Amarillo College

Follow-up Response

Form for Response to External Review Committee

Instructional

The ID number for this form is 35 . You will need this number to update or edit your submission in the future.

Name of Division:	Allied Health
Name of Department:	Nuclear Medicine
Name of Program:	Nuclear Medicine Technology
This Program Review is being conducted during year:	2007-2008
Names of Staff or Faculty Completing Follow-Up Response:	Mark E. Rowh

I. Program's/Department's Purpose

State the purpose of the program/department. How is this purpose within the mission of Amarillo College?

The Amarillo College Nuclear Medicine Technology Program is committed to providing medical employers with entry-level nuclear medicine professionals through a comprehensive program that enables proof of competency via didactic and clinical curriculum, which complies with all requirements of the essentials and guidelines of the Joint Review Committee on Educational Programs in Nuclear Medicine accrediting organization and the Texas Higher Education Coordinating Board, therefore, enhancing the quality of patient care. The purpose of this program is in line with the mission statement of Amarillo College, "Amarillo College, a public community college, is dedicated to providing educational, cultural and community services to enhance the quality of life for the diverse population in the service area." The Nuclear Medicine Technology Program mission statement is located on the Planning and Evaluation Tracking (PET) Form.

Does the answer include a purpose statement for the office/department?

Does the answer indicate how this office/department is within the mission of Amarillo College?
Unacceptable
Recommendation
As stated above: "If additional documentation is cited, the documentation must be provided as a hyperlink within the answer. : There are no such hyperlinks. In finding these links, the statements above do seem to be validated, but it was not easy for this reader to validate these statements. As such, it is recommended that hyperlinks to any and all cited sources, including the Joint Review Committee document and the PET form for this particular question, be created within the body of the text statement. It is critical for the reader (the accreditation team, to be able to easily assess these statements for validity.

The additional information attached below does not link to these sites, and while helpful in referring us back to the AC mission statement and strategic plan, this question needs to include the links to the documents it refers to.
DJH

Followup Response

The concerns of the assessor are addressed with these hyperlinks:

The hyperlink to the Joint Review Committee on Education in Nuclear Medicine Technology shows that the NMTT program at Amarillo College is fully accredited.

http://www.jrcnmt.org/states/tx_list.asp

The mission statement of the NMTT program, stated on the Planning and Tracking Evaluation Form, aligns well with that of Amarillo college at these links.

Amarillo College Mission Statement is:

http://www.actx.edu/cr/facts

NMTT Program mission statement is:

http://www.actx.edu/archives/index.php?module=article&id=14&page=2

When was the last time the program's/department's purpose

statement was reviewed/revised by faculty and staff in the program/department?
The last review and consequent revision of the program's purpose statement was in 2006.

Does the answer indicate the last time the program's/department's purpose statement was reviewed/revised by faculty and staff in the program/department? Does the answer indicate how this program/department is within the mission of Amarillo College? within the mission of Amarillo College?
Acceptable
Concern
This is acceptable within the content, although the archive link is difficult to follow. Can the authors put a direct link to the evidence for this statement that makes it easier for the acceditation team to validate the statement. DJH

Followup Response
NO ANSWER

If the program/department offers continuing education credits, how are these courses consistent with the mission of Amarillo College?
The Nuclear Medicine Program Director is the President of the Panhandle Society of Radiologic and Related Sciences (PSSRS), which is a local chapter society for radiological science workers. Once each fall at the end of October, the society joins with the Amarillo College Continuing Education Department to provide a symposium that enables radiation workers throughout the Texas Panhandle and beyond to obtain continuing education credits that are relevant in maintaining Texas professional licensure and national certification/registration. With this in mind, the yearly symposium "provides educational, community services, and resources to enhance the quality of life in the service area." Additionally, the yearly symposium helps in supporting five of the eleven goals listed in the Amarilo College catalog: Goal I. Develop responsive programs and courses to meet documented community needs. Goal V. Expand impact on economic development in the Texas Panhandle. Goal VI. Enhance quality of life. Goal VII. Encourage community support. Goal XI. Enhance employee productivity. By reaching these goals, radiologic science workers are able to participate in continuing education activities through Amarillo College and learn about changing technologies and

methodologies in our fields.

Does the program/department offer continuing education credits? Does the answer indicate how these courses are consistent with the mission of Amarillo College?

Unacceptable

Recommendation

This reader would lead with the second statement about joining with PSSRS in this symposium (rather than lead with the comment about the Program Director's status). While this is interesting information related to the President's status, it doesn't seem to be related to the question or the department goal of providing continuing ed credits and, as such, is unnecessary here. Again, hyperlinks to the documents involved would be helpful to check validity.

Check the grammar in seriation of goals using colon instead of period. DJH

Followup Response

The writer is providing the link to the Workforce Education Course Manual which shows that several courses are linked to continuing education offerings.

http://www.thecb.state.tx.us/aar/undergraduateed/workforceed/wecm/wecmlist.cfm

In addition, The Center for Continuing Healthcare Education at Amarillo College provides an annual Radiologic Sciences symposium in October, but the link to the program is delted from year the year. The next CE offering is October 1 & 2, 2011.

Does the program have admissions policies?

yes

Where are the policies published?

www.actx.edu then click on Programs of Study, then Department Websites, then Nuclear Medicine. You will see options to download/view/print the admission criteria.

Here is the direct link to the program packet.

www.actx.edu/nuclear%5Fmed/index.php

Are all the locations where the policies are published included in the answer?

Acceptable

Recommendation
This statement is vague and unclear. Reword this statement to show specifically how the community (medical affiliates?) is impacted by this program. Perhaps the terms "local or community medical affiliates and organizations" .would be better How does proper patient care link up to the AC mission statement? Specifics would be better here than abstractions.

