Course Syllabus

Course Number:  RADS 4733    3 credits    Fall 2011

Course Title: Sectional Anatomy

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Course Overview:
This course is a study of human anatomy viewed in sectional planes. Students will compare planar anatomy to sectional anatomy and recognize anatomical structures in computed tomography and magnetic resonance imaging. Studies will include the cranium, brain, spine, neck, chest, abdomen, pelvis, and extremities.

Course Objectives:
Radiologic technologists should demonstrate increased awareness of how the human body is arranged three-dimensionally. This course provides opportunities to recognize relationships between standardized anatomical structures prior to working with variations found in "live" patients.
Upon completion of this course, a student will be able to:

- Recognize anatomic structures in various planes.
- Relate planar anatomy to line drawings of related cross-sectional anatomy.
- Describe the spatial relationship of one structure to another.
- Differentiate between the appearances of anatomic structures among different modalities such as Computed Tomography (CT) and Magnetic Resonance Imaging (MRI).
- Identify the strengths and weaknesses of each imaging modality for identifying specific pathological processes.

Textbooks:


These textbooks are available from the MSU Bookstore. A study guide by the author is available to complement this text. Review the Mosby website for additional information on supplemental books. The pocket guide is NOT required for this course.

The APA Manual is necessary to prepare the Reference List for the Annotated Bibliography.

Online Resources

The Discussion Board feature is an open feature of this Blackboard (formerly Blackboard (formerly WebCT))-based course. Students are encouraged to share links to valuable online resources with one another through the discussion board. Participation in the discussion board is voluntary and will not contribute to the course grade.

In addition to the example listed below, there is a more extensive list of resources available at MSU's Radiologic Sciences website:

http://hs2.mwsu.edu/radsci/index.asp

The National Library of Medicine: The Visible Human Project.


- The Visible Human Project is an outgrowth of the NLM's 1986 Long-Range Plan. It created complete, anatomically detailed, three-dimensional representations of the male and female human body by correlating
transverse CT, MR, and cryosection images of representative male and female cadavers at one-millimeter intervals.

Technology Requirements

<table>
<thead>
<tr>
<th>Hardware</th>
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</thead>
<tbody>
<tr>
<td>• Pentium or equivalent processor</td>
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<tr>
<td>• 100 Megabytes of free hard drive space</td>
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<tr>
<td>• Enough RAM to open an Internet browser and an e-mail program at the same time</td>
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<tr>
<td>• Modem or network to the Internet at 29.8K or faster</td>
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</table>

Because of the large number of graphics to be studied, the following is recommended:

• Set the computer resolution to 800 x 600 using the "Appearance" commands in the "Control Panel".
• Set the number of colors available on the monitor to "High" or "Thousands" (also in Appearance in the Control Panel), and
• Check with the Internet service provider if the download times seem excessive.

<table>
<thead>
<tr>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Netscape 4.0 or higher, Internet Explorer 4.01 or higher (Java support required).</td>
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<tr>
<td>2. Personal e-mail account and software</td>
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<tr>
<td>3. Students should have access to a reliable e-mail account and the appropriate software to use it.</td>
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<tr>
<td>4. Students should practice with the software so that they are able to send attachments comfortably. Occasionally students may have questions about specific diagrams, and it will be easier to ask questions if they are accompanied by the specific illustration.</td>
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<tr>
<td>5. Graphics software capable of opening .gif and .jpg files.</td>
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Teaching Strategies:
Independent reading assignments, study guide, Blackboard (formerly Blackboard (formerly WebCT)) unit quizzes, annotated bibliography, and Blackboard (formerly Blackboard (formerly WebCT)) final examination.
Evaluation:
Blackboard (formerly Blackboard (formerly WebCT)) Unit Quizzes 25%
Annotated Bibliography 25%
Proctored Blackboard (formerly Blackboard (formerly WebCT))
Comprehensive Final Exam 50%

Grade Scale:
A = 100 - 90
B = 89 - 80
C = 79 - 70
D = 69 – 60
F = 59 and below

PLEASE NOTE
By enrolling in this course, the student expressly grants MSU a “limited right” in all intellectual property created by the student for the purpose of this course. The “limited right” shall include but shall not be limited to the right to reproduce the student’s work product in order to verify originality and authenticity, and for educational purposes.

Communication with Instructor:
Contact information for the instructor is listed at the beginning of this syllabus. Email is the preferred mode of communication. It is critical that students report all email changes immediately to the instructor. The instructor will respond or at least acknowledge email messages from students within a maximum of five (5) business days when MSU is in session. Beyond standard university holidays and breaks, the instructor will notify students of any extended periods of time when email contact is not practical (professional meetings, travel, etc)

Attendance:
This is an online course and as such there are no mandatory sessions. However, the student should be vigilant in checking email and logging onto Blackboard (formerly WebCT). Regular checks will insure that messages from the instructor are received in a timely manner. This course is on a schedule that will be strictly adhered to (see table below).

