**ESSEX COUNTY COLLEGE**

**Nursing and Allied Health Division**

**RTC 106 – Radiologic Positioning Principles II**

**Course Outline**

**Course Number & Name:**  RTC 106 Radiologic Positioning Principles II

**Credit Hours:**  4.0 **Contact Hours:**  4.0 **Lecture:** 4.0 **Lab:**  3.0 **Other:**  N/A

**Prerequisites**:  Grade of “C” or better in RTC 101

**Co-requisites**: RTC 107 and RTC 108 **Concurrent Courses:** None

**Course Outline Revision Date:**  Fall 2011

**Course Description**: This course is a continuation of RTC 101.  Instruction is provided in radiographic positioning of the vertebral column, pelvic girdles, and bones of the thorax. Students are taught radiographic procedures using contrast media. Lecture is supplemented with demonstrations and opportunities for students to practice the skills in the radiographic room. Critiques of radiographic films are conducted in the classroom/laboratory.

**Course Goals**: Upon completion of this course the student radiographer will be able to:

1. identify all pertinent anatomy of the hip, pelvis, boney thorax, vertebral column, GI, biliary, and GU tracts, and female reproductive system;

2. identify all pertinent positioning for the hip, pelvis, boney thorax, vertebral column, GI, biliary, and GU tracts, and female reproductive system with proper contrast media selection; and

3. determine proper technique, IR selection, and central ray position for all radiographic positions, patients, body habitus, and pathology situations.

**Measurable Course Performance Objectives (MPO)**: Upon successful completion of this course, students should specifically be able to do the following:

1. Identify all pertinent anatomy of the hip, pelvis, boney thorax, vertebral column, GI, biliary, and GU tracts, and female reproductive system:

1.1 *identify on a radiograph and/or diagram the anatomy of the following: boney thorax including ribs and sternum; hip joint and pelvic girdle; cervical, thoracic, and lumbar regions of the vertebral column; curvatures of the vertebral column; and GI, biliary, GU, and female reproductive tracts;* and

1.2 *define and identify types of joints and articulations found in the vertebral column and hip/pelvic girdle*

**Measurable Course Performance Objectives (MPOs)** (continued):

2. Identify all pertinent positioning for the hip, pelvis, boney thorax, vertebral column, GI, biliary, and GU tracts, and female reproductive system with proper contrast media selection:

2.1 *identify and demonstrate proper positioning for the following: boney thorax including ribs and sternum; hip joint and pelvic girdle; cervical, thoracic, and lumbar regions of the vertebral column; and GI, biliary, GU, and female reproductive tracts;* and

 2.2 *demonstrate the ability to prepare and administer appropriate contrast media when applicable*

3. Determine proper technique, IR selection, and central ray position for all radiographic positions, patients, body habitus, and pathology situations:

3.1 *accommodate technique and positioning modifications for body habitus;* and

3.2 *accommodate technique and positioning for trauma, pediatric, and geriatric procedures*

**Methods of Instruction**: Instruction will consist of lectures, class discussions/participation, PowerPoint slide shows, class activities, radiograph review, and laboratory activities.

**Outcomes Assessment:** Test and exam questions are blueprinted to the course objectives which are based on the minimum standards required by the American Radiology of Radiologic Technologists (ARRT) and the American Society of Radiologic Technologists (ASRT) suggested course curriculum. Note: Tests and exams are primarily structured in multiple-choice formats in conjunction with the ARRT exam. Also, checklist rubrics may be used to evaluate students for the level of mastery of course objectives.

**Course Requirements:** All students are required to:

1. Read the textbook and do the suggested homework problems in a timely manner.

2. Attend and be an active participant in all classes.

3. Take tests/exams in class and adhere to the test/exam schedule.

4. Turn off cell phones while in class.

5. Remain in the classroom during the entire class period.

6. Earn a “C” or better to pass this class. Students who do not earn a “C” or better will be required to withdraw from the Radiography Program as per program policy.

**Methods of Evaluation:** Final course grades will be computed as follows:

 **% of**

**Grading Components final course grade**

* 4 or more Tests (dates specified by the instructor)  50%

Tests will be administered regularly throughout the semester to test student mastery of course objectives.

* **Laboratory Competency (20) 20%**

The laboratory competency assessment, in which student performance will be rated by a laboratory competency rubric, will provide evidence of the extent of student achievement of some course goals. (See Required Laboratory Competencies on page 6.)

* **Midterm Exam** (date specified by the instructor)  **10%**

The midterm exam format may consist of multiple choice, short answer, and true/false questions and will include material from the readings, homework, lectures, and labs covered throughout the semester. The midterm exam will test the students’ mastery of course objectives and synthesis of course material covered from the beginning through the first half of the semester.

* **Final Exam** **20%**

The final exam format may consist of multiple choice, short answer, and true/false questions and will include material from the readings, homework, lectures, and labs covered throughout the semester. The final exam will test the students’ mastery of course objectives and synthesis of course material covered throughout the entire semester.

Note**: Laboratory Competency** includes all 20 required simulated laboratory competency evaluations. Students failing a competency will be remediated and re-evaluated. The grade for remediated competency will be an average of the failure and re-evaluation grades.