A hyperlink to mission statement is needed to AC mission statement, for ease of valiation. DJH

Followup Response

NO ANSWER

E.) Explain how these policies are consistent with the mission of Amarillo College.

The admissions policies for the Nuclear Medicine Technology Program are consistent with the mission of Amarillo College in that the overall program goal is to provide education through classroom and clinical learning so that the medical affiliates are provided with individuals who have been properly trained in patient care techniques.

Does the explanation of how the policies are consistent with the mission of Amarillo College appear to be accurate?

Unacceptable

Recommendation

This statement is vague and unclear. Reword this statement to show specifically how the community (medical affiliates?) is impacted by this program. Perhaps the terms "local or community medical affiliates and organizations" .would be better How does proper patient care link up to the AC mission statement? Specifics would be better here than abstractions.

A hyperlink to mission statement is needed to AC mission statement, for ease of valiation. DJH

Followup Response

The statement here is quite clear. All Allied Health programs have 'affiliation' agreements' with the clinical sites mentioned. To explain, the clinical sites for the NMTT program are all local and located within Amarillo. Other programs may have clinical sites outside of the immediate area.

The purpose statement for the program is located on the PET

Form:

http://www.actx.edu/archives/files/filecabinet/folder8/Nuclear_Medicine_Technology_PET_2007_2008.pdf

The mission statement of Amarillo College is located here:

http://www.actx.edu/cr/facts

F.) Is the program/department accredited?
yes
Which agencies or organizations accredit the department/program?
The Joint Review Committee on Education in Nuclear Medicine Technology

The address is: JRCNMT 2000 W. Danforth RD., Ste 130, #203 Edmond, OK 73003 Tel: (405) 285-0546 Fax: (405) 285-0579 Email: jrcnmt@coxinet.net

Are the complete names of the agencies or organizations which accredit the department/program cited?
Acceptable
Concern
Create hyperlink to JRCENMT. DJH

Followup Response

NO ANSWER

G.) How many years are in the accreditation cycle?
5

How many years are in the accreditation cycle?
Acceptable
Concern
Again, in order to give the accreditation team easy access to validate statement, a hyperlink to the statement regarding accreditation cycle would be helpful. However, in checking this, it's valid. DJH

Followup Response

NO ANSWER

H.) When were the accreditations affirmed or granted?
2007

When were the accreditations affirmed or granted?
Acceptable
Concern

Again, as previous comments, this statement is fine but there is no easy way to validate it. DJH

Followup Response

NO ANSWER

I.) What is the current status of the accreditation?

Accredited

Are the current statuses of the accreditations identified (e.g. accredited, in process of renewal, in process of candidacy, other)?

Unacceptable

Recommendation

As before, tThe statement needs to be linked. While it's correct, links allow us to validate it readily. DJH

If not required, is the program eligible for accreditation?

NA

Has this program/department sought accreditation even though it is not required (e.g. yes; If no, explain)?

NA

Followup Response

NO ANSWER

J.) Is this program/discipline required to receive approval from an external agency or organization (other than the Texas Higher Education Coordinating Board) in order to offer courses?

yes

Identify the external approver(s) for the department/program.

1. Southern Association of Colleges 2. Joint Review Committee on Education in Nuclear Medicine

IF the program/discipline is required to receive approval from an external agency or organization (other than the Texas Higher Education Coordinating Board) in order to offer courses, was (were) the external approver(s) for the department/program identified?

Acceptable

Concern

As before, easy use would include hyperlinks to these agency/organization web site links.

Followup Response

NO ANSWER

K.) What approval schedule is required by the external approver(s)?

1. SACS is every ten years. 2. JRCNMT is every five years.

Was the approval schedule required by the external approver(s)

identified?
Acceptable
Concern
Same comment on hyperlinking. DJH

Followup Response

NO ANSWER

L.) When did the program/department last receive approval?
2007

When did the program/department last receive approval?
Acceptable
Concern
This is true, but needs hyperlink to documentation. DJH
Is the reason why the program/department is required to receive this approval clear?
Unacceptable
Concern
This question was not answered. This reader wasn't clear if this needed to be answered?DJH

Followup Response

NO ANSWER

II. Program's/Department's Improvements based on Planning, Evaluation and Assessment

Identify at least one example of an improvement/revision which resulted from the annual PET forms for the last five years.
1. The 2006-2007 PET form reflects a mandated change for programs to revise their purpose statements so that they are in line with published mission statements and the essentials and guidelines from their accrediting agencies. Before that date, the Nuclear Medicine Technology Program purpose statement was: "to provided adequate instruction in didactic/clinical courses in preparation for graduation/certification." The new purpose statement states: "The Amarillo College Nuclear Medicine Technology Program is committed to providing medical employers with entry-level nuclear medicine professionals through a comprehensive program that enables proof of competency via didactic and clinical curriculum, which complies with all requirements of the essentials and guidelines of the Joint Review

Committee on Educational Programs in Nuclear Medicine Technology accrediting organization and the Texas Higher Education Coordinating Board, therefore, enhancing the quality of patient care." 2. There are three areas of improvement that are noted when comparing the 2006-2007 and 2007-2008 PET forms. The Web links to both of these PET forms are provided below. Goal Statement 1: Guide Students to pass a nationally recognized professional certification or registry through the NMTCB or the ARRT. The standard is that 85% of students will pass national registry exams with a score of 75% or better within 1 yr. after graduation. In 2006-2007, 88% of graduates passed the test within one year of graduation, so the standard was exceeded by 3%. In 2007-2008, 100% of graduates passed the test within one year of graduation, so the standard was exceeded by 15%. Goal Statement 2: Guide students to meet or exceed the national mean scaled score for all examinees from all nuclear medicine programs in the Unted States. The standard is that 85% of students will score at or above the mean scaled score for the nation. In 2006-2007, 66% of Amarillo College graduates scored at or above the mean for all schools in the nation. This standard was not met by 19%. In 2007-2008, 75% of Amarillo college graduates scored at or above the mean for all schools in the nation. This standard was not met by 10% Although, the average score for Amarillo College students was 80.50 compared to the median scaled score of 79 for all national examinees. Goal Statement 3: Guide students to pass national certification/registry exams on the first try. The standard is that 85% of graduates will pass the registry on the first attempt. In 2006-2007, 93% of the graduates from Amarillo College passed the registry on the first attempt. This standard was exceeded by 8%. In 2007-2008, 100% passed on the first attempt, exceeding standard by 15%. Here is the link to access the PET form information stated above. www.actx.edu/archives/index.php

