

132-Ethics and Law in Medical Imaging and RAT 229-Quality Management in Medical Imaging. Deleted courses included RAT 211, 217, 237 (lab for 231). The faculty also received at a department meeting a copy of the Program Assessment Plan as a point of information and as a point of reference since it outlines expectations, etc.

In September 2000, the Joint Review Committee on Education in Radiologic Technology (JRCERT) conducted an onsite re-accreditation review of the program. The program received an outstanding exit report and was subsequently received the maximum eight-year re-accreditation award. The program was required to submit an interim re-accreditation report which it did in September 04 (results not yet known) and is tentatively scheduled for its next full self-study submission in 2008. The interim report was accepted and approved as submitted.

Most recently (in Fall 04), the ASRT curriculum was reviewed by the program chair and faculty to ensure the program curriculum is in compliance. While the work was time consuming but thorough, the result is a RAT program curriculum that matches in all cases that of the ASRT.

RAT faculty met in November 2006 to review the draft curriculum and decisions were made regarding the needed adaptations. ASTR revised approved curriculum in March 2007, which will go before the JRCERT Board. Implementation dates will be decided on in the future.

- II. Program Learning Outcomes:** A description of what you intend for students to know (cognitive), think/feel (affective), or do (psychomotor), when they have completed your degree program. A suggested manageable number of outcomes should be in the range of five to ten. Describe Program Learning Outcomes review activities. *

An entry-level graduate with an Associate of Applied Science Degree in Radiologic Technology from Sinclair Community College will be able to:

Learning Outcomes	Related Courses
1. Demonstrate professional attitudes and behaviors that are consistent with the delivery of humanistic, moral, and ethical patient care.	RAT 111, 112, 131, 132, 212, 213, 214, 218, 229; ALH 103, 106
2. Apply effective skills in the areas of communication, critical thinking and problem solving in the practice of radiography,	RAT 111, 112, 121, 122, 123, 212, 213, 214, 218, 222; 229, BIO 131, BIO 132
3. Demonstrate safe and effective radiation protection practices.	RAT 111, 112, 121, 122, 123, 132, 212, 213, 214, 218, 222, 226, 229, 232; PHY 106
4. Deliver competent radiographic practice with entry-level skills in the areas of fluoroscopy, general and mobile radiography.	RAT 111, 112, 121, 122, 123, 131, 132, 199, 212, 213, 214, 218, 219, 222, 226, 229, 232; BIO 131, BIO 132; PHY 106
5. Pursue lifelong learning through professional growth and developmental activities.	RAT 111, 112, 121, 131, 132, 122, 212, 214, 229; ALH 103

A review of program outcomes and an audit of the curriculum are conducted on a biennial basis as part of the college’s department review process.

III. Assessment Method(s): A measurable indicator of success in attaining the stated learning outcome(s). The methodology should be both reliable and valid. Please describe in detail.

- a. **Formative Assessment Methods(s) and Description:** a measurable indicator of student in-progress success in attaining the stated learning outcome(s).

Each technical course has a comprehensive written exam administered by faculty at the end of the quarter. In addition, at the conclusion of the RAT student’s first year, a “first-year comprehensive assessment” examination is administered. Students must achieve a 70% or higher mastery level to pass. Students who do not receive the minimum performance score are required to repeat the examination following formal remediation. Remediation is facilitated by enrollment in RAT 265, Radiology Seminar, a variable-credit-hour course. Students work one-on-one with a faculty member who assists

them in developing an individualized remediation plan. Student progress in the curricular sequence is dependent upon successful completion of the remediation plan.

During the first year curriculum, students who fail to complete courses with a “C” grade or higher are withdrawn from the program. They are eligible to apply for reinstatement one time only. During the second year, a student can repeat each RAT course once. If a student does not pass a course after two attempts, he/she is withdrawn from the program. A mastery level of 71% or higher in lecture (didactic) and a mastery level of 80% or higher in clinical is required to pass.

A clinical competency assessment plan is implemented for each RAT student. The plan includes competency objectives and assessments focusing in three major categories: clinical performance standards, quality performance standards, and professional performance standards. Students use the plan to guide progress through the clinical competency component of the program. Students must complete minimum competency expectations each clinical quarter; however, to meet graduation requirements in the normal time frame, students are encouraged to exceed minimum competency requirements.

During each quarter, two (initial and mid-quarter), one-on-one counseling sessions are held with each student by clinical faculty. At the conclusion of each clinical quarter, faculty meet individually with students to review performance in the three performance categories described above. Departmentally developed performance review forms are used for this purpose.

Hospital staff provide input regarding student clinical progress. Special forms that focus on behavioral skills are used for this purpose (*RT Evaluation Form*). Specific staff members have been specifically trained to support program faculty by serving as evaluators of student clinical performance. These individuals are formally recognized by JRCERT.

- b. Summative Assessment Method(s) and Description: a measurable indicator of end-of-program success in attaining the stated program learning outcome(s).

For the didactic portion of the program, a two-credit-hour capstone course (RAT 226: Synopsis in Radiography) is required of all RAT majors. This course is a synopsis of the entire RAT curriculum. Students must complete a comprehensive written examination, representative of the national certifying examination. Student

performance on this examination results in the final grade in RAT 226. Four practice examinations are required in preparation of the final exam. Students are permitted opportunity to repeat these tests until a passing score is achieved. Students must successfully complete at least three of the four practice exams to be eligible for the final exam. The final examination must be passed at a 71% or higher mastery level.

