UCC, Event Tent (5:30PM)		
6-Sep	Lec:	Radiology of Abdomen (1PM-2PM)	Dr. Peterson	
	Lec:	Radiology of Pelvis & Perineum (2PM-3PM)	Dr. Peterson	
	Lec:	Clinical Correlate: Pelvis & Kidney (3PM-4PM)	Dr. Bollard	
	Lec:	Clinical Correlate: UG/GI Development (4PM-5PM)	Dr. Berlin	
7-Sep	Lab:	Perineum of Female & Male/**Group B** (9AM-12PM)		132-137, 148-152
	Lec:	Pelvic Musculature & Fascia (1PM-2PM)	Dr. Evey	
	Lab:	Perineum of Female & Male/**Group A** (2PM-5PM)		132-137, 148-152
10-Sep	Lab:	Pelvic Diaphragm, Anal Region/**Group B** (9AM-12PM)		138-143-, 156-159 145-147, 161-163
	Lec:	Pelvic Nerves & Vessels (1PM-2PM)	Dr. Evey	
	Lab:	Pelvic Diaphragm, Anal Region/**Group A** (2PM-5PM)		138-143-, 156-159 145-147, 161-163
11-Sep	Lec:	Clinical Correlate: Pelvis & Perineum (8AM-9AM)	Dr. Repke	

DATE		TOPIC	LECTURER	PAGES/CHAPTERS
	Lab:	Pelvic Nerves & Vessels/**Group B** (9AM-12PM)		129-131, 143-145
	Lec:	Clinical Correlate: Laparascopic Surgery (1PM-2PM)	Dr. Haluck	
	Lab:	Pelvic Nerves & Vessels/**Group A** (2PM-5PM)		129-131, 143-145
12-Sep	Lec:	Back (10AM-12PM)	Dr. Evey	
	Rev:	Radiology Review (1PM-2PM)	Dr. Peterson	
	Lec:	Clinical Correlate: Ano-Rectal/Perineum (2PM-3PM)	Dr. Bollard	
13-Sep		**SBMP EXAMS #3 and #4 (LR-A, LR-B, MDL) (1-7 PM)**		
14-Sep	Lab:	Back/**Group A** (9AM-12PM)		5-14
	Lec:	Suboccipital Region/Vertebral Canal/Spinal Cord (1-2PM)	Dr. Evey	
	Lab:	Back/**Group B** (2PM-5PM)		5-14
17-Sep	Lec:	Upper Limb Development (8AM-9AM)	Dr. Lazarus/ Swartz	
	Lab:	Suboccipital Region /**Group A** (9AM-12PM)		14-19
	Lec:	Scapular Region (1PM-2PM)	Dr. Evey	
	Lab:	Suboccipital Region/**Group B** (2PM-5PM)		14-19
18-Sep	Lec:	Clinical Correlate: Limbs & Muscle Development (8AM-9AM))	Dr. Berlin	
	Lab:	Scapular Region/**Tables 1-18** (9AM-12PM) *split lab/Yr II*		21-30
	Lec:	Axilla & Brachial Plexus (1PM-2PM)	Dr. Evey	
	Lab:	Scapular Region/**Tables 19-36** (2PM-5PM) *split lab/Yr II*		21-30
19-Sep	Lec:	Radiology of Upper Extremity (8AM-9AM)	Dr. Brian	
	Lec:	Radiology of the Back (9AM-10AM)	Dr. Brian	
	Lab:	Axilla & Brachial Plexus/**Group A** (10AM-12PM)		30-34
	Lec:	Arm & Cubital Fossa (1PM-2PM)	Dr. Evey/ Troy	
	Lab:	Axilla & Brachial Plexus/**Group B** (3PM-5PM)		30-34
20-Sep	Lec:	Clinical Correlate: Nerve/Muscle Disorders of Back/Spine/Brachial Plexus (8AM-9AM)	Dr. Conforti	
	Lab:	Arm & Cubital Fossa/**Group A** (9AM-12PM)		34-40
	Lec:	Flexor Region of Forearm (1PM-2PM)	Dr. Evey/ Troy	
	Lab:	Arm & Cubital Fossa/**Group B** (2PM-5PM)		34-40
21-Sep	Lab:	Flexor Region of Forearm/**Group A** (9AM-12PM)		40-46
	Lec:	Hand (1PM-2PM)	Dr. Evey/ Swartz	
	Lab:	Flexor Region of Forearm/**Group B** (2PM-5PM)		40-46
		Fall Convocation Hospital Auditorium, (4-6PM)		

DATE		TOPIC	LECTURER	PAGES/CHAPTERS
24-Sep	Lec:	Clinical Correlate: Hand (8AM-9AM)	Dr. Hauck	
	Lab:	Hand/Palm/**Group A** (9AM-12PM)		46-53
	Lec:	Extensor Region of Forearm/Dorsum Hand (1PM-2PM)	Dr. Evey/ Troy	
	Lab:	Hand/Palm/**Group B** (2PM-5PM)		46-53
25-Sep	Lab:	Extensor Region of Forearm/Dorsum Hand/**Group A** (9AM-12PM)		53-57
	Lec:	Joints of Upper Limbs (1PM-2PM)	Dr. Evey/ Immonen	

	Lab:	Extensor Region of Forearm/Dorsum Hand/**Group B** (2PM-5PM)		53-57
26-Sep	Lec:	Clinical Correlate: Nerves of Upper Extremity I (8AM-9AM)	Dr. Greensmith	
	Lab:	Joints of Upper Limb/**Group A** (9AM-12PM)		57-62
	Lec:	Cervical Fascia & Posterior Triangle (1PM-2PM)	Dr. Evey	
	Lab:	Joints of Upper Limb/**Group B** (2PM-5PM)		57-62
27-Sep	Lec:	Anterior Triangle/Thyroid/Root of Neck (1PM-2PM)	Dr. Evey	
	Rev:	Radiology Review (2PM-3PM)	Dr. Brian	
	Lec:	Clinical Correlate: Upper Extremity (3PM-4PM)	Dr. Bollard	
28-Sep		**SBMP EXAMS #5 and #6 (LR-B, LR-C, MDL) (1-7 PM)**		
1-Oct	Lab:	Cervical Fascia, Anterior & Posterior Triangle/**Group B** (9AM-12PM)		205-215
	Lec:	Introduction to Cranial Nerves (1PM-2PM)	Dr. Evey	
	Lab:	Cervical Fascia, Anterior & Posterior Triangle/**Group A** (2PM-5PM)		205-215
2-Oct	Lec:	Clinical Correlate:Head and Neck I (8AM-9AM)	Dr. Bollard	
	Lab:	Thyroid/Root of Neck/**Group B** (9AM-12PM)		215-218
	Lec:	Exterior of Skull, Face, Parotid Region & Scalp (1PM-2PM)	Dr. Evey/ Immonen	
	Lab:	Thyroid/Root of Neck/**Group A** (2PM-5PM)		215-218
3-Oct	Lab:	Exterior of Skull, Face, & Scalp/**Group B** (9AM-12PM)		218-229
	Lec:	Temporal Fossa, Infratemporal Fossa, TMJ (1PM-2PM)	Dr. Evey	
	Lab:	Exterior of Skull, Face, & Scalp /**Group A** (2PM-5PM)		218-229
4-Oct	Lec:	Pharyngeal Arches Development (11AM-12PM)	Dr. Lazarus	
	Lec:	Craniofacial Bone Development (1PM-2PM)	Dr. Lazarus	
	Lec:	Interior of Skull, Meninges, Dural Infoldings, Dural Venous Sinuses, Cranial Fossae (2PM-3PM)	Dr. Evey/ Immonen	

DATE		TOPIC	LECTURER	PAGES/CHAPTERS
	Lec:	Cavernous Sinus (3PM-4PM)	Dr. Evey	
	Lec:	Cranial Nerves & the Neck (4PM-5PM)	Dr. Evey	
5-Oct	Lab:	Temporal Fossa, Infratemporal Fossa, TMJ/**Group B** (9AM-12PM)		230-235
	Lec:	Clinical Correlate: Head & Neck Development /**Group A** (10AM-11AM)	Dr. Berlin	
	Lec:	Orbit (1PM-2PM)	Dr. Evey/ Swartz	
	Lab:	Temporal Fossa, Infratemporal Fossa, TMJ/**Group A** (2PM-5PM)		230-235