After reviewing at least one example of improvements/revisions that resulted from the annual PET forms for the last five years, determine the extent that this program/department has used the PET forms to make improvements/revisions. Does this meet the minimum expectations for using PET forms to make improvements/revisions to the program/department?

Very well done and meets all PET form outcomes.

Followup Response

NO ANSWER

Identify at least one example of improvements/revisions which resulted from the last Program Review.

The Nuclear Medicine Technology Program was cited for a lack of Faculty Professional Development in the 2002 report. I believe this citation has been remedied with the following since the last program review: 1. Program Director is currently working on a Master's Degree, with 18 hours completed at this writing and is slated to graduate from WTA&M in May 2009. 2. Program Director has completed all of the required modules for the supervisor's and managers training required by Amarillo College. 3. Program Director was an associate author in a grant with the University of Texas at San Antonio, called Texas Cares. This was a joint effort with Amarillo College and other Texas colleges/universities/high schools to write and produce curriculum dealing with bioterrorism as a result of the 9-11 aftermath. The purpose was to educate students to become trainers to others in dealing with terroristic acts. 4. The Program Director has completed all four of the community college courses that were required for new faculty members. 5. The Program Director attends seminars that count as continuing education activities, which are required to maintain licensure/registration. The national exam organizations mandate a completion of 24 hours of approved CEU for all licenses held. Currently, the PD maintains current licensing in Nuclear Medicine Technology through the NMTCB, in Radiography through the American Registry of Radiologic Technologists, and holds Texas licensure through the Department of Health and Human Services Medical Radiologic Technologist Section. 6. The Program Director maintains proof of all continuing education activities by holding certificates of completion. Currently, these are located within the rank notebook since the PD is petitioning to be moved from instructor to assistant professor. The Nuclear Medicine Technology Program was cited for needing improvement in being associated with Professional Organizations in the 2002 report. I believe this citation has been remedied with the following: 1. Program Director is the President of the Panhandle Society of Radiologic and Related Sciences. This is an area chapter that is associated with The Texas Society of Radiologic Technologists. 2. Program Director is a

member of the Society of Nuclear Medicine and the Southwest Chapter of the Society of Nuclear Medicine Technologist Section. 3. Program Director is a member of the Texas Society of Radiologic Technologists. The Nuclear Medicine Technology Program was cited for needing improvement in the textbook selection process in the 2002 report. I believe this citation has been remedied with the following: 1. Textbooks for this program have been selected, because they are aligned with a Task Analysis that is provided by the Nuclear Medicine Technology Certification Board. The Task Analysis provides instructors with an outline that if followed will lead students to success when taking national registry exams. 2. Students are required to purchase "Nuclear Medicine and PET/CT", which they will use for the entire 2-year program. This textbook was written by nuclear medicine professionals who are board certified through the NMTCB and have additional cerifications in Positron Emission Tomography (PET) and cadiology. Additionally, one author is also a nuclear medicine technology program director, so the book is written by someone who understands the task analysis, and then it is reviewed by others working in the field and those who are educators before being published. 3. All students in the Allied Health areas are required to study in a comprehensive style approach. They cannot finish one semester without having to carry that information with them to the next semester, and the next, because the end result will be sitting for their national boards. For Nuclear Medicine, this must occur for a 2-year period. Having the same text book for two years enables them to review along the way. 4. Nuclear Medicine students are also required to purchase two more textbooks for the Capstone Course held during their final semester. These books have valuable mock exams for them to practice with and an additional practice CD for performing and practicing nuclear medicine mathematics. The additional textbooks are "Review of Nuclear Medicine Technology" and "Practical Mathematics in Nuclear Medicine Technology." These books were also written by certified nuclear medicine technologists and educators. 5. The publication dates for these textbooks are 2007, 2004 and 1999, respectively. (Note: The publication date on the mathematics textbook from 1999 is not of concern, because nuclear medicine mathematics remains the same from year to

year. This is the best mathematics book I have found for our field and easy to use for the students.)

After reviewing at least one example of improvements/revisions that resulted from the last Program Review, determine the extent to which this program/department values the Program Review process to make improvements/revisions.

Unacceptable

Recommendation

While these look like excellent improvments, the statements refer to a program review which has no hyperlink. Is this available online, and if so, where does the reader/evaluator find it? The additional materials does not give the program review itself so there is no way to validate these improvements. NEEDS the program review itself to compare. DJH

Followup Response

The writer found no link to the 2002 Program Review. The statements were in response to the paper version. The writer started his position in June 2002, and is responding to a review process that he was not a part of. When looking for links to the last review, the review information from 2002 is not listed on the Assessment web page. I will be glad to include when found.

Identify all the delivery approaches used for courses within this program/department: (Select all that apply).

traditional classroom,

After reviewing all delivery approaches for courses within this program/department, is this program positioned for growth? Does the committee have recommendations for delivery options which will provide additional growth?

After reviewing at least one example of improvements/revisions that is a response to accomplish a strategy or tactical objective within the Strategic Plan 2010-2015, determine the extent to which this program/department has contributed to the implementation success of the Strategic Plan? Does this department/program understand how it relates to the institution's future based on the Strategic Plan?

