Annual Academic Assessment Report Cover Sheet
Assessment reports are due the 1st Wednesday after the Fall Term
Email to: assessment@unlv.edu

Program Information:

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<th>Program Assessed</th>
<th>Nuclear Medicine Technology</th>
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<tr>
<td>Department</td>
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<td>College</td>
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<td>Date Submitted</td>
<td>Dec 12, 2018</td>
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Contact Person for This Report

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Please attach a narrative (not to exceed 4 pages, excluding appendices) addressing the following:

- What are the student learning outcomes? Please provide a numbered list.
- Which learning outcomes were assessed?
- How were they assessed? (Programs must use at least one direct assessment of student learning.)
- Undergraduate programs should assess at least one University Undergraduate Learning Outcome (UULO) each year, which may or may not overlap with a program learning outcome.
- Graduate programs should assess at least one outcome related to one of the following graduate level requirements each year:
  - student engagement in research, scholarship, creative expression and/or appropriate high-level professional practice.
  - activities requiring originality, critical analysis and expertise.
  - the development of extensive knowledge in the field under study.
- What was learned from the assessment results?
- How did the program respond to what was learned?

Please limit the narrative portion of your report to no more than four pages. You may attach appendices with data, tables, charts, or other materials as needed. Please explain the relevant conclusions from any appendices in your narrative. Please contact the Office of Academic Assessment if you have questions or need assistance.
Student learning outcomes and assessments were based on first year Nuclear Medicine that starting in August/2018 and Nuclear Medicine students that graduated in May2018.

What are the student learning outcomes?
1. Develop a greater appreciation and respect for radiation including; its proper use with patients, protection issues for patients, technologists and understanding of gamma ray interactions in body and consequences safety concerns.
2. Apply theoretical concepts learned in the classroom to practical applications in the nuclear medicine clinical environment.
3. Completing competency tasks associated with routine aspects of nuclear medicine technology including; preparation and injection of radiopharmaceuticals, scanning patients, quality control on equipment
4. Develop cognitive thinking through laboratory and course exercises
5. Have a sound academic foundation for graduate studies
6. Conduct themselves in a professional manner respectful of patient needs and other health care providers

What learning outcomes were assessed?
Learning Outcomes 1-4, and 6 were assessed

How were they assessed?
Learning outcome # 1
The new Nuclear Medicine students recently completed their first semester of the program in December /2018. The emphasis on these first- year nuclear medicine students is on understanding and appreciating the importance of radiation and the effects on biological cells in the human body. Through multiple courses, lectures and presentations; students learned aspects of radiation safety, radiation detection, computer applications of imaging of gamma rays and effective methods of equipment quality control. Nuclear Medicine students were assessed their knowledge through examination throughout course work and were and attended a required annual lecture by University Radiation Safety Officer. Students also demonstrated competency in understanding radiation by efficiently using radiation monitoring equipment, utilizing appropriate and proper shielding and demonstrating knowledge and understand of gamma camera equipment in hospitals and outpatient clinical to minimize patient and technologist exposure levels. Second year Nuclear Medicine students that graduated in May used these theoretical concepts and applied them to the clinical environment in hospitals and outpatient facilities.
Learning Outcome # 2
Many applied theoretical concepts learned in the classroom were assessed in practical applications in the nuclear medicine clinical environment in the following ways;

A. Students that graduated in May/2018 participated in individual testing and observation by Clinical coordinator or Certified Technologist in the clinical site the students were assigned. These tests and observations required students to either verbally explain or demonstrate how specific concepts of Instrument, radiation protection, radiopharmaceutical use and computer manipulations taught in the class were applied and properly used in clinical environment.

B. Through clinical competency evaluations performed on each student during their clinical rotation demonstrating understanding of basic concepts in classroom setting translating to hospital and outpatient setting.

C. Clinical sites supervisor’s evaluation of students and end of the year survey forms.

Learning Outcome # 3
Competency tasks are assessed in the clinical environment in many aspects of nuclear medicine through the use of a competency based performance sheet. Students have to successfully complete (demonstrate understanding and be able to perform specific tasks) assigned in the clinical environment in 29 identified areas. These forms require that the Clinical Coordinator or Chief Technologist sign- off on all competencies in order for a student to complete their clinical rotation in nuclear medicine.

Learning Outcome #4
Developing cognitive thinking was assessed through laboratory and Coursework exercises in a number of way including;

A. Numerous laboratory experiments and written reports required by students to assimilate information and deduce solutions.

B. Calculations of mathematical equations and problem solving important to understand basic theorems of nuclear medicine.

C. Homework that evoked thought and a comprehension of various statistical counting perimeters and understanding of anatomy and physics to interpret simulated patient data.

D. Various tests throughout the program evaluating cognitive development of ideas essential in nuclear medicine.
Learning Outcome # 6

Students that graduated in May were expected to be professional and conduct themselves in an ethical manner. This is assessed formally twice a semester by written evaluations performed by clinical supervisor of the student. After evaluations are completed, results of student’s perceived behavior are discussed with student. Furthermore, the clinical coordinator meets informally with hospital and/or outpatient staff to discuss behavior and attitude of student in their facility bi-monthly.

What was learned from assessment results?
1. Overall grades for nuclear medicine students were mostly A’s and B’s on laboratory exercises and classroom examinations demonstrated students understanding in theoretical concepts of nuclear medicine.
2. Transferring these concepts into practical experiences was demonstrated by students satisfactory completion of Competencies identified in their clinical experience and Clinical Supervisor’s evaluation forms. (Second year students only)
3. Students surveyed after their first semester reported that one concept taught during their first semester in the area of Instrumentation needed more hand-on experience to better understand.
4. Clinical supervisors surveyed after nuclear medicine students completed their second year of study reported they were overall pleased with the quality of students and their ability to transfer the theory of classroom work into practical understanding and competency in the real clinical environment.
5. The area of concern identified by students and clinical supervisors regarding last year’s assessment for more hands-on clinical experience in PET/CT was rectified and student now felt that had enough experience in this area.

How do the program respond to what was learned?
The Nuclear Medicine Program Director at UNLV plans on meeting with nuclear medicine advisory board in the community. This board is representative of Chief Technologists, Staff Technologists, Radiology managers, Pharmacists, Sales representatives and previous graduates of program. The topic raised by students regarding more hand-on experience in Instrumentation will be discussed. Possible solutions include more clinical related days in hospital during their first semester. Currently, first semester students are required to spend two days in a Nuclear Medicine facility. The number of clinicals days maybe increased to improve student understanding of basic Instrumentation objectives in class.