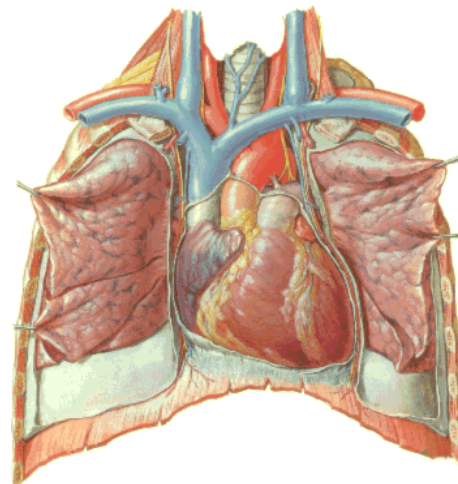
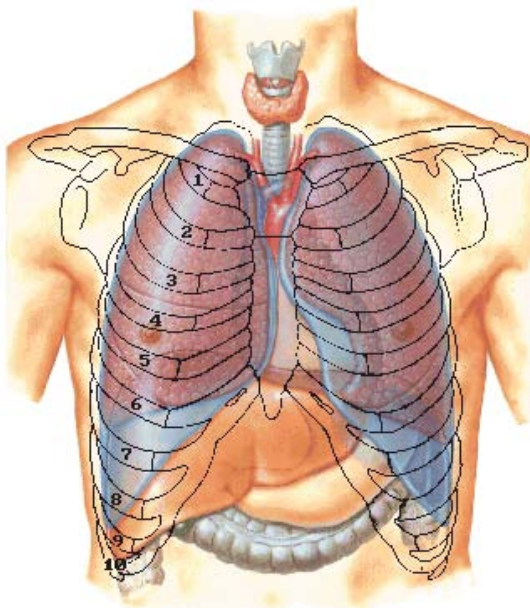


**Clinical Anatomy, Embryology, and Imaging  
BMS 6115C  
Summer 2009**

**Florida State University  
College of Medicine**

**Course Director  
Lynn J. Romrell, Ph.D.**



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## Faculty & Teaching Assistants

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### **Course Teaching Assistants**

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13. Michael Silverstein
14. Joseph Torres

### **Informatics Teaching Assistants**

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2. Casey Cosgrove
3. Nick Cummings
4. Brett Howard

## **General Course Syllabus**

This syllabus is a guide for participation in the course; information is subject to change during the presentation of the courses. Any changes in the course will be announced during the classroom and laboratory sessions and will be noted in the course Blackboard web site.

# Overview

**Goals:** Clinical Anatomy, Embryology and Imaging (BMS 6115C) is a 10 week long course and runs concurrently with the Doctoring 1 Course. The primary goal of the course is to provide the students with a basic understanding of the gross anatomy, embryology and radiologic imaging of the entire body. This knowledge serves as a foundation for the remainder of the student's medical education and future practice of medicine. Second, this course prepares students to apply their understanding of anatomy, embryology, and radiologic imaging as they gain insight into the pathophysiology of disease processes. Students are encouraged to utilize learning resources such as faculty, textbooks, journals and FSU-COM computer resources so that as long term learners the students are able take responsibility for their own continued educational development.

The team approach is essential in this course, which has a major laboratory component. Medicine is a “team sport.” Appropriate care of patients requires the constant interactions of numerous members of the health care team. Most of us learn best when we share our knowledge with others – good teachers learn from those they teach.

The assigned laboratory teams are expected to work together on the clinical cases presented in lecture and to work as a team to complete the assigned dissection in the laboratory. Students will utilize a variety of digital imaging programs that will supplement learning that occurs in the laboratory setting, lectures, small-group sessions and personal study time. As a side benefit, this course will introduce the student to anatomical terminology commonly used in medicine today. The anatomic knowledge gained during the course will be used in later courses in the curriculum.

## **Course Objectives: The student will be able to:**

Knowledge – be able to:

1. Demonstrate a basic knowledge of normal anatomy, embryology, cross-sectional anatomy and radiologic imaging of the human body.
2. Apply anatomical knowledge to recognize and solve clinical problems.
3. Demonstrate knowledge of the anatomical differences in the human body from birth to senescence.
4. Recognize when one has reached the limits of their anatomical knowledge when trying to apply it to understanding clinical problems, and be able to utilize other resources to obtain needed information in a timely manner.
5. Recognize the anatomy and laboratory findings related to variations, pathology, previous surgery and human life cycle from gestation to the elderly patient.

Skills – be able to:

6. Utilize a variety of resources (faculty, textbooks, computers, internet, etc.) to locate anatomic, embryologic, and/or radiologic information in order to understand how it relates to clinical problems.

Interpersonal skills and communication – be able to:

7. Work together as a professional team in the anatomy laboratory and in small-group study sessions.
8. Engage in self-evaluation and evaluate peer performance during the laboratory and small-group experiences of the course.

Professionalism – be able to:

9. Demonstrate professional values, attitudes and behavior in all your interpersonal interactions with faculty, staff and peers.

**COMPETENCY & LEARNING OBJECTIVES AND EXAMPLES OF OUTCOME MEASURES IN THE CLINICAL ANATOMY, EMBRYOLOGY AND IMAGING BMS 6115C** The following are the general institutional learning objectives that have been organized by the competencies established by the College of Medicine.