Unacceptable

Recommendation

Not answered. Needs to be answered. DJH

Followup Response

This program is accredited by the JRCNMT and enrollment is capped due to the Accreditation Standards for Nuclear Medicine Technologist Education. The enrollment for this program is 15

students and is based upon the number of clinical sites, the number or registered technologists, and the number of cameras. Specifically, the accreditation standard is found on page 9 under Standard D 3: Operational Policies.

the standards are found at:
http://www.jrcnmt.org/chd_jrc/files/Final%20Standards%20rev5_2011.pdf

Identify at least one example of an improvement/revision that is a response to accomplish a strategy or tactical objective within the Strategic Plan 2010-2015.
Strategic Goal V states, "Deliver instruction and services using technology to improve effectiveness, efficiency, and convenience for student, faculty and staff." The passage of the bond has made it possible to pursue a state-of-the-art classroom and laboratory for the nuclear medicine technology students, which includes a gamma camera, thyroid probe, well counter and computer processing stations. Laboratory simulations have not been possible regarding the proper use of nuclear medicine instrumentation. Instead, students are required to get all of their hands-on learning experiences at the medical affiliates. The implementation of the building plans will help facilitate learning experiences for students before and during their clinical rotations.

After reviewing at least one example of improvements/revisions that is a response to accomplish a strategy or tactical objective within the Strategic Plan 2010-2015, determine the extent to which this program/department has contributed to the implementation success of the Strategic Plan? Does this department/program understand how it relates to the institution's future based on the Strategic Plan?
Acceptable
Concern
Again, the link here to the Strategic Goal would be helpful. While they have quoted the goal, validation requires that the reviewer have an EYES ON approach. For ease of use, the hyperlink should be included here, although it is valid and accurate, as it stands.

Does this Committee have recommendations as to how this program/department may contribute to the implementation of the Strategic Plan?
Acceptable

Concern

This wasn't answered, assuming that this committee doesn't have any recommendations. It might be good to have at least one recommendation for further improvements that could be made.

Followup Response

NO ANSWER

Provide names and titles of those who determined the process used to assess outcomes of the program and/or courses in the department.

Mark E. Rowh, Director/Instructor Barbara Gray, Clinical Assistant Kathrine Ford, CNMT, Northwest Texas Hospital Lidia Heard, CNMT, Amarillo Medicial Specialists Amber Ethridge, CNMT, Baptist/St. Anthony's Hospital Jodi Merrifield, CNMT, Amarillo Diagnostic Clinic Ed Smith, CNMT, Harrington Cancer Center Stephanie Snyder, Amarillo Heart Group Danita Morrow, CNMT, Amarillo Cardiology Center of Amarillo Deedra Lynch, CNMT, Cardiovascular Center of Amarillo Helen Jean, CNMT, Veteran's Administration

Has the program/department had a broad base of involvement from a majority of faculty and staff with the program/department regarding implementation of student learning outcomes of the program(s) (or department) and courses? What recommendations does the committee have for increasing involvement?

Acceptable

Concern

Editing of names using semi colons after the department, as this is difficult to read and know who belongs to which organization. This reader is unaware of a way to validate this information. It would be helpful to have validation. Are there minutes of some kind where these individuals were named? DJH

Followup Response

NO ANSWER

Explain the primary reasons behind the competencies that were selected.

Competency-based testing is a means of checking the progression rate of students during their education by determining whether or not they are able to meet specified objectives, thus demonstrating competency. The student's cognitive knowledge skills are directly evaluated in the classroom and indirectly evaluated throughout

their educational experiences. Their psychomotor application skills are evaluated at the various clinical sites. In order to properly evaluate the student's psychomotor skills, it is essential to determine the level of performance ability. Only through the use of a competency based testing system can we determine the proficiency level that a student has achieved. The overall outcome enables evaluation of knowledge, skill (psychomotor) and attitude. This program enlists the medical expertise of clinical supervisors and other technologists who are registered in the field of nuclear medicine to test students on their psychomotor skills regarding insturmentation, patient methodologies and radiopharmacy/radiochemistry. Students rotate to various medical facilities to get an assortment of practical patient environments and have a chance to see different patient procedures that may not be offered from one place to the next. With this in mind, the program's competency-based system is structured for two types of testing so that the evaluation system is uniform: Procedure Evaluation-This evaluation is designed to evaluate the student's performance on a specific nuclear medicine procedure. Following classroom instruction, sufficient practice time and observation, the student must successfully simulate the procedure in the hospital setting. The student is observed by the technologist they are assigned to and given feedback on strengths/weaknesses as appropriate. Once the student feels competent to do the procedure unassisted, then they petition the licensed technologist to proceed with the competency evaluation, which is explained in the next paragraph. Competency Evaluation-This evaluation is the next step designed to evaluate the student's performance in proper patient care methodologies that are supported from classroom instruction. When the student is ready to perform a patient procedure unassisted, then they present the Competency Form to the technologist who will be observing/evaluating/grading their performance. Successful completion of this test becomes record that the student is competent for the selected competency, and the record is maintained in the PD's office. Please make note that students must complete a total of 24 competencies within their 2-year training as is required through the essentials and guidelines of the accrediting body. Also, please make note that the grading

scale is as follows: A=94.5 and above B=84.5 and above C=74.5 and above F=74.4 and below

Do the selected competencies appear to be valid?

Acceptable

Recommendation

There is no way to validate these statements (which may or may not be necessary given the nature of the question). This reader isn't clear whether there is a way to validate these competencies?

Followup Response

The Strategic Plan 2010-2015 is located at this link:

http://www.actx.edu/strategic/files/filecabinet/folder4/Strategic_Plan_Through_2015.pdf

The Strategic Plan referenced within this document has changed since this writing so the referenced Strategic Goal V will be replaced by "Goal 4: Ensure the College's Future" under 4.2.