CLASS ACTIVITIES AND ASSIGNMENTS
ALL STUDENTS ENROLLED IN RADS 4733 COURSE MUST COMPLETE ALL COURSE REQUIREMENTS.
Students can proceed through the course content at their own pace within the boundaries set by the Course Schedule and the MSU Academic Calendar. Each unit has a quiz. See the Course Schedule for specific information about activities
and due dates. The first two units (cranium & brain) are typically considered the most challenging.
Units

RADS 4733 consists of seven units of instruction.

- **Unit 1**: Cranium
- **Unit 2**: Brain
- **Unit 3**: Spine and Neck
- **Unit 4**: Thorax
- **Unit 5**: Abdomen
- **Unit 6**: Pelvis
- **Unit 7**: Extremities

Students should complete the reading assignments, review the study guides, answer the objectives, and review any Internet resources, before attempting the unit quizzes. See the Course Schedule at the end of this syllabus for specific information about unit quiz release dates.

The illustrations in the text are orientated in the same direction as CT and MR scans. The course includes images that are coronal (front to back), sagittal (side to side), as well as axial or transverse (top to bottom). These should be easy to differentiate.

- Axial or transverse planes run parallel to an imaginary plane that divides the body into top and bottom halves.
- Students should keep in mind that sectional images are viewed as if the patient is lying on a table and the observer is standing at the patient’s feet and looking “up” at the exposed slice of the body. (The patient’s left side will be on the viewer’s right field of view) This is the most common image presentation.
- Coronal planes run parallel to an imaginary plane that divides the body into anterior and posterior halves,
- Sagittal planes run parallel to an imaginary plane that divides the body into left and right halves,

While the text is more or less self-explanatory, the individual units in the course begin with diagrams relating to planar anatomy. These diagrams are included to assist the student in becoming familiar with the relationship between the anatomical structures when viewed in cross-sectional orientation.

**Blackboard (formerly WebCT) Unit Quizzes - 25%**

When a student has reviewed a unit and is ready for the quiz, he or she will log on to Blackboard (formerly WebCT) and open the quiz. The release dates for the seven unit quizzes are posted on the schedule at the end of the syllabus. Each quiz will be available from the release date through the duration of the course.

If students have technical difficulties during a quiz, they should use the “Help” link at the top toolbar in Blackboard (formerly WebCT), contact the MSU
Information Systems Support Staff, and send an email to the course instructor explaining what happened.

If a student finds a faulty quiz test item or believes that a quiz question has been scored incorrectly, he or she should send an email to the course instructor that includes the following:

- Unit Quiz Number (I –VII)
- Question Stem
- Answer Scored as Correct by the Computer
- Answer the Student Thinks Should be Correct
- Rationale Supporting Why the Student’s Answer is Correct
- Page numbers must be included when referencing the textbook in a rationale

After reviewing the case, if the course instructor thinks a revision is justified, the student’s quiz score will be revised to reflect the additional points and the test bank will be updated. It may take several weeks for the student to receive a response because the instructor works on batches of questions for a particular quiz at a time.

**Annotated Bibliography - 25%**

An annotated bibliography is a list of resources along with a summary and evaluation of the usefulness of each resource. The goals of this assignment are:

- For the student to perform scholarly research about the role of sectional imaging in Radiologic Sciences,
- For the student to develop baccalaureate writing skills about a professionally-related subject,
- For students to practice using peer-reviewed or scholarly journals rather than newsmagazines or popular press news items as research sources, and
- For students to develop skills generating a Reference List in appropriate APA format.

Each student will create a five (5) page annotated bibliography based on at least three (3) PEER-REVIEWED or SCHOLARLY journal articles that refer specifically to the role of sectional anatomy in diagnosis of a particular pathology. For example, the student may summarize three journal articles that describe the effectiveness of MRI scanning for staging of Alzheimer’s Disease.

Examples of acceptable peer-reviewed journals are listed on [http://www.rtstudents.com/radiology/radiology-journals.htm](http://www.rtstudents.com/radiology/radiology-journals.htm)

Examples of sources that are NOT acceptable include newsmagazines such as: *RT Imaging, RT Advance*.