General Competency	KEY	Institutional Learning Objective	Outcome Measure(s) Examples
	<u>K=Knowledge S=Skills AB=Attitudes/Behaviors</u>		
Professional values, attitudes, and behaviors	AB1	Display the personal attributes of compassion, honesty, and integrity in relationships with patients, families, communities, and the medical profession.	Observational during small-group interactions
	AB7	Demonstrate awareness of the health care needs of aging patients and a willingness to care for the elderly.	Observational during small-group interactions
	AB9	Demonstrate respect for the roles of other healthcare providers and of the need to collaborate with others in caring for individual patients and in promoting public health and community service.	Observational during small-group interactions
General Competency	KEY	Institutional Learning Objective	Outcome Measure(s) Examples
	<u>K=Knowledge S=Skills AB=Attitudes/Behaviors</u>		
Moral reasoning and ethical conduct	AB4	Demonstrate professionalism and high ethical standards in all aspects of medical practice, specifically competence, honesty, integrity, compassion, respect for others, professional responsibility and social responsibility.	Observational during small-group interactions
General Competency	KEY	Institutional Learning Objective	Outcome Measure(s) Examples
	<u>K=Knowledge S=Skills AB=Attitudes/Behaviors</u>		
Communicating with patients, families, and colleagues	S13	Demonstrate the ability to communicate compassionately and effectively, both verbally and in writing, with patients, their families, colleagues, and others with whom physicians must exchange information in carrying out their responsibilities.	Observational during small-group interactions
General Competency	KEY	Institutional Learning Objective	Outcome Measure(s) Examples
	<u>K=Knowledge S=Skills AB=Attitudes/Behaviors</u>		
Application of basic biomedical and behavioral sciences to patient care	K1	Recognize the scientific basis of health, disease, and medicine in the management of common and high impact medical conditions in contemporary society.	Observational during small-group interactions

	<b>K2</b>	Describe the development, structure and function of the healthy human body and each of its major organ systems at the macroscopic, microscopic, and levels.	Observational during small-group interactions. Performance during lab session, large group session, quizzes and major examinations.
	<b>K3</b>	Recognize and discuss the implications of altered structure and function (pathology and pathophysiology) of the body and its major organ systems that are seen in various diseases and conditions.	Performance during lab sessions
	<b>K4</b>	Identify changes in the structure and function of the human body associated with the aging process and be able to distinguish normal changes associated with aging from those that denote disease.	Performance during lab sessions
<b>General Competency</b>	<b>KEY</b>	<b>Institutional Learning Objective</b>	<b>Outcome Measure(s) Examples</b>
		<b><u>K=Knowledge S=Skills AB=Attitudes/Behaviors</u></b>	
Problem solving and critical thinking	<b>K6</b>	Describe basic biobehavioral and clinical science principles used to analyze and solve problems related to the diagnosis, treatment, and prevention of disease.	Performance during lab sessions, small group sessions, large group interactive sessions, quizzes and examinations
	<b>S3</b>	Demonstrate the appropriate use of laboratory tests and radiographic studies in making diagnostic and treatment decisions.	Performance during lab sessions, large group interactive sessions, quizzes and examinations
	<b>S5</b>	Demonstrate the ability to formulate and implement a plan of care for both the prevention and treatment of disease, enhancement of the patient's functional capabilities, and the relief of symptoms and suffering.	Observational during small-group interactions
<b>General Competency</b>	<b>KEY</b>	<b>Institutional Learning Objective</b>	<b>Outcome Measure(s) Examples</b>
		<b><u>K=Knowledge S=Skills AB=Attitudes/Behaviors</u></b>	
Lifelong learning and information management	<b>K11</b>	Describe strategies to support lifelong learning via both print and electronic sources to assist in making diagnostic and treatment decisions (e.g., practice guidelines) and to remain current with advances in medical knowledge and practice (e.g., medical information data bases).	Observational during small-group interactions
	<b>S11</b>	Demonstrate the ability to acquire new information and data and to critically appraise its validity and applicability to one's professional decisions, including the application of information systems technologies for support of clinical decision-making.	Observational during small-group interactions
<b>General Competency</b>	<b>KEY</b>	<b>Institutional Learning Objective</b>	<b>Outcome Measure(s) Examples</b>
		<b><u>K=Knowledge S=Skills AB=Attitudes/Behaviors</u></b>	
Personal awareness	<b>AB5</b>	Exhibit a capacity for self-evaluation, moral reflection, and ethical reasoning to form the basis for a self-directed, lifelong engagement in the responsible, committed, compassionate practice of medicine.	Observational during small-group interactions
	<b>S17</b>	Recognize abilities and limitations; know when to request assistance.	Observational assessment by faculty and staff; Observational during small-group interactions

## **University Curriculum Committee Approved Academic Honor Policy and ADA Statement**

### **ACADEMIC HONOR POLICY:**

The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to ". . . be honest and truthful and . . . [to] strive for personal and institutional integrity at Florida State University." (Florida State University Academic Honor Policy, found at <http://www.fsu.edu/~dof/honorpolicy.htm>.)

### **AMERICANS WITH DISABILITIES ACT:**

Students with disabilities needing academic accommodation should:

- (1) Register with and provide documentation to the Student Disability Resource Center; and
- (2) Bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class.