The writer has pasted the student competency form referenced within this document.

AMARILLO COLLEGE NUCLEAR MEDICINE TECHNOLOGY PROGRAM
CLINICAL PROCEDURE TEST FORM

STUDENT NAME: _____ DATE OF COMPETENCY: _____
NUCLEAR MEDICINE TECHNOLOGIST NAME: _____
CLINICAL LOCATION: _____ PROCEDURE: _____

NOTE: The hands-on training that student's experience at various clinical sites strengthens the methodologies that are learned within the classroom. The goal is to teach students to perform nuclear medicine studies so that there are optimal patient care outcomes. After observing this student demonstrate their knowledge and skills related to this procedure, please indicate your appraisal of the level of competency in each category by placing a mark within the appropriate box.

A = Above Average-Meets competency independently in an exemplary manner without supporting cues or direction from nuclear medicine technologist. (10 points each)
C = Competent-Meets competency as expected consistently with minimal supporting cues of direction from nuclear medicine technologist. (8 points each)
N/I = Needs Improvement-Meets competency inconsistently and/or requires frequent supporting cues and/or direction from instructor. (4 points each)
U = Unsatisfactory-Does not meet competency/Requires considerable improvement/Requires constant supporting cues and/or direction from nuclear medicine technologist. (0 points)
N/A = Not Applicable-Category not observed or measured for this competency.

SPECIAL NOTE: A RATING OF 'U' IN ANY CATEGORY CONSTITUTES FAILURE OF THIS COMPETENCY.

Category Statement	A C N/I U N/A
1. Evaluated exam requisition for correct patient and study/Obtained relevant patient hx. & clinical information for this study	
2. Provided proper patient education for this study/Communicated effectively with patient and/or family/Maintained confidentiality	

3. Demonstrated caring behaviors and provided optimal patient care/Demonstrated professional appearance and behaviors	
4. Selected proper collimator and/or other instrumentation components relevant to this study/Employed correct imaging parameters/protocol	
5. Selected appropriate radiopharmaceutical or radionuclide relevant to this study and determined safe dosage using dose calibrator	
6. Used proper radiation protection by demonstrating an understanding of underlying protection concepts/principles (time, distance, shielding)	
7. Employed proper venipuncture/IV skills using OSHA and Standard (Universal) Precautions (gloves, handwashing, proper disposal/cleanup)	
8. Obtained/evaluated optimal/diagnostic images per modality (PET/CT, general Nuclear Medicine)/Organized images for diagnostic reading	
9. Processed PET/CT or Nuclear Medicine exam according to protocol	
10. Dismissed patient according to facility protocol	

NM Technologist Signature: _____ Grade: _____
Student Signature: _____

The names and titles of those who determine the process used to assess outcomes of the program and/or courses in the NMTT department may be found within the Advisory Board Minutes for the program at this link:

http://www.actx.edu/archives/index.php?module=article&id=38

Identify the primary reasons for the assessment tool(s) selected.
The assessment tools are separated into classroom instruction and practicum tools: 1. Classroom Instruction Major Exams to test cognitive/critical thinking skills-80% of their semester grade Quizzes to test cognitive/critical thinking skills-20% of their semester grade 2. Practicum Instruction Weekly report forms are used to identify any concerns/weaknesses in a student's performance before they are evaluated by the technologist. This form does not carry a grade but is only used to identify areas that need to be addressed before the real performance evaluation. Competency forms are used to evaluate the student's capabilities in performing the required competencies set forth by the JRCNMT. These account for 40% of semester grade. Evaluation forms are filled out by clinical supervisors after each rotation, which rates the student as above average, competent, needs improvement and unsatisfactory in several categories. The ratings carry points of 10, 9, 5 and 0, respectively. The evaluations lend information on the student's performance in 14 areas. This tool counts 40% of the semester grade. The Faculty Evaluation tool is basically a tool to observe the student's proessional demeanor and based on program

policies/regulations stated in the clinical and student handbooks. This tool is worth 20% of the semester grade.

Will the assessment tool(s) selected provide valid and reliable results?
Unacceptable
Recommendation
This reader has NO WAY of knowing whether these assessment tools are valid or reliable. As well, the link to JRCNMT website would be helpful. The reader is not clear how to answer this question or where to go to check this information. DJH

Followup Response

The course syllabus provided supports the statements above:

AMARILLO COLLEGE
NUCLEAR MEDICINE PRACTICUM III, NMTT-2266
COURSE SYLLABUS-Summer
MARK ROWH, M.A., CNMT, RTR, Assistant Professor
Phone numbers: Office 354-6071 Cell 678-9634 Home 372-3321
E-mail: merowh@actx.edu or merowh@my.actx.edu

Course Description

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and nuclear medicine student.
Students will attend the designated clinical sites on M and T at the designated hours on the schedule.

End-of-Course Outcomes: As outlined in the learning plan, apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry and will demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry.

Statement of Purpose

Designed to provide the student with a practical experience in the clinical setting working with patients, nuclear medicine staff members, and nuclear medicine equipment.

Course Prerequisite

NMTT-1266-Practicum I

Required Course Materials

Clinical Handbook (Students are responsible for the information each clinical semester)
Clinical paperwork (patient ledger, patient competency form, time sheet, clinical supervisor evaluation
form, clinical make-up time form, student evaluation of medical affiliate form)

Course Credit

2 semester hours (16 hr practicum weekly)

Course Goals/Competencies

1. Maintain/operate departmental equipment.
2. Maintain/operate auxiliary equipment.
3. Schedule patient studies, ensuring appropriate sequencing of multiple exams.
4. Provide proper and appropriate patient care as needed.
5. Communicate effectively with medical staff members, patients and their families.
6. Provide safe/sanitary conditions for patients using OSHA & Standard precautions.
7. Recognize/respond to emergency situations.
8. Obtain pertinent patient history for each exam and check indications/contraindications.
9. Prepare patients properly for exams.
10. Select/administer the appropriate radiopharmaceutical by the proper route.
11. Prepare equipment, computer, auxiliary equipment and acquire images per protocol.
12. Evaluate/process computer-generated data.
13. Prepare patient to perform cardiac monitoring and stress testing.
14. Prepare/administer interventional pharmacologic agents.
15. Obtain samples for non-imaging studies.
16. Calculate and evaluate results for non-imaging studies.
17. Maintain safe radiation protection methods (time, distance, shielding) regarding ALARA.