	Lec:	Clinical Correlate: Head & Neck Development /**Group B** (3PM-4PM)	Dr. Berlin	
8-Oct	Lab:	Interior of Skull, Meninges, Dural Sinuses/**Group B** (9AM-12PM)		235-245 (omit removal of brain)
	Lec:	Nervous System Development/**Group A**(10AM-11AM)	Dr. Lazarus/ Troy	
	Lec:	Globe (1PM-2PM)	Dr. Quillen	
	Lec:	Nervous System Development/**Group B** (2PM-3PM)	Dr. Lazarus/ Troy	
	Lab:	Interior of Skull, Meninges, Dural Sinuses//**Group A** (2PM-5PM)		235-245 (omit removal of brain)
9-Oct	Lec:	Clinical Correlate: Orbit (8AM-9AM)	Dr. Wilkinson	
	Lec:	Clinical Correlate: CNS Develpoment (9AM-10AM)	Dr. Berlin	
	Lab:	Orbit/Globe/**Group B (**10AM-12PM)		245-252
	Lec:	Craniovertebral Joints, Prevertebral Region (1PM-2PM)	Dr. Evey	
	Lec:	Autonomic Innervation of the Ciliary Ganglion (2PM-3PM)	Dr. Evey	
	Lab:	Orbit/Globe/**Group A** (3PM-5PM)		245-252
10-Oct	Lec:	Clinical Correlate: Head & Neck II (8AM-9AM))	Dr. Bollard	
	Lab:	Craniovertebral Joints/**Group B** (9AM-12PM)		252-255
	Lec:	Sympathetic Nervous System (1PM-2PM)	Dr. Evey	
	Lab:	Craniovertebral Joints/**Group A** (2PM-5PM)		252-255
11-Oct	Lec:	Palate, Oral Region (11AM-12PM)	Dr. Fornadley	
	Lec:	Pharynx, Nose, Nasal Cavity (1PM-2PM)	Dr. Fornadley	
	Lec:	Radiology of Head (2PM-3PM)	Dr. Kanekar	
	Lec:	Radiology of Neck (3PM-4PM)	Dr. Kanekar	
12-Oct	Lab:	Pharynx, Nose, Nasal Cavity, Hard/Soft Palate/**Group B** (9 AM-12 PM)		255-263
	Lec:	Autonomic Innervation of the Submandibular & Otic Ganglia (1PM-2PM)	Dr. Evey	
	Lab:	Pharynx, Nose, Nasal Cavity, Hard/Soft Palate/**Group A** (2PM-5 PM)		255-263

DATE		TOPIC	LECTURER	PAGES/CHAPTERS
15-Oct	Lab:	Palate, Oral Region/**Group B** (9AM-12PM)		263-271
	Lec:	Clinical Correlate: Anterior Neck/**Group A** (9AM-10AM)	Dr. Goldenberg	
	Lec:	Larynx (1PM-2PM)	Dr. McGinn	
	Lec:	Clinical Correlate: Anterior Neck/**Group B** (3PM-4PM)	Dr. Goldenberg	
	Lab:	Palate, Oral Region/**Group A** (2PM-5PM)		263-271
16-Oct	Lab:	Larynx/Group B (10AM-12PM)		271-274
	Lec:	Temporal Bone & Ear (1PM-2PM)	Dr. Ghossaini	
	Lec:	Autonomic Innervation of the Pterygopalatine Ganglion/Fossa (2PM-3PM)	Dr. Evey	
	Lab:	Larynx/Group A (3PM-5PM)		271-274
17-Oct	Lec:	Clinical Correlate: Board Review (8AM-9AM)	Dr. Bollard	
	Lab:	Temporal Bone Demo Review/**Group B** (9AM-12PM)		274-278
	Lec:	Clinical Correlate: Lateral Neck (1PM-2PM)	Dr. Goldenberg	
	Lab:	Temporal Bone Demo Review/**Group A** (1PM-4PM)		274-278
18-Oct	Lec:	Clinical Correlate: Pharynx (11AM-12PM)	Dr. Fedok	
	Rev:	Radiology Review (1-2PM)	Dr. Kanekar	
	Rev:	Review (2PM-3PM)	Dr. Evey/ Dr. Phelps	
19-Oct		**SBMP EXAMS #7 and #8 (LR-B, LR-C, MDL) (1PM-7PM)**		

Injuries in Anatomy Lab

Prevention

Wear all required protective gear for every session, during class hours or after hours.

Small Lacerations

Wash the wound with soap and copious amounts of water. Place a dry sterile dressing over the area. A band-aid is appropriate and antibiotic ointment may be used. Medical student's tetanus immunization should be within five years, if you are unsure call Student Health at 717 531-5998 to verify the date. If it is after hours, call the next day.

Watch the area for signs of infection such as worsening redness, pus, soreness and red streaks on skin as the area heals.

Larger Lacerations

Larger lacerations are those roughly approaching 1 centimeter or above. The wound should be washed with soap and copious amounts of water. If bleeding can be controlled use a bandage and watch for signs of infection as listed above. If bleeding cannot be stopped in 5 – 10 minutes, cover the area with a clean and absorbent towel and keep the area elevated.

Student Health should be called at 717 531-5998 for an appointment for suturing of the wound. After hours call nurse triage or the family medicine physician on call for triage advice. Call Student Health if you are unsure of your tetanus immunization status.

Serious Injuries and Wounds

Loss of consciousness with trauma to the head should go directly to the Emergency Department. If students are unable to walk 911 should be called for assistance.

Large wounds with rapid blood loss or involving nerves, tendon or bone should go to the Emergency Department for treatment.

Student Health 531-5998 can be called first to triage a student to the appropriate place unless a wound is life, limb or sight threatening. These injuries should go to the Emergency Department, calling 911 for transport when appropriate.

Injuries requiring Emergency Room treatment will be the financial responsibility of The College of Medicine if the student has been directed to Emergency Department by Student health or Family Medicine. They will also be covered in cases where 911 were called to respond to the emergency before Student Health was notified. Otherwise they are the financial responsibility of the student and their insurance.

Course Objectives: By Lecture

Course Introduction: Upon Completion of this lecture an MS1 student should be able to:

1. List the study techniques useful in SBMP
2. Define the Philosophy of SBMP course education
3. Define the role the course faculty play in SBMP
4. List and describe the Levels of anatomical education
5. Describe the grading policy of SBMP
6. Describe the overall structure of the course

Introduction to the lab: Upon participation in dissection an MS1 student should be able to:

1. Demonstrate knowledge and ability in skinning techniques
2. Describe anatomical locations through the use of anatomical terms
3. Identify the Great Saphenous Vein, Superficial epigastric Vein, Superficial circumflex iliac vein, Superficial External Pudendal Vein
4. Explain the relationship of the Great saphanous vein to fascial layers within the thigh
5. Describe the drainage pattern of the Great Saphenous Vein

Subinguinal Region Lecture: Upon completion of this lecture, an MS1 student should be able to:

1. Define anatomical terms that describe locations and planes
2. List the layers of the thigh from skin to muscle
3. Identify key thigh muscle origin and/or insertion bony landmarks on the pelvis and femur
4. Describe the relevance of the saphenous opening and recall its borders
5. Explain the difference between the muscular and vascular lacunae and their contents
6. Describe the borders of the femoral triangle and discuss its significance
7. Identify the muscles of the anterior and medial compartment of the thigh and describe their functions and innervations
8. Describe the pathway and relevant tributaries that make up the cruciate anastomosis around the hip joint
9. Explain the anatomical relationships that are illustrated in a patient with a femoral hernia

Anterior & Medial Thigh lab. Upon participation in dissection an MS1 student should be able to:

1. Identify the muscles of the medial and lateral compartment of the thigh
2. Describe the anatomical relationships of the femoral vessels to nearby structures
3. Identify the medial and lateral circumflex femoral artery
4. Identify the deep artery of the thigh
5. Define the borders and contents of the femoral triangle and femoral canal

Gluteal Region and Ischiorectal Fossa: Upon completion of this lecture and Lab an MS1 student should be able to:

1. Identify bony landmarks of bones contributing to the hip
2. Identify the ligaments associated with the greater and lesser sciatic notches

3. Explain the relationship of vessels and nerves to the Piriformis muscle and the greater and lesser sciatic foramen
4. Identify the muscles of the gluteal region and describe their origins, insertions, innervations and actions
5. Explain the relationship of the Spinal nerves to the peripheral nerves within the lumbar and sacral plexi
6. Identify cutaneous nerve distributions of the lower limb
7. Explain anatomical relationships that are illustrated through proper (and improper) administration of gluteal injections

Thigh & Popliteal Fossa: Upon completion of this lecture an MS1 student should be able to:

1. Identify the posterior muscles of the thigh and their innervation and vascular supply and their functions
2. Define the term “hamstring” and identify the muscles that fit into this category and their functions
3. Define the Hybrid muscles of the thigh
4. Define and identify the contents and boundaries of the popliteal fossa
5. Explain the purpose of the genicular anastomosis and explain the vessels that contribute to it
6. Explain the origins and pathway of the sural nerve
7. Explain the relevant the anatomy that results in a “trendelenburg gait”

Gametogenesis & Fertilization: Upon completion of this lecture MS1 students should be able to:

1. Explain the timing and signals that are involved with maturation of gametes
2. Explain the differences between male and female gamete maturation
3. Explain the steps involved with fertilization
4. Identify the locations necessary for gamete development and fertilization
5. Explain the role of Mitosis and Meiosis in gamete development
6. Identify the critical “pause” periods during gamete development

Leg: Upon completion of this lecture and lab MS1 students should be able to:

1. Identify the bones and joints of the leg and foot
2. Explain the joints involved with: inversion/eversion and flexion/extension of the foot
3. Identify the muscles of the leg and their innervation, action/function and origin and insertion
4. Explain the blood supply of the leg and the pathway that these vessels take to get to the leg
5. Explain the compartments of the leg and the relationships of structures within these compartments using cross-sectional anatomy
6. Explain how phalanges move
7. Explain the role that retinaculum play in the leg and foot
8. Identify the relationships of the following structures: Tibialis posterior, posterior tibial A, V and N and the Flexor Halliscus Longus
9. Explain the contributing arteries of the malleolar anastomosis

10. Explain the relevant anatomy that leads to compartment syndrome, why the anterior compartment of the leg is more prone to this syndrome and what anatomy would help you diagnose this problem.

Bilaminar & Trilaminar Embryo: Upon completion of this lecture MS1 students should be able to:

1. Identify the cell lineages from fertilization through trilaminar disk formation
2. Discuss the importance of space in the embryo
3. Predict the outcome(s)/impacts of failing to properly form a bilaminar disk and/or trilaminar disk (and the processes contained within)
4. Explain the events that lead to body plan/orientation
5. Discuss the key events that occur in both bilaminar and trilaminar disk formation

Foot, Arches & Gaits: Upon completion of this lecture and lab MS1 students should be able to:

1. Identify the muscles and their innervation within the foot
2. Discuss the layers and cross-sectional anatomy of the foot
3. Discuss the function, muscular compoenents and innervation of the compartments of the foot
4. Discuss the movements of the digits of the lower limb
5. Explain the types of arches of the foot and describe the active and passive support structures of these arches
6. Explain the role the lower limb musculature plays in gait
7. Discuss the entire lower limbs vasculature, musculature, and innervation
8. Explain the relevant anatomy that is illustrated in a patient with pes planus.

Lower Limb Development: Upon completion of this lecture MS1 students should be able to:

1. Identify factors that influence proper development of the lower limb.
2. Explain the embryonic timeline and origins of lower limb development.
3. Identify the stages of bone development.
4. Discuss the steps involved with rotation of the lower limb.
5. Explain some anomalies common to improper development of the lower limb.

Joints of the Lower Extremity: Upon completion of this lecture and lab MS1 students should be able to:

1. Identify the different classification of joints throughout the body and discuss one example of each type of joint
2. Explain the general anatomical components that constitute a synovial joint
3. Discuss the specific anatomical components of the hip, knee and ankle joints
4. Explain the action that is possible at each of the three synovial joints of the lower limb
5. Discuss the anatomy that limits movement of the hip joint
6. Explain the important structures that comprise the “unhappy triad” and what anatomy leads to their injury

Embryonic Period: Upon completion of this lecture and lab MS1 students should be able to:

1. Define Carnegie stages
2. Discuss the differences between the embryonic period, the fetal period, and the post-natal period
3. Identify the major events that take place during the embryonic period
4. Explain the key causes and outcomes of folding (cephalo-caudal and lateral)

General Organization of the Thorax: Upon completion of this lecture and lab MS1 students should be able to:

1. Identify the structures of the superficial pectoral region
2. Discuss the relationship of the axilla (and its contents) with the pectoral region
3. Explain the orientation, extent and location of the intercostals muscles
4. Identify the parts of the sternum
5. Define the terms: true ribs, false ribs and floating ribs
6. Explain the collateral circulation of the thorax and the relationship of the intercostals arteries to the aorta and internal thoracic artery
7. Identify the vertebral locations of the: sternal angle, the xiphisternal joint, and the costal margin
8. Discuss the relationship of the visceral and parietal pleura and endothoracic fascia and the composition
9. Identify the regions of the parietal pleura
10. Define the costomediastinal and costodiaphragmatic recesses
11. Discuss the ideal location for fluid removal in the costodiaphragmatic recess
12. Discuss the relationship of the intercostals vein, artery and nerve to the intercostals muscles and the ribs
13. Define the region known as the mediastinum and identify the contents of this region

Clinical Correlate Critical Periods of Development: Upon completion of this lecture, MS1 students should be able to:

1. Define the term teratogen
2. Discuss the different types of non-genetic influences on birth defects
3. Discuss the relationship of birth defect type to timing of teratogen during gestation
4. Discuss the influences of maternal health, environmental impact, and medicines on fetal development

Anatomy of Ventilation: Upon completion of this lecture and lab, MS1 students should be able to:

1. Discuss the anatomy of the lung
2. Discuss the relationship of the lungs to nearby structures
3. Identify the layers traversed during a thoracentesis
4. Discuss the anatomy and divisions of the bronchi
5. Identify structural imprints on the lungs (due to fixation)
6. Discuss the surface projections of the lungs and associated pleura
7. Discuss the muscles and anatomical structures involved with breathing

Respiratory System Development: Upon completion of this lecture, MS1 students should be able to:

1. Identify the origin of tissues that comprise the lung

2. Discuss the similarities and differences of the upper and lower respiratory system as it applies to development
3. Discuss the key events and stages of lung development
4. Identify the embryological origins of the pleura and their relationship to lung development
5. Discuss the relationship of the gut tube to the developing lung bud
6. Discuss the importance of space and amniotic fluid in lung development

Anatomy of heart and great vessel: Upon completion of this lecture and lab, MS1 students should be able to:

1. Discuss the location of the heart within the thoracic cavity.
2. Identify the layers of the pericardium and what structures anchor the heart to the body wall
3. Discuss the major structures and blood supply of the pericardium
4. Discuss the circulation pattern of blood within the heart
5. Identify major structures in all of the chambers of the heart
6. Compare and contrast key features and functions of atrioventricular and semilunar valves
7. Describe the major arteries and veins supplying the myocardium

Dorsal Mediastinum/ Thoracic Autonomics: Upon completion of this lecture and lab, MS1 students should be able to:

1. Discuss major divisions of the nervous system
2. Explain, in detail, the sympathetic nervous system and its divisions (including splanchnic nn)
3. Discuss major components of the parasympathetic nervous system
4. Describe the neural elements of a reflex arc
5. Compare and contrast collateral, intrinsic and sympathetic nerves (including location of ganglia)
6. Discuss the collateral circulation of the thorax (including azygous venous drainage)
7. Describe lymphatic drainage of the thorax
8. Discuss the definition of referred pain and provide an example

Abdominal Wall: Upon completion of this lecture and lab, MS1 students should be able to:

1. Identify and define the different quadrants of the abdomen and their contents
2. Describe the superficial collateral venous circulation (including the thorocoepigastric vein, paraumbillical vein and umbilical veins) and its relationship with the superficial epigastric vein and the deep venous drainage
3. Discuss the facial planes of the abdomen
4. Compare and contrast abdominal fascial planes from those located in the thorax and the perineum
5. Compare and contrast dermatome patterning with cutaneous nerve innervation
6. Identify the location and layers of abdominal nerves
7. Discuss the relationship of the abdominal muscles to the arctic sheath
8. Discuss the relationship of the arctic sheath to the peritoneum and to the peritoneal cavity
9. Compare and contrast retroperitoneal and intraperitoneal structures
10. Identify the relationship of vertebral levels to landmarks on the anterior thoracic and abdominal wall (such as suprasternal notch, sterna angle, xiphisternal joint, subcostal line, umbilicus
11. Discuss the importance of the abdominal wall to herniation

Inguinal Canal: Upon completion of this lecture and lab, MS1 students should be able to:

1. Discuss the relationship of the abdominal musculature to the borders of the inguinal canal
2. Identify the contents of the inguinal canal
3. Discuss the relationship of the anterior abdominal wall and the inguinal canal to the coverings of the spermatic cord
4. Identify which of the anterior abdominal wall muscles does not contribute to the spermatic cord but is a component of the inguinal canal
5. Identify and discuss the vascular supply and the definition of the spermatic cord
6. Discuss the steps involved with descent of the testes
7. Identify the peritoneal folds around the arcuate line
8. Compare and contrast the gubernaculum in male versus female
9. Compare and contrast direct and indirect inguinal hernia

Abdominal Cavity/Development of GI: Upon completion of this lecture and lab, MS1 students should be able to:

1. Discuss the embryonic origins of tissues in the gut and the location of these structures in the adult
2. Discuss the embryological origin and purpose of the greater omentum and identify the greater omentum in the adult
3. Discuss the components of the small intestine
4. Compare and contrast the foregut, midgut and hindgut
5. Discuss the origins of the dorsal and ventral mesentery and their adult derivatives
6. Discuss the location of the celiac, SMA and IMA arteries and their derivatives
7. Discuss the development of the stomach
8. Discuss rotation of the midgut (include axis of rotation and degree and direction of rotation)
9. Identify the layers the contribute to the transverse mesocolon
10. Discuss the development of the pancreas

Abdominal Vasculature: Upon completion of this lecture and lab, MS1 students should be able to:

1. Identify the major arteries off of the abdominal aorta that supply the gut and the vertebral levels they are located with
2. Identify the branches of the celiac, SMA and IMA
3. Discuss the difference in vasculature between the jejunum and the ileum
4. Define the “nutcracker”
5. Discuss the contributions of the SMA and IMA to the small and large intestines
6. Identify the pathways of the portal/caval venous system and describe the direction (and pathway) blood would flow in if a patient presents with portal hypertension.

Liver, Duodenum, & Pancreas: Upon completion of this lecture and lab, MS1 students should be able to:

1. Identify the anatomical relationships of the duodenum
2. Identify the anatomical relationships of the liver and describe the anatomy, drainage and supply of the liver and its relationship to the gall bladder
3. Identify the anatomical relationships of the pancreas
4. Describe the portal triad and identify the ligament that contains it
5. Describe the blood flow through the fetus versus through the adult
6. Describe the changes in vascular structure between the fetus and the adult

7. Describe the relationships, anatomy and the arterial supply of the foregut

Kidney, Suprarenals & Abdominal Autonomics: Upon completion of this lecture and lab, MS1 students should be able to:

1. Identify layers surrounding the kidney
2. Discuss the relationship of the kidney to ribs, muscles, viscera and fascia
3. Discuss the relationship of the extraperitoneal fascia to the kidney
4. Identify the vasculature of the kidney and suprarenals
5. Discuss the autonomic innervation of the gut and pelvis
6. Discuss the vagal distribution within the thorax and abdomen
7. Discuss the anatomy within the bisected kidney
8. Discuss the adult location of the appendix as well as alternative locations for appendix due to development

Perineum: Upon completion of this lecture and lab, MS1 students should be able to:

1. Identify the borders of the perineum
2. Identify the muscular and spongy components of the male perineum
3. Discuss the regions of the urethra in the male and female
4. Identify the vasculature of the male and female perineum
5. Identify the fascial layers of the perineum
6. Discuss the innervation of the male and female perineum
7. Discuss the anatomy of the female external genitalia
8. Compare and contrast the UG triangle and the anal triangle
9. Discuss the borders and contents of the ischioanal fossa
10. Discuss and identify the layers of the anterior abdominal wall and the perineum

Pelvic musculature and fascia:

1. Discuss the bones that comprise the pelvis
2. Compare and contrast male and female pelvic bones
3. Identify muscles of the pelvic diaphragm
4. Identify the muscles that contribute to rectal control and sphincters
5. Discuss the orientation of the human pelvis in the adult
6. Discuss weight distribution from the axial to the appendicular skeleton standing versus sitting
7. Discuss the relationship of the bladder to the ductus deferens
8. Discuss the pathway of sperm from development to ejaculation
9. Identify the anatomical regions of the bladder and the prostate
10. Identify the transverse rectal folds and discuss their purpose
11. Identify the vasculature of the rectum and discuss the pathway for drainage and supply
12. Describe the anatomy of the rectum.
13. Discuss the importance of the pectinate line and the anatomical differences above and below that line

Pelvic Nerves and Vessels: Upon completion of this lecture and lab MS1 students should be able to:

1. Discuss the innervation of the bladder and the pathways involved with limiting/stopping and allowing urination (including sensation)
2. Discuss the role of the levator ani in functioning urination and defecation
3. Discuss the difference between autonomic, atonic, and autonomous bladder
4. Discuss the innervation of the rectum and the role/location of visceral afferents, the pudendal nerve, parasympathetic nerves

5. Discuss the nervous role in erection and ejaculation and the role of the somatic, parasympathetic and sympathetic nerves
6. Identify the various portions of the inferior, posterior portion of the diaphragm and identify the relationships with nerves of the posterior abdominal wall
7. Identify the plexuses of the pelvis and the types of fibers contained within them
8. Discuss the components, pathway and purpose of the cavernous nerves
9. Discuss the autonomic innervation of the descending colon and identify the pathway that these nerves take to innervate it
10. Discuss the pain/afferent fibers involved with pain during childbirth
11. Discuss the pathway of the pudendal nerve and internal pudendal vessels through to innervate the perineum

The back: Upon completion of this lecture and lab MS1 students should be able to:

1. Identify the surface anatomical landmarks associated with the back
2. Identify the movements of the scapula and the muscles that are involved with these movements
3. Describe the purpose(s) of the skeletal components of the back
4. Compare and contrast the regional vertebrae (cervical, thoracic, lumbar, sacral and Coccygeal)
5. Describe the joints between the cervical vertebrae and the skull
6. Describe the relationship of spinal nerve C1 to the vertebral column and the skull and compare this relationship to spinal nerve C8 and inferior
7. Describe the atlanto-occipital and atlanto-axial joints and the relevant anatomical structure of the bony components that contribute to (or permit) the movement of these joints
8. Define the term “mixed spinal nerve”
9. Define the terms “ventral and dorsal ramus”
10. Compare and contrast the term “ramus” with “root” in the context of nerves as they leave the spinal cord
11. Describe the “entrances” and “exits” of the sympathetic trunk
12. Identify the anatomical location of the greater occipital nerve and artery
13. Identify the innervation and attachments of trapezius and describe the actions of this muscle in terms of these attachments
14. Identify the innervation and attachments of the the latissimus dorsi and describe the actions of this muscle in terms of these attachments
15. Identify the muscles which rotate the scapula and the action of the muscles on the scapula

Suboccipital Region:

1. Describe the anatomical regions and steps involved with a laminectomy.
2. Describe the anatomy of the vertebra, relating it to the structures that are associated with the vertebra, attach to it or travel through it (i.e. vertebral notch, intervertebral foramen, pedicles, facets etc)
3. Identify the curvatures of the spinal cord (and the vertebral regions at which they occur) and describe the anatomy of the vertebral columns that influence these curvatures
4. Define the boundaries and contents of the vertebral foramen
5. Identify the ligaments of the vertebral column and describe their anatomical location (i.e. relationship to the vertebra, intervertebral disc and/or spinal cord)
6. Describe the movements limited by the ligaments of the vertebral column and identify the specific ligaments that limit these movements
7. Identify and describe the anterior and posterior border of the spinal canal

8. Identify the vertebral levels (and cord levels) associated with the following regions of the spinal cord:
    a. Extent of the spinal cord: conus medullaris
    b. Extent of the dural sac
    c. Extent of the spinal canal/sacral hiatus
    d. Location of cauda equina
    e. Location of the filum terminale
    f. Cerebral Spinal Fluid
9. Identify the layers encountered for lumbar puncture and the best location to do this procedure
10. Identify the meningeal coverings of the spinal cord and describe the relationship of the dural sac to the spinal cord
11. Identify the significance of the coccyx as it relates to the spinal cord and meningeal coverings
12. Identify the location of the spinal cord enlargements
13. Describe the relationship of a posterior-medial herniation of an IV disc to a spinal nerve (i.e. does an L4 IV disc affect the L4 nerve as it exits the spinal cord)?
14. Identify the arterial supply of the spinal cord, what feeds this artery and the location of this arterial supply
15. Identify the origin of the vertebral artery
16. Describe the relationship between portal-caval anastomosis and the vertebral veins (i.e. how would infection spread between the ischio-rectal fossa and the cranium

Scapular Region:

1. Describe the surface anatomy of the upper extremity and the deeper structures these areas approximate
2. Identify the cutaneous innervation of the upper extremity
3. Identify the superficial venous drainage of the upper extremity
4. Identify muscles that originate from the glenoid tubercle
5. Identify structures that originate from the corocoid process and describe the movements of the muscles that take origin from this region
6. Describe the significance of the intertubercular sulcus/groove
7. Describe the movements of the shoulder joint and the muscles that contribute to these movements. (keep in mind that a single muscles may contribute to multiple movements depending on fiber orientation)
8. Describe the relationship of the suprascapular nerve and artery to the superior transverse scapular ligament and identify the muscles supplied by these vessels and nerve
9. Describe the relationship of the superior lateral cutaneous nerve of the arm to the axillary nerve
10. Identify the borders and contents of the quadrangular space and the triangular space on the posterior aspect of the shoulder
11. Describe the significance of the triangular interval/inferior triangular space on the posterior aspect of the shoulder
12. Describe the movements associated with the supraspinatus and the nerve that innervates this muscle
13. Describe the muscles involved with abduction of the upper limb and the nerves involved with this movement
14. Describe the anastomosis around the shoulder joint and the location where a ligature would prevent blood flow inferiorly

Axilla and Brachial Plexus:

1. Describe the origins, insertions, innervations, and the actions of pectoralis major and minor
2. Describe the relationship of medial and lateral pectoral nerves as they exit the brachial plexus and as they innervate the pectoralis muscles
3. Identify the muscles that influence anatomical location of the clavicle
4. Identify the borders and contents of the brachial plexus
5. Describe the clinical outcome of a long thoracic nerve injury and the anatomical reasons for the clinical outcome
6. Describe the relationship of the axillary artery to the brachial plexus cords within the axilla
7. Identify the branches of the axillary artery
8. Identify the anatomical structures that define the transition(s) from subclavian artery, axillary artery (3 parts) to the brachial artery
9. Identify the muscles that contribute to the posterior axillary fold
10. Identify the structures that lie anterior to the posterior axillary cord
11. Identify the branches of the posterior cord and the muscles that each innervate
12. Describe the anatomical relationships of the radial nerve as it exits the brachial plexus and transmits distally and identify potential locations for nerve damage
13. Describe the regions of the brachial plexus and the nerves branching from the brachial plexus
14. Identify the relationship between the phrenic nerve and the brachial plexus
15. Identify the effects of injuries to different regions of the brachial plexus (may need additional lectures to fully flesh this out)
16. Describe the outcomes of brachial plexus cord injuries

Arm and Cubital Fossa

1. Describe the osteology of the humerus bone
2. Identify the portions of the humerus bone which contribute to the shoulder joint
3. Identify the origin, insertion, innervation, vascularization, and function of the following muscles:
    a. Teres Minor
    b. Triceps Brachii
    c. Teres Major
    d. Biceps Brachii (keeping in mind its tendinous insertion)
    e. Deltoid
    f. Pectoralis Minor
    g. Pectoralis Major
    h. Corochobrachialis
    i. Brachialis
    j. Brachioradialis
    k. Subscapularis
4. Identify the borders and contents of the quadrangular space and identify the area this space communicates with
5. Identify the borders of the triangular interval and triangular space and the structures visible within these spaces
6. Describe the varied actions of the biceps brachii and how this relates to upper limb position during each action
7. Identify the musculature of the anterior compartment of the arm
8. Identify the anatomical relationships of the arm in a cross section
    a. Describe the anatomical cues that illustrate medial and lateral in the arm

   b. Describe the anatomical cues that illustrate whether you are observing the arm or the forearm
   c. Identify the relationships of neurovascular bundles as they travel through the arm
   d. Identify the compartments of the arm
9. Identify the relationship between anconeus and the cubital anastomosis
10. What is the cutaneous innervation of the upper extremity
11. Describe the blood flow from the arm to the forearm
12. Identify the components of the cubital anastomosis
13. Identify the boundaries and contents of the cubital fossa
14. Describe the pathway that the median nerve course travels through the cubital fossa

Flexor Region of the Forearm

1. Describe the osteology of the forearm and identify the regions that contribute to the elbow joint
2. Identify the names and location of the carpal bones
3. Identify the number and locations of metacarpals and phalanges
4. Identify the muscles of the forearm (include location, innervation/vascularization and action)
   a. Pronator teres
   b. Flexor carpi radialis
   c. Palmaris Longus
   d. Flexor carpi ulnaris
   e. Flexor digitorum superficialis
   f. Flexor pollicis longus
   g. Flexor digitorum profundus
   h. Pronator quadratus
5. Describe the common flexor tendon and identify the muscles that are associated with it
6. Describe the relationship of the flexor tendons, nerves, and vessels to the flexor retinaculum and correlate this knowledge to cross sectional anatomy (i.e. carpal tunnel)
7. Identify the muscles in the deep and superficial layers of the forearm flexors
8. Describe how you would test ulnar nerve efficacy on patient and why you would use this method for testing
9. Identify the most stable bone of the forearm
10. Identify structures of the forearm in cross section
11. Describe the relationships of structures that travel from the forearm to the hand (i.e. within the carpel tunnel or external; superficial or deep etc)

Palm of Hand:

1. Identify the location and nomenclature associated with the carpals, metacarpals, and phalanges
2. Describe the articulating surfaces and location of the following joints:
   a. Metacarpal phalangeal joint
   b. Interphalangeal joint
   c. Carpal metacarpal joint
3. Describe the relationship of the palmaris longus tendon to the palmar aponeurosis
4. Describe the role of the superficial and deep transverse metacarpal ligaments
5. Identify the origins, insertions, innervation, and action of the following muscles of the hand:
   a. Palmaris brevis
   b. Abductor pollicis brevis
   c. Flexor pollicis brevis

    d. Opponens pollicis brevis
    e. Adductor Pollicis
    f. Abductor digiti minimi
    g. Flexor digiti minimi
    h. Opponens digiti minimi
6. Describe the muscles that compose the thenar eminence
7. Describe the relationships of the recurrent branch of the median nerve as it crosses the flexor retinaculum and travels into the hand
8. Identify the relationship of opponens pollicis brevis with other muscles of the thenar compartment
9. Identify the movements of the thumb (hint: try to link these movements to the attachments of each muscle to the thumb)
10. Identify the muscles involved with thenar wasting due to median nerve damage and describe why ulnar nerve damage would not result in thenar wasting but will result in hypothenar wasting
11. Identify the muscles that comprise the hypothenar compartment
12. Describe the relationship of the superficial palmar branch of the radial artery and the recurrent branch of the radial nerve with the thenar compartment
13. Identify the location, innervation, action and relationships of the interossei muscles
14. Describe the relationship of the interossei with the extensor expansion hoods
15. Identify the axis of movement of the digits of the hand
16. Describe the relationship of flexor digitorum superficialis and profundus as they attatch to the phalanges and how this relationship determines the actions of these tendons on the phalanges
17. Identify the relationship of the lumbricles with the flexor digitorum muscles and identify their innervation
18. Describe anatomical basis for “ape hand” when the median nerve is damaged at the wrist (i.e. muscles which lose innervation, functions and sensations that are lost).
19. Describe the anatomical bases for “claw hand” when the ulnar nerve is damaged at the wrist.
20. Identify the contributions of the ulnar artery and the radial artery to the arterial anastomosis of the palm
21. Identify the relationship(s) of the radial artery as it migrates from the posterior aspect of the hand to the palm
22. Identify the relationship of the ulnar nerve and artery as it traverses the wrist

Extensor Region of the Forearm/Dorsum of the hand

1. Describe the bony features of the forearm
2. Identify the location of the anconeus
3. Describe the origin and location of the common extensor tendon
4. Identify the origins, insertions, innervation, and action of the following muscles of the extensor compartment of the forearm
    a. Extensor carpi radialis longus
    b. Extensor carpi radialis brevis
    c. Extensor Digitorum
    d. Extensor Digiti Minimi
    e. Supinator
    f. Abductor Pollicis Longus
    g. Extensor Pollicis Longus
    h. Extensor Pollicis Brevis
    i. Extensor Indices