This syllabus and other class materials are available in alternative format upon request. For more information about services available to FSU students with disabilities, contact the:

Student Disability Resource Center  
97 Woodward Avenue, South  
Florida State University  
Tallahassee, FL 32306-4167  
(850) 644-9566 (voice)  
(850) 644-8504 (TDD)  
[sdrc@admin.fsu.edu](mailto:sdrc@admin.fsu.edu)  
<http://www.fsu.edu/~staffair/dean/StudentDisability/>

### **FSU COM ATTENDANCE POLICY**

#### **COM Philosophy**

##### **We believe that:**

Professionalism is a major component of our medical curriculum. We believe students should conduct themselves appropriately in the various educational activities of the curriculum. This conduct includes coming to educational activities on-time, using the laptop computers only for course work during the educational activity, and not disrupting the class if late. The faculty should also demonstrate professionalism, by starting and ending all scheduled educational activities on time and providing a course schedule with clearly explained course policies in the course syllabus. Any changes in the schedule should be given to the students in a timely manner.

Students will be accountable and personally responsible for attending all educational activities (small groups, labs, clinical experiences, examinations, lectures, computer sessions, etc.).

Unexcused absences reflect negatively on the goals and objectives of the medical curriculum and demonstrate unprofessional behavior by the respective student.

We owe it to our state legislature and the citizens of the State of Florida to provide a quality educational program that meets the needs of our students in preparing them for the M.D. degree.

## **Attendance Policy**

Students are expected to attend all scheduled activities. Students are expected to be on time. Being on time is defined as being ready to start at the assigned time. If a student has an emergency that prevents her/him from attending a scheduled activity, s/he is to call and notify the Office of Student Affairs (Year 1/2) or the Regional Campus Dean / Student Support Coordinator (Year 3/4) and request that they inform the supervisors/professors/clerkship faculty/education director for that activity. If at all possible, the student should also call and at a minimum, leave a message with one of the course/clerkship directors. It is important that students realize that their absence or tardiness negatively impacts a number of other people. Attendance, including tardiness, is part of the student's evaluation for professionalism. Negative evaluations may result in decreased grades and in severe cases, referral to the Student Evaluation and Promotion Committee.

## **Procedure for Notification of Absence**

### **Year 1/2**

If the student knows in advance of an upcoming legitimate absence, the online "Advance Request for Absence from Educational Activity(ies)" process should be followed as outlined below.

If the absence occurs due to an unforeseen emergency, the student should contact the course director and the Associate Dean for Student Affairs immediately to report the absence including the reason for the absence.

The implications for the absence (e.g., remediation, course grade adjustment, make-up exam, etc.) will be given to the student by the course director and final decisions regarding these actions shall rest with the course director.

The online "Request for Absence" process should be used for all absences, including post-illness absences, regardless of whether the student is requesting an absence from one or more classes or the entire day. Here is how it works.

- 1) Student completes online form: <https://apps.med.fsu.edu/absence>  
(Form will only work in Internet Explorer)
- 2) The form is routed to student affairs for approval then to appropriate Course Directors/Instructors
- 3) Course Directors will approve/deny request
- 4) Students can check on the status of the progress of the request by clicking on the "Pending requests" link, where they will be able to see if the instructor(s) has taken action on the form.  
(If the instructor has not taken action within 24 hours, students can contact him/her directly to let him/her know that the request is pending.)
- 5) The student will receive an email indicating whether the request has been approved/denied.

Students must include all the courses/activities they plan to miss on the requested day of absence (lecture, small groups, quiz, exam, OSCE, etc.) If students plan to be gone the entire day and fail to include an activity/class on the form, they will NOT be excused from that particular activity/class. It will be considered unexcused. It is the students' responsibility to ensure the form is filled out completely with all the courses/activities they will miss for that particular day.

If a student's request has been denied, the email will not indicate the reason nor indicate which instructor denied the request.

Some reasons that are likely to automatically disqualify an advance request are: exams, CLC sessions and OSCEs -- unless it is for extreme circumstances (illness, family emergencies, etc).

### **Year 3/4 Required Clerkships**

If the student requests an absence in advance, the "Advance Request for Absence from Educational Activity(ies)" form (Appendix B) should be completed, signed by the student and given to the Regional Campus Dean. Requests for excused absences from a required clerkship should be rare and made only in situations that cannot be rescheduled to occur during a scheduled time off or during an elective. An excused absence from a required clerkship may be allowed when it is determined by the Regional Campus Dean that the student has no alternative (see Fourth Year Scheduling Policies).

The Regional Campus Dean, after consultation with the Education Director and the Clerkship Director, will make the final decision regarding the student's request and give the student the implications for the absence (e.g., remediation, course grade adjustment, make-up exam, etc.). Final decisions regarding implications for the student's grade shall rest with the Education Director. The Clerkship Director will notify the clerkship faculty member of the decision. The form will be filed in the Office of Student Affairs at the regional campus.

If the absence occurs due to an unforeseen emergency, the student should contact the Clerkship Director and the Regional Campus Dean immediately to report the absence including the reason for the absence. The Regional Campus Dean, after consultation with the Education Director and the Clerkship Director will make the final decision regarding implications of the student's absence. The implications for the absence (e.g., remediation, course grade adjustment, make-up exam, etc.) will be given to the student by the Regional Campus Dean. Final decisions regarding implications for the student's grade shall rest with the Education Director. The Clerkship Director will notify the clerkship faculty member of the decision. The form will be filed in the Office of Student Affairs at the regional campus.