For the clinical component of the program, a four-credit-hour capstone course (RAT 214: Clinical Competency Capstone) is required of all RAT majors. Included in this capstone course are three major areas of practice concentration: mobile radiography, general radiography, & fluoroscopy. Evaluations for each practice area include clinical performance standards, quality performance standards, and professional performance standards; students must achieve an 80% or higher mastery level to pass. The final assessment form used for this process is continually revised to improve evaluator reliability and clarify performance expectations for students.

Overall, program assessment and evaluation is an on-going process. The plan in the past included the following components: program outcomes, learning facilitation strategies, key performance indicators (KPIs), and actions for unmet. However, the current plan has a new reporting format which now includes effected outcomes with benchmarks, measurement tools, timeframes, person responsible, and results. In Spring 04, the radiologic technology advisory committee reviewed and approved the draft of this new Program Assessment Plan and is expected to approve the final draft soon. Core competencies are primarily affective domain components of program outcomes. Evaluation of student achievement of core competencies is gathered annually through feedback from employer members of the advisory committee and graduating students (self assessment).

- IV. Results:** A description of the actual results of overall student performance gathered from the summative assessment(s). (see III.b.)

See attached *Program Assessment Plan*

- V. Analysis/Actions:** From analysis of your summative assessment results, do you plan to or have you made any adjustments to your program learning outcomes, methodologies, curriculum, etc.? If yes, describe. If no, explain.

See attached *Program Assessment Plan*

VI. General Education: A description of where and how within the major the three primary general education outcomes* (communication, thinking, values/citizenship/community) are assessed.

- a. Where within the major do you assess written communication? Describe the assessment method(s) used. Describe assessment results if available.

Communication skills are components of the core competencies for the program and are assessed throughout the curriculum. For instance, major writing assignments are linked to technical courses in each academic quarter. For evaluation purposes, most faculty use either the gen-ed writing checklist or a self-generated rubric formulated to assess assignment-specific content areas. Students' writing skills continue to be an area of weakness. Use of the gen-ed assessment tool and assignment specific rubrics has helped narrow the inter-rater reliability gaps across faculty as evaluators.

- b. Where within the major do you assess oral communication? Describe the assessment method(s) used. Describe assessment results if available.

Oral skills are assessed and evaluated in every clinical course through observation of student-to-patient and student-to-clinical associate interaction. Students' oral skills are routinely assessed as a component of the clinical competency procedure using a standard program form. The final clinical evaluation also addresses oral skills.

- c. Where within the major do you assess thinking? Thinking might include inventing new problems, seeing relationships and/or implications, respecting other approaches, demonstrating clarity and/or integrity, or recognizing assumptions. Describe the assessment method(s) used. Describe assessment results if available.

RAT faculty are currently attempting to more clearly define strategies to effectively assess critical thinking and problem-solving skills of students. In addition, the department is working toward realizing improved consistency and reliability of the thinking assessment process. As a component of core competencies, graduating students and employer members of the advisory committee provide assessment feedback on problem solving skills of graduates (See Plan attached).

The current program chair also expressed concern about faculty capacity to do reliable assessments in the area of critical thinking. This area persists as a poorly defined gen-ed outcome for the college, and the department needs help with understanding various components of critical thinking from the gen-ed perspective, e.g., what are the expected thinking skills outcomes and what mechanisms are available to formally, objectively and reliably measure and validate thinking outcomes for graduates of SCC?

One attempt to address and solve this issue is through RAT 222. This course is a multi-faceted approach to group problem solving techniques and strategies; students are assigned a scenario to which they respond through online group discussions, face-to-face group discussions, written reports, oral reports, and peer evaluations.

- d. Where within the major do you assess values/citizenship/community? These activities might include behaviors, perspective, awareness, responsibility, teamwork, ethical/professional standards, and service learning or community participation. Describe the assessment method(s) used. Describe assessment results if available.

Core competencies for the RAT program include professional skills related to citizenship, values and community. Assessment of these competencies is ongoing for the student's professional growth. For example, each clinical course in the curricular sequence includes development of professional and ethical behaviors. These competencies are assessed at scheduled and impromptu times throughout the quarter. The following assessment tools are used: mid-term performance review, final quarterly evaluations, clinical competency assessments (level 1, 2 and final), and RT feedback/evaluation forms. One new course, *Ethics and Law in Medical Imaging* expands emphasis on legal and ethical applications in radiologic technology.

Service learning opportunity is provided to Sinclair-based second-year RAT students through a one-day rotation at a local clinic for the homeless. For Hocking-based radiology students, a similar service learning experience is currently being developed. During this learning opportunity, students perform non-radiologic functions involving patient care such as patient intake, monitoring and recording vital signs and patient weight measures. Students provide feedback about this service learning experience through a reflective paper assessed by the clinical coordinator. Overall, based on reflection paper feedback, the majority of students enjoys this rotation and sees it as a positive professional development experience. In addition, the department is adding a service day requirement for first year students.