Required Competencies/Evaluations

The following activities will be scored for course credit:

1. One (1) clinical procedure/patient competency every 3 weeks for a total of 3
2. Two (2) clinical supervisor evaluations per semester, one at mid-semester, one at semester end
3. One (1) faculty evaluation at end of semester

Final Grade Evaluation

A= 94.5-100 C=74.5-84.4

B=84.5-94.4 F=less than 74.5

The final course grade will be computed as follows:

1. Clinical procedures/patient competencies will constitute 40% of the final grade.
2. Clinical supervisor evaluations will constitute 30% of the final grade.
3. Faculty evaluations will count 30% of the final grade.
4. Final grade point deductions will occur as indicated for not following rules/regulations of the
   Clinical Handbook. It is the student's responsibility to know this information.
5. A grade of 'F' will be assigned for failure to perform all clinical hours missed.

Attendance Policy

Regular attendance is necessary for satisfactory achievement.

Refer to the 'Clinical Handbook' for information regarding absences, tardiness, make-up time contracts, and all other rules and regulations in the clinical environment.

Withdrawal dates and tuition/fees refunds are located on the Amarillo College Web site calendar.

Students with Disabilities

Student must make formal arrangements through disability Services in the event that they

require special arrangements to meet course requirements (Phone: 345-5639).
Students must be able to fully participate in all clinical activities in such a way as to not pose a risk to the safety of the patient or clinical personnel.
Medical affiliates have the right to impose a medical physical exam upon the student (at cost of student) if physical limits interfere with safe patient care practices.

Grievance Procedure

Students should make a professional attempt to resolve problems with their clinical supervisors and instructors first. In the event that problems cannot be solved, proper appeal procedures are as follows:
Clinical supervisor, Instructor, Program Chair, Allied Health Division Chair, Dean of Instruction-In that order.

Students Rights and Responsibilities

It is the student's responsibility to refer to the *Students Rights & Responsibilities Publication* of Amarillo College. The publication is available on the Amarillo College Web site, or a printed version may be obtained in Student Services.
Students are expected to adhere to all policies/regulations of each individual medical affiliate and expected to maintain professional standards at all times.
Students must refer to the Code of Ethics of the NMTCB and the Standards of Ethics of the ARRT credentialing bodies at all times.
Students are expected to be familiar with all information located in the Clinical Handbook.

Electronic Devices

Cell phones and other personal electronic devices are distractions in the learning environment and may cause performance errors.
Students may not carry cell phones or other personal electronic devices during clinical hours. These devices must be turned off during assigned clinical hours.
Texting is not allowed during assigned clinical hours.
Personal phone calls are discouraged, but in the event that you must receive an emergency phone call, the affiliate departmental numbers are located on the clinical schedules.
Statements regarding the mandated competencies from the JRCNMT are supported with information from the JRCNMT Accreditation Manual on pages 20-26. Link below:
http://www.jrcnmt.org/chd_jrc/files/Accred_Manual_10-11.pdf

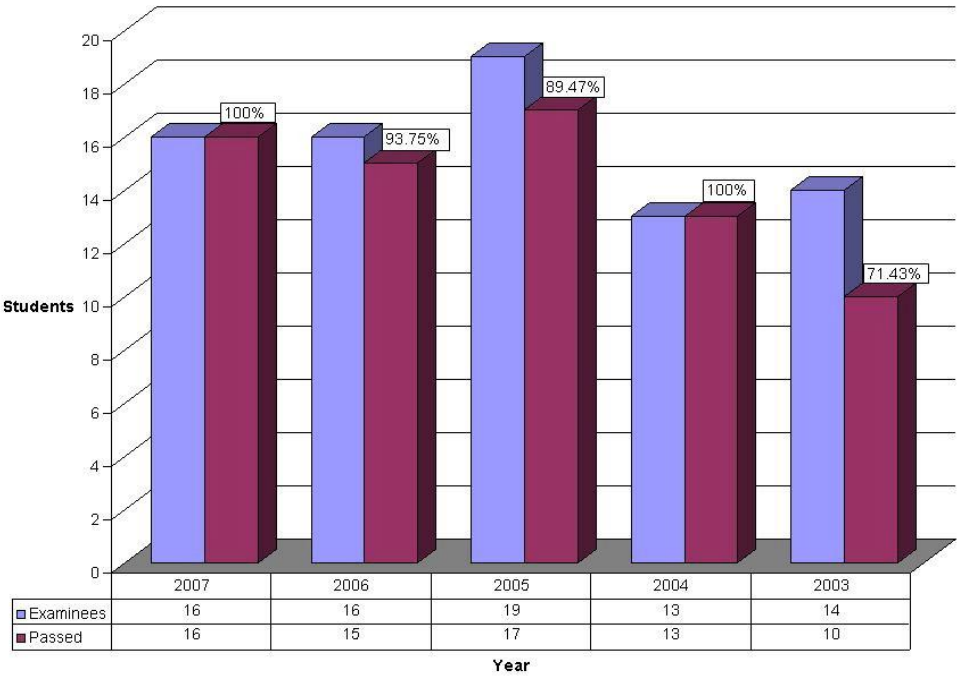
Evaluate the assessment approaches to date.
The assessment approaches are in line with the essential/guidelines furnished by the JRCNMT. Student pass rates support that these tools lead students to success.