### **Year 4 Electives**

If the student requests an absence in advance, the "Advance Request for Absence from Educational Activity(ies)" form should be completed, signed by the student and given to the Regional Campus Dean. The Regional Campus Dean, after consultation with the Elective Director, will make the final decision regarding the student's request and give the student the implications for the absence (e.g., remediation, course grade adjustment, make-up exam, etc.). Final decisions regarding implications for the student's grade shall rest with the Regional Campus Dean, who will notify the Elective Director of the decision. The form will be filed in the Office of Student Affairs.



If the absence occurs due to an unforeseen emergency, the student should contact the Regional Campus Dean immediately to report the absence including the reason for the absence. The Regional Campus Dean, after consultation with the Elective Director, will make the final decision regarding implications of the student's absence. The implications for the absence (e.g., remediation, course grade adjustment, make-up exam, etc.) will be given to the student by the Regional Campus Dean. Final decisions regarding implications for the student's grade shall rest with the Regional Campus dean, who will notify the Elective Director of the decision. The form will be filed in the Office of Student Affairs.

### **Remediation Policy for Absences from Examinations, Quizzes, Small Group Sessions, Laboratory Sessions, Clinical Learning Center Sessions, Preceptor visits, and Clerkship Call**

The remediation policies for absences from examinations, quizzes, small group sessions, laboratory sessions and clerkship call are:

1. **POLICY ON MISSED EXAMINATIONS:** Students are required to take major in-term and final examinations. According to rules of the curriculum committee, a student can only be excused from an examination by a course/education director decision based on the personal situation of the student. The course/education director will determine the time of the exam make-up session. Also, according to the curriculum committee decision and the existence of the FSU-COM honor code, the student will be given the same examination given to the other students.
2. **POLICY ON MISSED QUIZZES:** Students are required to take scheduled and unscheduled quizzes in the courses. A student can only be excused from a quiz by a course director decision based on the personal situation of the student. The student must make arrangements with the course/education director to make up a missed quiz. Also, according to the curriculum committee decision and the existence of the FSU-COM honor code, the student will be given the same quiz given to the other students.
3. **POLICY ON MISSED SMALL GROUP SESSIONS, LABORATORY SESSIONS, CLINICAL LEARNING CENTER SESSIONS, PRECEPTOR VISITS, AND CLERKSHIP CALL:** The student should contact the course director, small group leader or education director for instructions on remediation of the missed session and material covered.

**To obtain an excused absence the student must contact the Office of Student Affairs who will initiate a process to determine whether the absence can be excused. This request must be submitted in a timely manner to allow the process to occur and a decision made for the student request. Emergency requests will also be handled by the Office of Student Affairs.**

### **Remediation Policy for Students Who Fail a Course**

Remediation of courses/clerkships will be planned and implemented by a combined decision of the Evaluation and Promotion Committee in collaboration with the course/education director.

### **Unexcused Absences**

It will be the responsibility of the course/education directors to clearly state in their respective course/clerkship syllabi the implications for having an unexcused absence from a scheduled educational or examination activity in a course or clerkship. *For BMS 6115, students with more than two such absences in the summer term will not receive academic credit for the course and a grade of “F” will be submitted to the Registrar. Students who have an unexcused absence from an examination or a quiz will lose the entire score (points) awarded for that examination or quiz, and the final grade for the course will reflect this loss.*

## Course Components

**Anatomy Laboratory:** The laboratory experience will consist of highly interactive, small group activities designed to integrate structure identification with anatomical relationships and clinical significance. A significant portion of the course will be devoted to a dissection lab (four, two hour sessions per week). Student lab teams will be divided into a red and blue team. The red and blue teams will alternate every other day in taking responsibility for the dissections. The “dissecting” team will study the human cadaver, and the “non-dissecting” team will study cross-sectional imaging and radiology of the entire body by anatomical regions.

*One member of each team (red and blue) will be assign as the team captain for the week. At the end of the lab period (5:00 p.m.), the team captain for the dissecting team will meet with the entire non-dissecting team and review the dissection completed that day. All items identified in bold print in the dissection guide should be shown to the “non-dissecting” team. These daily meeting are essential so that the teams are ready to trade assignments each day.*

The ability to recognize and understand anatomical relationships is essential in many aspects of the practice of medicine from performing a basic physical examination to the interpretation of radiographic images. The lectures, laboratory exercises, and independent study assignments will focus on the normal anatomy and common variations seen in the human body. Students are to work in their assigned teams as they study and review the material presented in the course. Exchange of information between the red and blue teams must occur so that all students are able to benefit from every laboratory assignment. The team members are responsible to see that the exchange of information occurs on a frequent basis.

**Students not actively dissecting during lab hours and assigned to study osteology, radiology and/or cross-sectional anatomy can do so in the study room adjacent to the anatomy labs or in their respective community areas.** The study room in the anatomy laboratory is equipped with models, skeletons, computers, anatomy software, a computer and LCD projector. The anatomy laboratories and student study rooms are available to students 24 hours a day, seven days a week.

**Lectures:** Lecturers will focus the content on major anatomical concepts and introduce clinical presentations aimed at stimulating active student participation. **The lectures are intended to be very interactive between students and faculty. In order for this type of dialogue to occur, the student must read the assigned material before attending a lecture in order to intelligently discuss issues or ask for clarification about a concept.** The lecture is not intended to present all information; students are expected to study information in the assigned text to supplement material presented in the lectures. The textbooks will be the benchmark for the level of detail examined upon for each anatomical region. The radiology component of the course will focus on the recognition of anatomic structures using various radiologic techniques.