5. Identify the relationship of the lateral collateral ligament to the musculature of the extensor compartment of the forearm
6. Describe the relationship of the interosseus membrane to muscles in the extensor compartment of the forearm
7. Describe the pathway and innervations of the radial nerve, including anatomical relationships as the radial nerve courses through the forearm
8. Identify the relationship of the interosseus recurrent artery to the musculature of the forearm
9. In cross section, describe the relationship of the ulna to the skin and subcutaneous tissue and how this relationships indicates location of the cross-sectional location within the forearm
10. Identify musculature, nerves, and veins in the forearm using cross-sectional anatomy
    a. Describe the relationship of the ulna to the skin and subcutaneous tissue and how this relationships indicates location of the cross-sectional location within the forearm
    b. Identify the relationship of the superficial branch of the radial nerve to the brachioradialis and the extensor carpi radialis longus as you move from superior to inferior
    c. Identify the relationship of the brachioradialis to the flexor compartment of the forearm
    d. Identify the relationship of the interosseus recurrent a to anconeus and supinator
    e. Identify the superficial and deep muscle layers of the extensor compartment of the forearm
    f. Identify the change in relationships between extensor carpi ulnaris with the ulna as visualized from superior to inferior on the forearm
11. Identify the boundaries and contents of the anatomical snuffbox. Include a description of the relationship of the radial artery to the scaphoid bone as it passes through the anatomical snuffbox
12. Identify the branches of the radial artery
13. Identify the arteries contributing and forming to the dorsal carpal arterial arch
14. Identify the branches off of the dorsal carpal arteries
15. Describe the muscles/tendons that contribute to/attach to the extensor expansion hood and identify the locations that these muscles attach along the extensor expansion hood
16. Identify the attachment locations and components of the extensor hood

Upper Extremity Joints

1. Compare and contrast the joints in the upper and lower limb: function, bony structures and their connections to these joints
2. Identify the ligaments of the AC joint and describe their anatomical locations and the classification of this joint
3. Describe the anatomical relationship of the supraspinatus to the AC joint
4. Identify the bony and ligamentous contributions to the sternoclavicular joints and describe the location of the articular disc.
5. Describe the functions of the AC, sternoclavicular and
6. Discuss the locations, insertions, innervations, and functions of the rotator cuff muscles as they contribute to the rotator cuff
7. Discuss the muscles that contribute to medial rotation, lateral rotation and adduction and the nerves that impact these movements.
8. Identify the muscles that help work to hold humeral head within the glenoid cavity
9. Describe the muscles that contribute to the socket of the glenohumeral joint

10. Discuss the relationship of the biceps brachii (long head) tendon with the glenohumeral joint
11. Describe the joint capsule of the glenohumeral joint, comparing and contrasting this structure anteriorly and posteriorly
12. Describe the ligaments of the glenohumeral joint and how they reinforce the capsule
13. Identify the bony articulations contributing to the elbow joints
14. Describe the ligaments associated with the elbow joint (include anatomical location and forces that it resists and/or stabilizes): annular, ulnar collateral ligament, radial collateral ligament
15. Describe the classification/type of joint that the distal radioulnar joint and wrist joints are
16. Identify the location of the radius and ulna during supination and pronation
17. Identify the location of the articular disc and synovial cavity and the relationships of these areas to the distal radioulnar and the wrist joint
18. Identify the components of the extensor expansion
19. Compare and contrast insertion of Lumbricals versus Interosseus muscle into the extensor expansion hood
20. Identify the relationship between flexion and extension in gripping an item with the hand and why both of these movements are necessary to grip

Cervical Fascia and Posterior Triangle

1. Describe the layers surrounding the neck and identify the attachments of the different layers
2. Describe the “danger space” and identify the layers that define it and its superior and inferior communications
3. Identify the anatomical location of the contents of the carotid sheath within this sheath
4. Identify the location and extent of the retropharyngeal space and the pretracheal spaces and their communications superiorly and inferiorly
5. Identify the location and innervation of platysma and describe its relationship to subcutaneous fascia and to superficial layer of deep cervical fascia
6. Describe the anatomical boundaries and the contents of the posterior triangle
7. Identify the anatomical contents of the superficial cervical fascia as it encases the neck
8. Identify the anatomical contents of the prevertebral fascia as it encases the neck
9. Describe the relationship of the following structures to the “danger space”: cervical sympathetic trunk and the pretracheal fascia
10. Describe the relationship of the scalenes with the brachial plexus and the phrenic nerve
11. Describe the contents of the space formed by pretrachial fascia
12. Identify the relationship of the recurrent laryngeal nerve and the contents of the pretrachial fascia
13. Identify the relationship between buccopharyngeal fascia and pretrachial fascia
14. Identify the relationship between superficial cervical fascia with the following stuctures: pretrachial fascia, acromion, mandible and the manubrium
15. Identify the extent of the prevertebral fascia (how far inferior does this fascia extend?) and the relationship of the alar fascial layer ofthe prevertebral fascia, the esophagus and the buccopharyngeal layer of pretracheal fascia
16. Identify the origin and insertion of the pretracheal fascia and its relationship with the superior mediastinum
17. Identify the relationship between the pharyngobasilar fascial layer of pretracheal fascia and the superior pharyngeal constrictor and the buccinators in the mouth
18. Describe the relationship between the posterior aspect of the mouth and the danger space

19. Identify the origion, insertions, functions and innervations of the trapezius and the sternocleidomastoid
20. Identify the venous drainage into the external and internal jugular veins
21. Describe the attachments and innervations of the muscles associated with the hyoid bone.
22. What is the relationship between the hyoglossus muscle with the following structures: the hypoglossal nerve and the lingual artery
23. Identify the location and relationships of the branches of the external carotid.
24. Identify the relationships of the hypoglossal nerve in the neck, including its relationship with the artery to sternocleidomastoid/occipital artery

Introduction to Cranial Nerves:

1. Identify the seven potential functional components of cranial nerves
2. Describe the four components of a general spinal nerve
3. Identify the spinal cord levels that the presynaptic cell bodies of the head and neck originate
4. Describe the outcome of nerve lesions at the following location of a "typical spinal nerve": ventral root, dorsal root, intervertebral foramen, posterior ramus, anterior ramus, sympathetic trunk
5. Identify locations of bony communications where nerves pass through the cranium and the components of the cranial nerves as they exit the skull

Cranial Nerves and the Neck

1. Identify the location of the inferior thyroid artery in relationship to the carotid sheath
2. Identify the location of the dura mater, pia mater, and arachnoid mater in relationship to the 1st cranial nerve and anterior cranial fossa
3. Identify the location of CSF fluid in relationship to the 1st cranial nerve and the anterior cranial fossa
4. Describe the location and anatomy associated with the optic chiasma, including its relationship with the pituitary gland and identify the early outcomes of a pituitary adenoma on sight
5. Describe the bony passageways that the facial nerve traverses
6. Describe the anatomy, physiology and pathways associated with the parasympathetic components of the facial nerve
7. Describe the anatomy of the foramen lacerum, and petrotympanic fissure, pterygopalatine fossa, stylomastoid foramen and the relationship of these regions to the facial nerve
8. Identify the locations that parasympathetic fibers join the trigeminal nerve
9. Describe and identify regions of the facial nerve pathway and its branches within the head and neck wherein damage would result in an affect of both SVE and parasympathetic fibers (GVE) components.

Exterior of Skull, Face, Parotid Region and Scalp

1. Identify the locations, bony and muscular features associated with the following bones of the cranium: the zygomatic bone, frontal, temporal, sphenoid bone, occipital maxilla, parietal and mandible bones
2. Identify the relationship between the maxillary bone and the nasal aperture
3. Identify the location of the supraorbital notch, infraorbital foramen, and the mental foramen and describe the nerves transmitted through these regions
4. Describe the features of the temporal bone (i.e. external acoustic meatus and mastoid process) and the anatomical relationships found at these locations

5. Identify the superior and inferior temporal lines and describe the attatchments associate with these lines
6. Identify and locate the sutures of the cranium and the relationships of the bregma and lambda to these sutures
7. Describe the anatomy and significance of the pterion
8. Identify the location of the parietal emissary veins and where they drain
9. Identify the divisions of the trigeminal nerve and describe its GSA innervation of the head and neck (include the terminal branches of V1, V2, and V3)
10. Identify the location of the facial nerve, its branches and the muscles innervated by these branches
11. Describe the pathway and layers associated with the facial nerve as it exits the stylomastoid foramen and enroute through the parotid gland
12. Describe the relationship of the facial nerve to the potential clinical scenario of bells palsy
13. Identify the layers of the scalp
14. Describe the location of the nerve and vessels within the scalp
15. Describe the relationship of the gala apaneurotica to the frontalis and occipitalis muscles and describe the appearance of the scalp if a cut transected this layer
16. Identify the composition of the periostium
17. Identify the layers of the dura mater and describe the relationship of these layers to the dural venous sinuses
18. Describe the layers that the emissary veins must travel through to reach the superior sagittal sinus (this can indicate a pathway of scalp infection) including any potential spaces
19. Identify the layer of the middle meningeal artery and its relationship to the layers deep to the periostium
20. Compare and contrast an epidural and a subdural hematoma