Evaluate the assessment approaches to date.

Followup Response

NO ANSWER

For student or program/course outcome assessments, review the program's/department's five-year graph(s) of quantitative results or provide a brief narrative summary of qualitative results.



Review the program's/department's five-year graph(s) of quantitative results for student or program/course outcome assessments, or provide a brief narrative summary of qualitative results.

Unacceptable

Recommendation

THE GRAPH DOESN'T TELL ME ANYTHING. What does this mean? Needs a narrative comment to go along with this. The markings on the graph are impossible to read...bold your fonts or use larger or heavier type fonts that show up here. DJH

Followup Response

The graphs look much better in the printed version format.

The JRCNMT accrediting body for this program, requires that programs maintain an 80% pass-rate for a five-year period. Here is the supportive link to the JRCNMTs information, and the information is found under 'Standard E: Assessment, E1.2.

http://www.jrcnmt.org/chd_jrc/files/Final%20Standards%20rev5_2011.pdf

The 5-year graph shown here reports 71.43% for year 2003 (10

out of 14 students).

For year 2004, 100% (13 of 13 students)

For year 2005, 89.47% (17 of 19 students)

For year 2006, 93.7% (15 of 16 students)

For year 2007, 100% (16 of 16 students)

The 5-year average is 90.93%, which is above the 80% required by the JRCNMT.

Review the five-year graph(s) of course completions for the program/department. 1. Explain any increase or decrease that is more than a one-year anomaly.
What changes have been made in the curricula of the program/department because of the analysis of these results?
A capstone course, NMTT 2235, was added in 2003 through Academic Affairs so that students had access to a seminar course which is structured to help them study for national boards.

Have any changes been made in the curricula because of the analysis of these results?
Acceptable
Concern
A link to the catalog for this course would be beneficial.

Followup Response

A capstone review course was added to the curriculum in response to the variances in the pass rates. The capstone course is a summation of any and all of the content taught within the major NMTT courses.

The course syllabus is included here:

AMARILLO COLLEGE
NMTT-2235 NUCLEAR MEDICINE TECHNOLOGY SEMINAR
COURSE SYLLABUS-SUMMER
Mark E. Rowh, MA, CNMT, RTR, Assistant Professor

Course Description

NMTT 2235 is a capstone course focusing on the synthesis of professional knowledge, skills, and attitudes in preparation for professional employment and lifelong learning.

Statement of Purpose

This course is a required basic course and the final course in the degree plan for the Nuclear Medicine Technology major. The course is designed to prompt students to recall valuable information from previous NMTT courses, and in turn, prompt them to evaluate, analyze, synthesize, and engage in critical thinking skills with a comprehensive approach. The course includes comprehensive content from didactic and practicum courses in preparation for professional licensing/registration/certification.

Course Prerequisite

NMTT-2313. Students must complete all of the NMTT courses before taking this capstone course.

Required Course Materials

1. Textbook-Nuclear Medicine and PET/CT, Technology & Techniques, by Christian
2. Textbook-Fundamentals of Nuclear Pharmacy, by Saha
3. Textbook-Practical Mathematics in Nuclear Medicine Technology, by Wells
4. Textbook-Review of Nuclear Medicine Technology, by Steves
5. Any and all lecture notes, handouts, etc.

Course Credit

2 semester hours.

Course Goals/Objectives

Given the course textbooks, personal notes, handouts, and other course materials, the student should complete each of the following goals as evaluated by the instructor:

1. Review the terms, facts, theories, principles, and procedures related to each topic.
2. Apply the knowledge learned from the didactic/clinical experiences.
3. Review relevant content from the previous NMTT courses.
4. A final grade of 'C' or better and passage of the Comprehensive Exit Exam with a flat score of '75' or better will show course success (NO CURVING of GRADE. Ex: 74.5 does not equal 75).
5. Review NM instrumentation.
6. Review NM methodology.
7. Review NM radiopharmacy/radiochemistry.
8. Review patient care.
9. Do and examine various mock exams per syllabus.
10. Review all aspects of NM math calculations.
11. Review all material as indicated on course syllabus.
12. Pass comprehensive program exit exam per syllabus with flat passing grade of 75 or better.
13. Turn in competency profile form containing the required patient competencies.
14. Fill out registry/Texas Licensure application forms.

Required Classwork/Examinations

Students are required to participate in/out of class to meet the overall goals and objectives of the course content.

The course will consist of the following:

1. Homework-review all material indicated on course outline.
2. Mock Exams-as indicated on course outline.
3. Comprehensive Exit Exam-July 11, 2011, at 1pm.

Student must pass the Comprehensive Exit Exam with a flat score of '75' (no curving) to meet the goals/objectives of the capstone experience and to satisfy the requirements of the AAS degree in Nuclear Medicine Technology.

Success on homework/mock exams, Comprehensive Exit Exam, and the grading policy stated below will determine the final course grade.

It is extremely important that students do not get behind with their work.

Attendance/Grading Evaluation

Regular attendance is necessary for satisfactory achievement of this course. Attendance and tardiness will be recorded.

Class begins promptly at 9am.

Grading throughout the course is as follows:

1. Ten (10) points will be deducted from the final course grade for each absence.
2. Student must pass each mock exam with a minimal score of '75'. Failure to do so results in grade of 'F' for this course, and student must take course next summer to complete requirements.
3. A score of 'zero' will be given for any mock exam missed and grade of 'F' will be given for this course, and student must take course next summer to complete requirements.
4. Comprehensive Exit Exam must be passed with a flat grade of '75' (no curve) on July 11, 2011. In the event of failure, a grade of 'I' will be given until the student takes and passes the 2nd test on September 12, 2011. When passed, the grade will be changed according to the grading criteria.
5. A 2nd test will not be given until September 12, 2011, time TBA.
6. If the 2nd test is not passed, a grade of 'F' will be placed on the transcript, and the student must enroll in this capstone course next summer, 2012.
7. Letter grades are assigned as follows: A= 94.5-100 B=84.5-94.4 C=74.5-84.4 F=less than 74.5

Makeup/Withdrawal Policy

It is not possible for students to miss any aspect of the assigned work, since this is the capstone course.