**Weekly “Grand Rounds” - Clinical Presentation:** Each week will end with a clinical presentation which is planned to emphasize anatomical concepts covered during the week. The material presented may be included on the examinations. These sessions will emphasize the importance of anatomy in developing a differential diagnosis in the treatment of patients.

Date	Topic	Presenter
June 5 <sup>th</sup>	Spine and upper extremity	– R. Watson, M.D.
June 12 <sup>th</sup>	Upper extremity	– Jerry Latimer, P.T.
June 19 <sup>th</sup>	Lower extremity	- R. Watson, M.D. (Mlot)
June 26 <sup>th</sup>	Thorax, heart and lungs	– L. Granville, M.D.
July 10 <sup>th</sup>	Neck and Superficial Face	– open
July 17 <sup>th</sup>	Head and Neck	- R. Watson, M.D.
July 24 <sup>th</sup>	Abdomen	– J. Fogarty, M.D.
July 31 <sup>st</sup>	Pelvis and perineum	– M. Manting, M.D.

**Radiology & Cross-sectional Imaging:** **The objective of the radiology cross-section component of the course is not to train radiologists.** The objective is to enable students to apply their understanding of the anatomic relationship to interpret and recognize structures visualized by a variety of radiologic techniques.

**The lab is equipped with an ultrasound unit.** We will provide opportunities for all students to use an ultrasound unit to visualize anatomy on themselves and each other. This will be related to their anatomical study on the cadaver. Our goal is to provide a basic understanding of how ultrasound images are produced and how they compare to findings from dissections. Students will be able to download the imaging to share with students and faculty.

**Self-Study:** Blocks of time are planned each day for independent, self-directed use of faculty resources, educational materials such as videotaped demonstrations, interactive software, the Internet, and even textbooks.

**Available Resources:** The College of Medicine has a variety of textbooks and digital texts available to you at the library web site. The college also has made available the Gold Standard Multimedia web site <http://www.med.fsu.edu/library/gsm.asp>. You are encouraged to visit the Clinical Human Embryology, Cross-sectional Anatomy, Human Anatomy and Radiologic components of this site. You will find imaging and text references including self-testing components. A cross-sectional anatomy tutor will be available for you to study normal cross-sectional anatomy using the Visible Human data from the National Library of Medicine at: <https://mcintranet.med.fsu.edu/sites/courses/anatomy/default.aspx>.

**Assessment:** Student performance on all activities will result in an accumulation of points which will determine the student's status for the course and grades will be presented as; A, B+, B, C+, C, D, and F. The final grades are based on the total points accumulated in the course.

**Individual students can observe their scores in the course using the Blackboard web site under the Student Tools section and My Grades subsection. Grades are reported after all quizzes and unit examinations (written and laboratory examinations).**

The table below indicates the relative weightings for the components. A maximum of 100 points is possible.

## Determination of Grades

<b>Component</b>	<b>Total percent for each category</b>
<b>Written Unit Exams (60 questions each)</b>	
Unit 1 – Extremities and Back	<b>12</b>
Unit 2 – Thorax and Head/Neck	<b>12</b>
Unit 3 – Abdomen and Pelvis	<b>12</b>
<b>Laboratory Exams (60 questions each)</b>	
Unit 1 – Extremities and Back	<b>12</b>
Unit 2 – Thorax and Head/Neck	<b>12</b>
Unit 3 – Abdomen and Pelvis	<b>12</b>
<b>Mid-Unit Quizzes (20 questions each written and practical)</b>	
Unit 1 – Extremities and Back	<b>4</b>
Unit 2 – Thorax and Head/Neck	<b>4</b>
Unit 3 – Abdomen and Pelvis	<b>4</b>
<b>NBME Subject examination</b>	<b>16</b>
<b>TOTAL</b>	<b>100</b>

### Grading scale for the course

<b>Grade</b>	<b>High %</b>	<b>Low %</b>
A	100	90
B+	89	87
B	86	80
C+	79	77
C	76	70
D	69	65
F	<64	

### Important grading issues

1. To pass the CA course, students must make at least 70% overall in the course.
2. Individual grades are reported for the permanent record as either A, B+, B, C+, C, D, and F. Exact scores are only used to determine the grade category.

### Written Exams

**Unit Examinations:** The unit examinations are 24% of the value of the final grade. The unit examinations include both a written and laboratory practical component. The two components are of equal value. Two components (written and practical) are given on the same day; both components have 60 test items. The written examination questions will be simple multiple-choice questions (select the best answer). Many written questions will emphasize the clinical application of anatomy and will often be based on clinical scenarios. Information from all course activities is considered testable material for the written exams. The unit examination will not have questions from previous units.

Students will **NOT** be allowed to keep their unit examinations. **The final examination is not comprehensive.** The approximate percentages for the sources of the written exam questions are as follows:

1. Lecture-guided topics and clinical presentations, 75-85%
2. Assigned reading not lectured upon, 5-10%
3. Integration of X-sectional and radiographic anatomy, 5-10%

**Mid Unit Quizzes:** There will be three quizzes, which will occur at approximately the mid-point of each unit. The quizzes will include a written and practical component. For the practical, students will work in teams to identify the structures on the cadavers and radiographic images.