Temporal Fossa. Temporomandibular joint, and Infratemporal fossa

1. Define the bony borders of the TMJ
2. Identify the relationship of the mandibular division of the trigeminal nerve with the mandible
3. Identify the synovial membrane and the articular disc of the TMJ
4. Describe the muscles (including origins and insertions) associated with the following movements: Opening and closing the mouth, retract and protraction of the mandible and mandible deviation and identify the nerves that play a role in these activities (include sensory of the TMJ).
5. Define the region of the TMJ synovial cavity that plays a role in the above movements (superior or inferior)
6. Describe the location of the facial nerve after it exits the stylomastoid foramen and identify the anatomical relationships of this nerve as it continues to innervate the muscles of facial expression
7. Identify the relationship between the auriculotemporal nerve and the facial nerve with the parotid gland
8. Identify the bony features of the mandible
9. Describe the pathway of the inferior alveolar nerve and artery to enter the mandible
10. Identify the origin and insertion of the masseter muscle
11. Describe the origin, insertion and anatomical relationships of the pterygoid muscles (such as deep temporal nerves, maxillary artery, lateral pteyroid plate, lingual and inferior alveolar nerve, and the buccal nerve)

12. Describe the innervation of the submandibular gland and sensory to the anterior 2/3 of the tounge and the pathways/nerves involved with this innervation
13. Identify the communications associated with the infratemporal fossa and the sturctures that pass through these communications
14. Identify the nerve branches that occur within the infratemporal fossa and describe the fates of these nerves and their relationship to the lateral pterygoid muscle
15. Describe the relationship of the middle meningeal artery with the auriculotemporal nerve
16. Identify the arterial branches that occur within the infratemporal fossa off the maxillary artery

Pharyngeal Arch Development

1. Identify the tissues that contribute to the pharyngeal archs
2. Identify the components common to each arch
3. Identify the different arches present in the human and the derivatives and components of each of these arches
4. Describe the dual innervation of the digastric and explain the developmental impact on this innervation
5. Identify the adult location of the parathyroid glands and explain why the inferior parathyroid gland develops superiorly to the superior parathyroid gland
6. Identify the origin of the ossicles of the ear and how their development is related to the external acoustic meatus and tubotympanic recess
7. Identify the origins of the external aspect of the neck

Craniofacial development

1. Describe the anatomy of the tongue and the embryological events that lead to the adult anatomy (include muscle and nerve origins)
2. Identify the origin and anatomy of the thyroid gland and describe how this structure may maintain a relationship with the tongue into adulthood and why this may happen
3. Identify the origin of the incisive foramen. What developmental events lead to the formation of this structure and how does development of the palate suggest its innervation (i.e. which arch is at least part of the palate associated with?)
4. Identify possible locations for cleft lip and cleft palate and describe the developmental events that lead to these being the only possible locations for these anomalies
5. Describe the communications of the nasolacrimal duct and outline the developmental events that allowed for these communications
6. Identify the origin of the philtrum of the lip

Interior of Skull, Meninges, Dural Infoldings and Venous Sinuses, Cranial Fossae

1. Identify the bony features of the superior aspect of the calvaria (including sutures, lamina, bones, in-prints of sinuses, arteries, and arachnoid granulations)
2. Identify the bony features of the inferior aspect of the calvaria
3. Describe the relationship of the ethmoid bone with CN I
4. Identify the relationship between the superior orbital fissure and the lesser wing of the sphenoid bone
5. Identify the relationship of the petrous part of the temporal nerve with the ossicles of the ear
6. Define dural venous sinuses and the layers between which they are formed
7. Identify the communications of the following sinuses (try to develop a “map” of dural venous sinus drainage): superior sagittal sinus, inferior sagittal sinus, straight sinus, confluence of sinuses, transverse sinus, cavernous sinus, sigmoid sinus, internal jugular

vein, sphenoidal sinuses, superior and inferior petrosal sinuses, anterior and posterior intercavernous sinus, basilar plexus (internal vertebral fossa), marginal sinus, occipital sinus,

8. Describe all venous communications with the cavernous sinus
9. Identify the venous drainage pathway of emissary veins (including the mastoid emissary vein)
10. Define the term “dural reflections”
11. Identify the following dural reflections and their anatomical relationships with the dural venous sinuses: Falx cerebri, tentorium cerebelli, falx cerebelli, and the diagphragma sella
12. Identify the location of name change from the transverse sinus to the sigmoid sinus
13. Identify the anatomical boundaries and contents of the cavernous sinus (include bones and dural reflections)
14. Define the boundaries of the anterior, middle and posterior cranial fossa and identify structures and foramena associated with each region (bony, vasculature, and nervous)
15. Identify occupant of foramen lacerum
16. Describe the formation of the nerve of the pterygoid canal/vidian nerve, the components within this nerve and the anatomical location of this nerve

The Orbit:

1. Identify the structures that comprise the nasolacrimal apparatus.
2. Describe the path of a tear (why can you “taste” eye drops?).
3. Describe the structure, including musculature and innervation, of the eyelids.
4. Describe the outcome a loss of sympathetic innervation to the head and neck and how this loss would affect the position of the upper eyelid
5. Describe the outcome of an oculomotor nerve palsy and the effect of this palsy on the position of the upper eyelid
6. Identify the bones that contribute to boundaries of the orbit.
7. Describe the common tendinous ring, and its relationship to extraocular muscles, boney foramina and neurovascular structures.
8. Describe the three axes of the eye and corresponding actions that occur around these axes.
9. Describe the origin, insertion, action, innervation, and vascularization of the six extraocular muscles that control eye movements.
10. Describe the effects of abducens nerve palsy on position and movements of the globe?
11. Describe the effects of trochlear nerve palsy on position and movements of the globe?
12. Describe the ciliary ganglion.
13. Identify the origin and function of the GVE fibers that synapse in the ciliary ganglion.
14. Identify the origin and function of the GVE fibers that do not synapse in the ciliary ganglion.
15. Identify the origin and function of the GSA fibers that pass through the ciliary ganglion.
16. Describe the cranial nerves involved in the corneal blink reflex.
17. Identify the course of trigeminal nerve branches that enter the orbit.
18. Describe innervation of the lacrimal gland.
19. Describe the course of ophthalmic artery and branches in the orbit.

The Globe

1. Define the extent and purpose of the conjunctiva
2. Identify the layers that define a subconjunctival hemorrhage
3. Compare and contrast scleritis with conjunctivitis
4. Identify the role of the cornea

5. Identify the boundaries of the anterior chamber
6. Define the components of the uvea
7. Describe the purpose of the iris
8. Describe the ciliary body and the effects of ageing on accommodation
9. Define the purpose and location of the lens and how cataracts affect the lens
10. Compare and contrast a CNIII palsy with or without effects of the pupil and the components responsible for these differences and similarities
11. Identify regions of the eye with low and/or high amounts of vascularization

Nervous System Development

1. Identify the germ layer that forms the mesoderm, the neural plate
2. Describe the steps involved with neurulation
3. Identify the regions of the adult brain and the developmental precursors of these regions
4. Identify the region of the developing brain that gives rise to the eye
5. Identify the components that are absent in a case of anencephaly
6. Describe the reason that most Spina bifida is associated with sacrolumbar region and identify the tissues of the adult that may be affected by this anomaly
7. Define the three layers of the spinal cord associated with its development
8. Identify the adult equivalent of the mantle layer
9. Describe the role of the alar and basal plate and the region that divides these two areas
10. Identify the origins of the dorsal root during development
11. Describe the role that differential growth plays in allowing for the ability to do a lumbar puncture below the level of L4
12. Identify the tissue sources of the eye
13. Identify the cellular layer that gives rise to the lens
14. Describe the role of the choroid fissure and the anatomical necessity for this region
15. Define the adult derivative of the optic stalk
16. Identify the tissue sources of the cornea
17. Substantiate the claim that many eye abnormalities are observed inferiorly and describe the developmental events in eye development that support this statement
18. Identify the adult derivatives of neural crest cells associated with the peripheral nervous system
19. Describe the difference in development between the motor and sensory nerves
20. Identify the regions of the head and neack dependent on neural crest cell migration

Clinical Correlate: CNS Development:

1. Identify the difference between anaencephaly, hydranencephaly and encephalocele
2. Discuss the developmental events associated with craniofacial defects that can lead to hypertelorism (increased distance between eyes)
3. Discuss the developmental layers associated with spina bifida, meningocele, and myelomeningocele
4. Describe the reason that the posterior fontanelle is rarely a problem in newborns