**FORMAT FOR BIBLIOGRAPHY**

- Page One: MSU Radiologic Sciences Standard Cover Page (see Blackboard (formerly WebCT) for link)
• Page Two: Summary #1. The student will write the title of the article at the top of the page, followed by the summary of the article (approx 200 words or less).
  o The summary will describe the main points of the article, describe the role of sectional imaging, describe whether that procedure is done in the student’s clinical facility, and describe the student’s impression of the usefulness of the article for other technologists.
• Page Three: Summary #2. same process as #1
• Page Four: Summary #3. same process as #1
• Page Five: Reference List – in APA format

For more information about writing annotated bibliographies:
  • http://www.library.cornell.edu/olinuris/ref/research/skill28.htm
  • http://library.umcrookston.edu/annotate.htm
  • http://owl.english.purdue.edu/handouts/general/gl_annotatedbib.html

The Annotated Bibliographies are due to the instructor as Microsoft WORD email attachments on or before the deadline indicated at the end of the syllabus. The online pathology reports must:
  • Be saved in Microsoft WORD format. The instructor will not accept Microsoft WORKS or WordPerfect files.
  • Be typed and double-spaced
  • Be written at the baccalaureate level. Grammar (including spelling) and organization count in the grade so be sure to proofread work. Use complete sentences.
  • Be submitted on time. Points will be deducted from late submissions.
  • Use CORRECT current APA format to cite references. If a student does not have an APA Manual, HE/SHE SHOULD GET ONE TO BE SURE THE CORRECT FORMAT IS BEING SUBMITTED.

Comprehensive Final Exam - 50%

The comprehensive proctored final exam will be administered using Blackboard (formerly WebCT). Each student must have a proctor and test site approved by the course instructor before taking the exam. **Students are not allowed to print the final exam. The Final exam will be available according to the course schedule and will be closed according to the schedule as well. Late submissions will NOT be accepted.**

Proctor Guidelines and the Proctor Application form are available from Blackboard (formerly WebCT). The MSU Radiologic Sciences department now uses a standardized protocol and proctor application.

Students must provide the proctor with the Proctor Guidelines. Students should fax the completed proctor application to the course instructor (Fax Number 940-397-4845) by the scheduled deadline on the Course Schedule at the end of this syllabus. Points may be deducted from the final course score if the proctor application is not submitted before the due date.
TENTATIVE COURSE SCHEDULE

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
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<tbody>
<tr>
<td>August 20</td>
<td>Unit 1 Quiz Open - Cranium</td>
</tr>
<tr>
<td>August 20</td>
<td>Unit 2 Quiz Open - Brain</td>
</tr>
<tr>
<td>August 20</td>
<td>Unit 3 Quiz Open - Spine &amp; Neck</td>
</tr>
<tr>
<td>August 20</td>
<td>Unit 4 Quiz Open - Thorax</td>
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<tr>
<td>August 20</td>
<td>Unit 5 Quiz Open - Abdomen</td>
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<tr>
<td>August 20</td>
<td>Unit 6 Quiz Open - Pelvis</td>
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<tr>
<td>August 20</td>
<td>Unit 7 Quiz Open- Extremities</td>
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<td>September 30</td>
<td>Proctor Application Due</td>
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<tr>
<td>October 18</td>
<td>Annotated Bibliography Due.</td>
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<td></td>
<td>Comprehensive Final Exam Opens</td>
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<tr>
<td>December 3, 2011</td>
<td>The Final exam will closed at</td>
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<td></td>
<td>11p.m.* December 3, 2011</td>
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*Note: These are Central Times

Honor System:
RADS 4733 adheres to the MSU Code of Conduct. In particular, academic dishonesty, however small, creates a breach in academic integrity. A student’s participation in this course comes with the expectation that his or her work will be completed in full observance of the MSU Code of Student Conduct. A student should consult the current Student Handbook for answers to any questions about the code.

Many components of RADS 4733 are designed to be highly interactive with students helping each other learn. Students are encouraged to take full advantage of many resources available including online Blackboard (formerly WebCT) course resources, Internet sites, other textbooks and journals, faculty, and peers when studying. This interactive collegial learning environment is conducive for life-long learning.

Specific components of RADS 4733 are designed to represent the efforts of each student INDIVIDUALLY and are NOT to be shared or copied (plagiarized) from other sources. These components include the Blackboard (formerly WebCT) Unit Quizzes, the Annotated Bibliography, and the Blackboard (formerly WebCT) Comprehensive Final Exam. When students submit their efforts for grading, they are attesting they abided by this rule.

Special Needs:
In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable adjustments in its policies, practices, services,
and facilities to ensure equal opportunity for qualified persons with disabilities to participate in all educational programs and activities.

The Office of Disability Services (ODS) provides information and assistance, arranges accommodations, and serves as a liaison for students, instructors, and staff. The ODS has assistive devices such as books on tape, recorders, and adaptive software which can be loaned to qualified individuals. A student/employee who seeks accommodations on the basis of disability must register with the Office of Disability Services in the Counseling Center, Clark Student Center Room 108. Documentation of disability from a competent professional is required.

Individuals with grievances related to discrimination or lack of accommodation on the basis of a disability are encouraged to resolve the problem directly with the area involved. If the matter remains unresolved, advice and/or assistance will be provided by the Office of Disability Services for resolution. The grievance procedure may be found in the Student Handbook and Activities Calendar.

The Director of the Counseling Center serves as the ADA Coordinator and may be contacted at (940)397-4618, TDD (940)397-4515, or 3410 Taft Blvd., Clark Student Center Room 108.