**NBME Subject Examination:** This is a **comprehensive examination** testing knowledge in anatomy and embryology. The score on the Subject Examination will be adjusted so 50<sup>th</sup> percentile is equal to the class mean on the other examinations in the course. This examination will count for 16% of the final grade

### **Laboratory Assessment**

**Laboratory Unit Exams:** The primary evaluation of the student's anatomical knowledge over the laboratory activities will be through three unit practical examinations during the course. The practical examinations consist of 60 questions consisting of basic identification and association type questions. Approximately 40 structures are tagged on the cadavers, models and skeletons, and the content level is comparable to most of the **BOLDED TEXT** structures in the dissector. About 10 questions will test knowledge about normal radiology and cross-sectional anatomy. The practical examinations are not comprehensive.

**Evaluation of teamwork of red and blue lab activities:** You will complete a peer-evaluation of your group members' participation in both the red and blue teams activities. You will also do a self-evaluation of your own performance.

# Required/ Recommended Textbooks & Atlases

Summer 2009

Title, Publisher, ISBN	Authors	Edition	Required/ Optional
Essential Clinical Anatomy, Lippincott Williams and Wilkins, ISBN: 9780781762748	Moore, Keith, L., and Agur, Anne, M. R.	3rd 2006	Required
Grants Dissector, Lippincott, Williams & Wilkins, ISBN: 9780781774314	Tank, Patrick W..	14 <sup>th</sup> 2008	Required
Langman's Essential Medical Embryology, Lippincott Williams and Wilkins, ISBN: 9780781755719	Sadler, T. W.	1 <sup>st</sup> 2004	Required
<b>If you have not had any previous embryology courses, you may want to obtain the text listed below instead of the essentials of embryology text.</b> Langman's Medical Embryology, Lippincott Williams and Wilkins, ISBN:9780781790697	Sadler, T. W.	10 <sup>th</sup> 2006  Or 11 <sup>th</sup> 2009	Alternate required
Imaging Atlas of Human Anatomy, Mosby, ISBN: 9780723432111 <b>You can also get the following if you like working with the radiology imaging on your computers- Imaging Atlas of Human Anatomy – CD ROM ISBN-13: 9780323034111</b>	Weir, J., and Abrahams, P.H.  Weir, J., and Abrahams, P.H.	3 <sup>rd</sup>  August 2005	Required
<b><u>Choose one of the following atlases:</u></b>			
(a) Grant's Atlas of Anatomy, Lippincott, Williams & Wilkins, ISBN: 9780781770552	Agur, A.M.R. and Lee, M.J.	12 <sup>th</sup> 2008	More "accurate" illustrations
(b) Atlas of Human Anatomy, Icon Learning Systems/Elsevier, ISBN: 9781416033851	Netter, F.H.	4 <sup>th</sup> 2008	Most popular among students
(c) Color Atlas of Anatomy: A Photographic Study of the Human Body, Lippincott, Williams & Wilkins, ISBN: 9780781790130	Johannes W. Rohen, Chihiro Yokochi and Elke Lutjen-Drecoll	6 <sup>th</sup> 2006	Color photographic atlas
<b><u>Other reference texts recommended, but not required</u></b>			
Clinically Oriented Anatomy - Lippincott Williams & Wilkins, ISBN: 9780781775250	Keith L. Moore, Arthur Dalley & Anne Agur	6 <sup>th</sup> 2009	Recommended Reference Book
McMinn's Clinical Atlas of Human Anatomy with DVD, 6th Edition, Elsevier Science Limited, ISBN: 978032303654	Abrahams, P.H., Johannes Boon, and Jonathan Pratt	6 <sup>th</sup> 2008	Color photographic atlas

**Other required items for the course:**

What else do you need for the course?

1. dissecting kit (optional – we supply basic tools)
2. lab coat or scrubs
3. eye protection – this can be glasses or safety glasses

Optional items you might purchase that will help you in the laboratory

1. plastic baster for each table to remove fluid from cadaver cavities
2. plastic apron

The College provides latex gloves for the laboratories

**Assessment of the Course and Faculty Evaluation:**

Mid Course Evaluations: A random sample of students will be asked to participate in a Mid-Course evaluation by the Office of Medical Education. This will assist the course director in being able to make any mid course adjustments based on the student feedback.

End of Course Evaluation. A random sample of students will be required to complete an evaluation of the course administered by the Office of Medical Education at the end of the course. Student evaluations will be kept anonymous to the course director. Comments are of particular interest for improvement of the course. Students must complete the evaluation in order to have their course grade recorded.

Evaluation of Faculty – Students will be asked to complete the FSU SPOT/SUSSAI faculty evaluation forms for major course faculty and the FSU COM faculty evaluation form.

**Student evaluations of the course, lecturers, peers, and self are required in order for grades to be released to the FSU Registrar.**

<b>Order of Weekly Content Areas</b>	
<b>WEEK</b>	<b>REGION</b>
1	Back & Upper Extremity
2	Upper Extremity
3	Lower Extremity
4	Unit 1 Exams / Thorax
5	Thorax / Head & Neck
6	Head & Neck
7	Head & Neck
8	Unit 2 Exams
9	Pelvis & Perineum
10	Pelvis & Perineum
11	Unit 3 & NBME Exams



# Anatomy Laboratory Rules and Protocol - 2009





## Protocol for the FSU-COM Human Anatomy Laboratory

Dr. Lynn Romrell is the former Executive Director (served for 25 years) and is currently the representative of Florida State University College of Medicine on the Anatomical Board of the State of Florida. As a member of the Anatomical Board, he is responsible to ensure that dignity is always shown for the remains of the individuals who will their bodies to the State of Florida for the education of medical students and other students in the health care disciplines.