Craniovertebral Joints:

1. Identify the boney features of the atlas and axis
2. Describe the type of joint associated with the atlanto-axial joint
3. Identify the components and attachments of the cruciate ligament
4. Identify the continuation of the tectorial membrane inferiorly
5. Identify the relationship between the dura mater and the tectorial membrane and the basilar venous plexus

6. Identify the anatomy of the alar ligaments, their relationship to the cruciate ligament and the movement limited by the presence of these ligaments
7. Identify the relationship between the subclavian artery, the common carotid artery, vertebral artery, thyrocervical trunk, and the scalene muscles
8. Identify the anatomy of the transverse process of C6 (i.e. vertebral artery, vertebral ganglia,
9. Identify the branches of the thyrocervical trunk
10. Identify the relationship between the inferior thyroid artery and the carotid sheath
11. Identify the relationship of the ascending cervical artery, the phrenic nerve, the transverse cervical artery and suprascapular artery and the anterior scalene (where are these structures in relationship to the anterior scalene? In relationship to the phrenic nerve? In relationship to the prevertebral fascia?)
12. Describe the location of the the stellate ganglia, and the 1st rib, vertebral cervical sympathethic ganglion and the superior cervical ganglia and identify the origin of these presynaptic cell bodies
13. Describe the location of the cervical sympathetic trunk as it relates to fascia and spaces within the head and neck
14. Identify the mechanism that sympathetic nerve fibers are transmitted into the head and the types of fibers present within the head
15. Identify the origin of the fibers within the deep petrosal nerve
16. Identify the location and anatomy of the ansa subclavias (include the relationship to cervical sympathetic ganglia, subclavian artery, scalene muscles and phrenic nerve)
17. Identify the contents of the prevertebral region and vertebral triangle (arterial, nervous, venous)

Autonomics & Ciliary ganglia

1. Identify the location of presynaptic sympathetic cell bodies that are found in the head and the location of synapse of synapse of these nerves
2. Describe the phenotype observed with a complete sympathetic nervous system disruption in the head and include the cause of the observed phenotypes
3. Describe the innervation of the submandibular gland and why the autonomic innervation of this gland differs from others
4. Describe the effects of parasympathetic innervation of the head
5. Identify the types of fibers present in zygomatic nerve
6. Describe the origins of the sensory root, the sympathetic root and the parasympathetic root as they enter the ciliary ganglia
7. Identify the types of fibers present in the short ciliary nerves
8. Discuss the relationship between the cavernous sinus and structures that are transmitted through the superior orbital fissure
9. Identify the anatomy associated with sympathetic transmission from the internal carotid plexus to the short ciliary nerve
10. Identify the origin of presynaptic parasympathetic fibers and the pathway they take to become postsynaptic parasympathetic fibers
11. Describe the effects of elimination of the parasympathetic or the sympathetic innervation of the eye

Pterygopalatine Fossa and Maxillary Nerve

1. Identify the communications of the pterygopalatine fossa
2. Describe the structures that pass through (are associated with) the pterygopalatine fossa and the anatomical locations that these structures pass through

3. Describe the pathway of the maxillary nerve and how it can associate with both the foramen rotundum and the inferior orbital fissure
4. Identify the structures transmitted to and from the pterygopalatine ganglion and describe the the types of fibers and origins/destinations of each of these connections
5. Describe the innervation of the nasal cavity and identify the pathway and origin of these nerves
6. Identify the innervation of the maxillary sinus and discuss the pathway these nerves access the sinus
7. Describe the components of the nerve of the pterygoid canal (vidian nerve) and the origins of these various components
8. Describe the pathway(s) of post-ganglionic parasympathetic fibers from the pterygopalatine ganglia and the role they play once they arrive at their final destination
9. Describe the pathway of parasympathetic nerves to the lacrimal gland
10. Identify the final location of the SVA and GVA components of the nerve of the pterygoid canal

Nasopharynx, Pharynx & Paranasal sinuses

1. Describe the overlap that is present anatomically between airway and food passageways
2. Describe the anterior wall of the pharynx and how this anatomy differs from the posterior wall of the pharynx
3. Identify the boundaries and extent of the nasopharynx, oropharynx, and hypopharynx
4. Describe the significant role of the cricopharyngeaus in swallowing and gastric reflux and discuss its anatomical location and innervation
5. Define the origins, attachment, and innervations of the superior, middle and inferior constrictor
6. Identify the pathway of infection which originates in the pharynx
7. Identify the function, innervation and anatomy of the stylopharyngeus, salpingopharyngeus,
8. Describe the function of the soft palate and the hard palate and identify the position of the soft palate during phonation
9. Identify the muscles that function on the soft palate and describe their function, location and innervation
10. Describe the relationship between palatoglossus, palatopharyngeus and the palatine tonsils
11. Describe the stages of deglutition and the muscles involved with each step
12. Identify the location of drainage of the paranasal sinuses and the nasolacrimal duct
13. Identify the vascular and nervous supply of the nasal cavity (lateral nasal wall and septum)

Oral cavity

1. Define the boundaries and extent of the oral cavity
2. Identify the function, innervation, and anatomy of the orbicularis oris
3. Discuss the innervation, arterial/venous supply of the tongue
4. Describe the relationship between the venous plexus and the hypoglossal nerve
5. Describe the function of the epiglottis and the anatomy that facilitates this function
6. Describe the relationship of the palatine tonsil to the tongue and discuss the innervation of these areas
7. Identify the intrinsic muscles of the tongue and describe their developmental origin, location and innervation

8. Identify the extrinsic muscles of the tongue and describe their attachments & insertions, innervations and functions
9. Identify the suprahyoid muscles and their functions, attachments/insertions and innervations
10. Identify the regions of the mandible that are most prone to fractures
11. Describe the muscles involved with mastication and identify their functions, attachments/insertions and innervations

Autonomic Innervation of the submandibular region and otic ganglia

1. Discuss the cranial nerve and musculature invoked when taking a sip of sweetened coffee (olfaction, taste, sensation) as it flows through the oral cavity, the oropharynx
2. Describe the anatomy crucial to understanding the phenotypes associated with pancoast tumor
3. Identify the anatomical locations of the cervical sympathetic ganglia
4. Describe the target location/structures of post-ganglionic fibers originating from the superior, middle, vertebral and stellate ganglia
5. Describe the glossopharyngeal nerve, its innervations and nervous components
6. Describe the tympanic plexus anatomy and eventual innervation

Larynx

1. Identify the location of the larynx
2. Discuss the relationship between the larynx and the lungs
3. Identify the framework of the larynx
4. Identify the complete cartilaginous ring associated with the larynx
5. Describe the movements associated with the arytenoid and cricoid cartilages
6. Describe the location of a tracheotomy and the relationships necessary to identify this location
7. Identify the intrinsic and extrinsic muscles of the larynx and describe their innervations and functions (include muscle movements and effects on voice pitch)
8. Identify the muscle(s) involved with opening and closing of the vocal folds
9. Identify the muscle that creates the vocal fold
10. Compare and contrast tension/pitch and lengthening/shortening of muscles of the larynx and describe the muscles that contribute to both
11. Describe the function of the strap muscles in regards to the hyoid bone and the larynx
12. Describe the mucosal surface anatomy visible upon inspection of the laryngeal apparatus
13. Describe the location and extent of the laryngeal fold
14. Compare and contrast the false and true vocal folds
15. Compare and contrast the placement of the vocal folds during the following situations: swallowing, modal voice, or whispering
16. Describe the steps involved with protecting your airway during swallowing and the muscles (and nerves) involved

Anatomy of the temporal bone

1. Define the three regions of the ear
2. Identify the components of the external ear
3. Describe the middle ear and the components within
4. Describe the tympanic membrane and identify the attachments to it
5. Identify the ossicles of the middle ear and their locations
6. Identify the muscles of the inner ear and describe their function and innervation

7. Identify the communications of the Eustachian tube
8. Describe the pathway of the chorda tympani as it branches from the facial and joins the lingual
9. Identify the structures observable through the tympanic membrane towards the middle ear
10. Identify structures/indentations observable on the medial and lateral wall of the inner ear
11. Identify the contents and location of the inner ear
12. Identify the components of the membranous and bony labyrinth and the cochlea
13. Describe the purpose of the vestibular part of the cochlea
14. Identify the semicircular canals and their location
15. Describe the components of the temporal bone
16. Identify the bony components of the skull associated with hearing
17. Describe the relationship of the mastoid air cells with the external and middle ear