**Academic Integrity:** Dishonesty disrupts the search for truth that is inherent in the learning process and so devalues the purpose and the mission of the College. Academic dishonesty includes, but is not limited to, the following:

* plagiarism – the failure to acknowledge another writer’s words or ideas or to give proper credit to sources of information;
* cheating – knowingly obtaining or giving unauthorized information on any test/exam or any other academic assignment;
* interference – any interruption of the academic process that prevents others from the proper engagement in learning or teaching; and
* fraud – any act or instance of willful deceit or trickery.

Violations of academic integrity will be dealt with by imposing appropriate sanctions. Sanctions for acts of academic dishonesty could include the resubmission of an assignment, failure of the test/exam, failure in the course, probation, suspension from the College, and even expulsion from the College.

**Student Code of Conduct:** All students are expected to conduct themselves as responsible and considerate adults who respect the rights of others. Disruptive behavior will not be tolerated. All students are also expected to attend and be on time for all class meetings. No cell phones or similar electronic devices are permitted in class. Please refer to the Essex County College student handbook, *Lifeline*, for more specific information about the College’s Code of Conduct and attendance requirements.

**Course Content Outline:** based on the text **Radiographic Positioning and Procedures**, all 3 volumes, by E Frank, B Long & B Smith; ISBN # 978-0323073349. The accompanying workbook (ISBN # 973-0323073240) is also required.

**Week Topics covered**

1 Hip joint and pelvis anatomy

 Hip joint and pelvis positioning – trauma, non-trauma, and pediatric

2 Ribs and sternum anatomy and positioning

 Begin cervical and thoracic spine anatomy

3 **Test 1** on the hip, pelvis, and boney thorax

 Lecture: cervical and thoracic spine anatomy and positioning

4 – 5 Lumbar spine, sacrum, and coccyx anatomy

 Positioning of the lumbar spine, sacrum, and coccyx and SI joints

6 **Test 2** on the cervical, thoracic, lumbar, sacrum, and coccyx anatomy and positioning of the cervical, thoracic, and lumbar spine sacrum, coccyx, and sacroiliac joints

 Lecture: anatomy of the gastrointestinal tract

7 Anatomy of the GI tract, procedures and positioning of the upper and lower GI tract, positive and negative contrast media

8 **Midterm Exam** on hip/pelvis, boney thorax, entire spine and SI joints

 Lecture: positioning of the GI tract, anatomy of the biliary system

9 – 10 **Test 3** on upper and lower GI tract anatomy, procedures and positioning, and biliary system anatomy

Lecture: biliary system, procedures and positioning; urinary system anatomy, procedures and positioning; IV contrast media

11 Urinary system procedures and positioning

12 – 13 **Test 4** on biliary system and urinary system

Female reproductive anatomy, procedures and positioning

14 Complete all outstanding laboratory competencies

Review for the Final Exam

15 **Final Exam**

**ESSEX COUNTY COLLEGE RADIOGRAPHY PROGRAM**

**Spring Semester – RTC 106 Required Laboratory Competencies**

|  |  |  |
| --- | --- | --- |
| **BODY PART** | **POSITION/S REQUIRED** | **VIEWS** |
| **Ribs** | AP above and below the diaphragm, RPO, LPO | 3 |
| **Sternum** | Erect lateral and RAO (breathing technique) | 2 |
| **C-Spine** | AP, AA, erect left lateral, swimmers for C-7 | 4 |
| RAO, LAO, RPO, LPO | 4 |
| Trauma lateral C-spine | 1 |
| **Thoracic Spine** | AP and lateral | 2 |
| **Lumbar Spine** | AP, lateral, RPO, LPO, L5 – S1 spot | 5 |
| **Scoliosis series** | Erect PA or AP, and lateral (shield breast and remove shoes) | 2 |
|  **Sacrum and Coccyx** | AP 15\* cephalad angle (sacrum), AP 10\* caudad angle (coccyx), lateral (include both)  | 3 |
|  **Sacroiliac Joints** | AP axial (30 – 35\* cephalad angle), LPO, RPO | 3 |
|  **Hip** | AP , frog lateral (Cleves) | 2 |
| Trauma cross-table lateral hip Clement Nakayama and Danelius Miller | 2 |
| **Pelvis** | AP pelvis, RPO, LPO | 3 |
| **Pediatric Pelvis/Hip** | AP pelvis internal rotation and frog  | 2 |
| **CONTRAST STUDIES** |
| **Esophagram** | AP, PA, RAO, LAO, left lateral | 5 |
| **UGI Series** |  AP Scout, RAO, right lateral, PA, LPO, AP (perform in exact order) | 6 |
| **Small Bowel Series** | AP Scout, PA compression spot | 2 |
|  **Barium Enema**  | Single Contrast: AP Scout (80 kVp), AP (100 kVp), LPO, LPO or AP axial, left lateral rectum, RPO, PA post evacuation | 7 |
| Double Contrast: AP Scout, right and left decubitis, ventral decubitis of rectum | 4 |
| **Endoscopic Retrograde Cholangiographic Pancreatography (ERCP)** | Scout, set up room for fluoroscopy | 1 |
| **Arthrography /Myelography** – to be performed in RTC 203 |
| **Intravenous Urography****(IVU)** | AP scout, 30\* RPO and LPO, PA post void | 4 |
| **Voiding Cystography (VCUG) / Cystogram** | AP bladder 10-15\* caudad (female)AP voiding30\* RPO (male)  | 2 |
| **OR Retrograde Pyelogram** | Modified lithotomy position Review protocol | 1 |