### Lab activity

1. Access. The anatomy lab will be open 24 hours a day, 7 days a week during the semester. After hours, the anatomy lab can be accessed by the card reader.
2. All students, faculty and approved guests must sign “Pledge of Respect” form.
3. Authorized Personnel. Only COM medical students, faculty and other health-related personnel and facility workers are permitted access to the lab. FSU badges are the best form of I.D. All unauthorized persons will be told to leave immediately. After scheduled course hours, campus police regularly patrol the area and will escort trespassers from the lab and report the person(s) responsible for the unauthorized entry to appropriate authorities for corrective purposes. Immediate family members and health-oriented guests of medical student's must first receive authorization from Dr. Romrell before being allowed entry into the lab. The lab doors should not be opened for anyone "knocking" other than for an authorized person (i.e. student forgetting their card). Visitation is **NOT** permitted during scheduled dissection periods. During any visit of authorized guests, they should avoid all opened cadaver tanks. Minors will **NOT** be admitted except as part of an organized tour. It is the responsibility of all authorized personnel, faculty and students, to enforce these rules. It is the LAW that donors to the Florida Anatomical Board are guaranteed the respect and confidentiality in the spirit by which their gift was donated to our institution. Any disrespect to the cadavers will be dealt with accordingly.
4. According to Florida law, removal of any cadaver parts, whatsoever, from the laboratory is a crime of grave robbery.
5. NO photographs are to be taken of the cadavers or anything in the laboratory, except for images necessary for cadaver autopsy reports.
6. NO eating, drinking or smoking is allowed in the laboratory or amphitheater.
7. NO radios or tape players are allowed in the laboratory, unless used with earphones.

8. Personal protection in the lab:
  - Do not wear sandals or open toe shoes in the lab.
  - Recommend wearing scrubs or lab coats. Some prefer an additional plastic apron for protection from fluids.
  - Recommend wearing of gloves.
  - Wear glasses or protective goggles.
  - Material Safety Data Sheets of chemicals used in the laboratory are available in the lab.
  - Use dust mask when using electric bone saws.
9. First aid for cuts in the lab: First aid kits are available in the lab
  - Remove gloves and wash cut area.
  - Cover with sterile bandage.
  - Put on clean gloves.
10. All lab coats, dissecting equipment and books should be stored in the locker room or in the cadaver tank. Anything left out after regular lab sessions will be thrown out during daily lab cleaning. **Do not wear dissection clothing or gloves outside of the anatomy laboratory.**
11. Skeletons are available in the lab. Do not remove them from their stands or take them apart.
12. Disarticulated bones are also available, and should not be removed from the lab. Report any broken bone specimens to a faculty member for repair/replacement.
13. The antiseptic soap for washing hands is located on the sinks and locker rooms.
14. **Rule to Remember** No not try to catch a dropped tool or retrieve a tool dropped in the tank. In case of injury in the lab during regular lab sessions, notify a faculty member. If an injury occurs after regular lab hours, go to the emergency room.

**Lab waste containers:** There are three types - locate them, learn them, and use them correctly. These are emptied by three different disposal services, who refuse to empty incorrectly parceled waste.

- Type 1. Red-bagged buckets located under each cadaver table. For skin and fat only.
- Type 2. Regular waste receptacles located around the lab. For waste paper, gloves, etc.
- Type 3. Red Sharps containers located around the lab. For scalpel blades only.

**Anatomical Models:** All models should be handled with clean hands or clean gloves only. There will be study areas for looking at the models.

## **Dissection Tank and Cadaver**

1. Each group is responsible for keeping the cadaver table clean.
2. The cadaver is covered with a cloth material. Always cover the cadaver with this cloth when leaving the lab. Do not remove the toe or ear tag. This is used to properly dispose of the human tissue.
3. There is one plastic bottle at each table. Fill it only with a wetting solution located in the large crocks at the perimeter of the lab. Use this daily to wet down the cadaver/cloth upon leaving the lab.
4. There is one sponge at each table. It is the responsibility of each group to keep the cadaver and cadaver tray clean.
5. If a dissecting tool falls into the bottom of the cadaver tank, do not retrieve it. Replacement tools can be found in the blue bins outside the female locker room. They are compliments of previous classes.
6. If there is a problem or concern about your cadaver (odor, mold, fixation) or tank (broken mechanism) contact Dr. Romrell.

**Keeping your cadaver moist and in good condition and your cadaver table clean, results in a more pleasant lab experience and successful dissection exercises.**

**Tool Box**

A plastic toolbox containing several special dissection tools will be checked out to each group working at a table at the beginning of the course. That group is responsible for the tools and the return of the complete set in clean condition at the end of the course. Failure to do so will result in the withholding of the course grade and prevention of registration for the next term. There will be a charge to the group for any lost/unreturned tools. (PRICE LIST ENCLOSED BELOW).

**TOOLS GIVEN TO EACH TABLE ARE TO  
BE RETURNED  
AT THE END OF THE COURSE  
IN CLEAN CONDITION**

---

**TOOL BOX REPLACEMENT PRICE LIST**

Rib Shears -----	\$72.00
Bone Shears -----	\$50.00
Bone Chisel -----	\$26.00
Bone saw -----	\$60.00
Rawhide Mallet -----	\$40.00
Periosteal Elevator -----	\$15.00
Tool Box -----	\$15.00

UNRETURNED, LOST, OR BROKEN TOOLS WILL RESULT IN WITHHOLDING OF GRADES AND FUTURE REGISTRATION UNTIL EITHER RETURNED/PAID FOR BY RESPONSIBLE DISSECTION TABLE/GROUP.

# Clinical Anatomy, Embryology and Imaging Examination Protocol

## **FOR WRITTEN EXAMS:**

The course directors should inform all students, **that if they were 15 minutes late to an exam, it would be considered an unexcused absence.** The student(s) will have to contact the Student Affairs Office.

## **FOR PRACTICAL EXAMS:**

All students must arrive promptly at their assigned time or they **will not** be permitted to take the practical.

## **A course coordinator or the course director will announce the following items to the students.**

1. Students will enter the examination room ten-minutes before the scheduled time of the examination(s).
2. Students will be instructed to write their name on the test and answer sheet, and bubble in their name and personal identification number before starting the examination(s).
3. **All answers must be recorded on the answer sheet in order to receive credit.**
4. If a restroom break is necessary, take your test and answer sheet to the proctor(s).
5. All Question and Answer sheets will be collected at the end of the examination by the proctor.
6. **Warnings:**
  - A. Students are given a 30-minute warning and will be reminded that all answers must be recorded on the computer answer sheet in order to receive credit, before the end of the exam(s).
  - B. Students are given a 10-minute warning, before the end of the exam(s).
7. At the end of the exam, all students will be instructed to:
  - A. Put their pencils down
  - B. Take their answer sheet and in some cases their test to the proctor stationed in the foyer.
  - C. Failure to comply is considered irregular behavior and will be noted.
8. **BRING YOUR SHARPENED PENCILS**

March 27, 2009  
Op-Ed Contributor

# Dead Body of Knowledge

By CHRISTINE MONTROSS

Providence, R.I.

AT the risk of sounding like a fuddy-duddy, I would like to say that sometimes, medical imaging isn't all it's cracked up to be.

As a resident in psychiatry, I depend on the technology to treat my patients. From countless computers in the hospital's hallways and at nurses' stations, I call up images of the people I treat: the black, white and gray CT scans of their skulls, the nuanced M.R.I.'s of their spinal cords and ligaments, the rotating Spect scans that show in three dimensions how well — or how poorly — blood flows through their brains. I can leave the room of an 89-year-old woman who has begun picking imaginary bugs out of the air, look into a screen, and see the tumor that is causing her delirium.

Now however, many medical schools are beginning to argue that imaging technology has improved to the point where it should be used in place of the dissection of human cadavers as the central tool of instruction for young doctors-to-be. This is a mistake. No matter how detailed and versatile they become, computer images can never provide the indelible lessons that novice doctors learn from real bodies.

Nearly every medical student in America begins his career by entering a room full of cadavers and taking one of them apart, layer by layer, piece by piece. Doctors have shared this experience for centuries, ever since Vesalius, Da Vinci and Michelangelo defied religion and government, stole bodies from graves and churches, and dissected by candlelight in an audacious pursuit of knowledge about the human body. The process is what you would expect: messy and smelly, tedious and time-consuming, emotionally and physically difficult. It is at times awe-inspiring, and at other times profoundly upsetting. It is also, for the medical schools, very expensive. Even though cadavers are donated, it can cost more than \$2,000 to prepare a body for dissection.

So medical schools are beginning to re-evaluate their anatomy curriculum in the face of the perhaps inevitable argument: Why not reduce, or eliminate altogether, the burdensome cost of dissecting cadavers and replace it with this new and astounding technology? The computers and software — a considerable expense, but one that need be incurred only once — allow students to study images of the body from every angle and on every plane. They can peel away the muscle on a virtual leg to see the bone beneath, then click a different button, reattach the muscle and see how the limb moves.

Computers can show things that still and lifeless cadavers cannot — blood pumping in real time through the heart's chambers, for instance. And it is far easier to visualize nerves and vessels when they're color-coded on a computer than it is to pick through the indistinguishable gray-green tangles inside a formalin-embalmed cadaver. Because all of this can be done anywhere on any screen, students can study anatomy in this way in the library, in their apartments or, surely someday if not already, on their iPods and cellphones.

At the end of the academic year, there would be no need for old cadavers to be cremated, for new human donors to be found, for deep cleaning the anatomy lab. Come September, the whole system would simply reboot.

But what kind of doctors will they be, these students who have never experienced human dissection? They would have been denied a safe and more gradual initiation into the emotional strain that doctoring demands.

Someday, they'll need to keep their cool when a baby is lodged wrong in a mother's birth canal; when a bone breaks through a patient's skin; when someone's face is burned beyond recognition. Doctors do have normal reactions to these situations; the composure that we strive to keep under stressful circumstances is not innate. It has to be learned. The discomfort of taking a blade to a dead man's skin helps doctors-in-training figure out how to cope, without the risk of intruding on a live patient's feelings — or worse, his health. We learn to heal the living by first dismantling the dead.

The dissection of cadavers also gives young doctors an appreciation for the wonders of the human body in a way that no virtual image can match. It is awe-inspiring to hold a human heart in one's hands, to appreciate its fragility, intricacy and strength.

But most important, the cadavers on their stainless steel tables are symbols of altruism to medical students: They are reminders of how great a gift one can give to a stranger in the hopes of healing. Isn't that the most fundamental lesson we want our doctors to carry to the bedsides of their patients?

Christine Montross, a resident in psychiatry at Brown University, is the author of [“Body of Work: Meditations on Mortality From the Human Anatomy Lab.”](#)