The student cannot withdrawal from the class and expect to complete the goals/objectives of the capstone experience as scheduled.

Any withdrawal requires student to enroll in course in summer 2011 to finish degree plan.

Students with Disabilities

Any student who, because of a disabling condition, may require some special arrangements in order to meet course requirements should contact disability Services of Amarillo College at 345-5639 as soon as possible.

Grievance Procedures

A student who experiences problems with the course or the course instructor should make every attempt to resolve the problem with the course instructor. If that is not successful, the

student may appeal the decision to the program director, the chairperson of the Health Sciences Division, the dean of instruction, and the college president, in that order.

Student Rights/Responsibilities

Refer to the Student Rights and Responsibilities publication of Amarillo College, which is located on the Amarillo College Web site, www.actx.edu.

Electronic devices, such as: beepers, cell phones, or any other communication device is prohibited in the classroom.

Course Communication Methods

It is imperative that clear communication lines/methods have been established among students and the course instructor.

'AC Online' is the official communication site for email, grades, etc.

Student is provided with the instructors email address, class schedule, and relevant phone numbers on the 'summer 2010 schedule'.

Students sign the 'acknowledgement form' that they have received this information and the form is maintained within the student file.

Student Success in NM Seminar (see handout included)

Course Outline

Week I-May 17, 2011-Meet in Room 158 for Syllabus, Acknowledgement Form, and PPoint Questions

Homework: Review Book-Chapters 1,2,3

Supplemental info-Appendix A.

Math Book- Chapter 1, # 9-11, and all of Chapter 3.

Study Mock Exam 1 in Review Book.

Week II-May 24, 2011-Work from home via AC Online Module

Homework: Review Book-Chapters 4, 5,6,7.

Math Book-Chapter V-Radiopharmacy Math

Study Mock Exam 2 in Review Book.

Week III-May 31, 2011-Meet in Room 158

Do Mock exam 1 and 2 from review book for grade.

Homework: Review Book-Chapters 8, 9, 10, 11.

Math Book-Chapter VI-Clinical Procedures (include MUGA frame math)

Study Mock Exam 3 in Review Book.

Week IV-June 07, 2011-Work from home via AC Online Module

Homework: Review Book-Chapters 12, 13, 14.

Math Book-Chapter IV-Instrumentation

Study Mock 4 in Review Book

Week V-June 14, 2011-Meet in Room 158

Do mock exam 3 & 4 from review book for course grade.

Homework: Review Book-Chapters 15 and 16

Refresh therapy products pages 606-620.

Know interventional drugs for NM on pages 26 and 27 of Review Book.

Know QC/QA of gamma camera and PET and dose calibrator (use of phantoms, testing frequency, recognition of artifacts, COR,

intrinsic/extrinsic, FWHM, Chi Square)

Week VI-June 21, 2011-Work from home via AC Online Module.

Homework: Study Mock Exam 5 in Review Book.

Continue to study all material given.

Week VII-June 28, 2011-Meet in Room 158

Do mock exam 5 for course grade.

Do miscellaneous questions from PP.

Week VIII-July 5, 2010-Work from home via AC Online Module.

July 7-Mock Review (All day from 9-5)

July 8-Mock Exam 9-12:30.

Week IX-July 11, 2011-Comprehensive Final Exam at 1 pm in Room 158.

Bring 2 scantrons and calculator.

You will have until 5 pm to complete exam.

In addition, I have included the Master Educational/Instructional Plan for this program, which describes all of the course objectives for the program.

MASTER EDUCATIONAL PLAN

AMARILLO COLLEGE

NUCLEAR MEDICINE TECHNOLOGY PROGRAM

With student success in mind, and the need to promote educational quality and program stability, the Program aligns course content and objectives with the Accreditation Standards of the Joint Review Committee on Educational Programs in Nuclear Medicine Technology (JRCNMT) and the task analysis and task inventories provided by the Nuclear Medicine Technology Certification Board (NMTCB) and The American Registry of Radiologic Technologists (ARRT), respectively.

The educational plan incorporates a regimen of didactic and practicum coursework that is geared to enable the student to learn about the foundations of nuclear medicine in regard to optimal patient care, methodologies, instrumentation, physics, and the proper use of relevant radiopharmaceuticals.

The courses build upon themselves from one semester to the next, allowing the student to couple classroom knowledge with tactile learning gained within the clinical setting.

The Program offers the Associates in Applied Science Degree upon successful completion of the goals/objectives/competencies set forth within all courses listed below. The Program is approximately 24 months in length. Students must earn a total of 72 hours of college credit from the prerequisite and major NMT courses. Students are scheduled to attend approximately 1500 hours of clinical work within six practicum courses at various medical affiliates described on the Master Practicum Schedule.

Postsecondary educational content for the nuclear medicine technology student is aligned with the JRCNMT Standards as follows, and is aligned with institutional policy in obtaining the AAS degree.

Science and Math	**Credit Hours**
BIOL-2401-Human Anatomy & Physiology I	4
BIOL-2402-Human Anatomy & Physiology II	4
CHEM-1305-Introductory Chemistry I	3
Physics-Any College Physics	3
MATH-1314-College Algebra	3

Communication	
ENGL-1301-English Comp I	3
SPCH-1318-Interpersonal Communication	3
Humanities/Fine Arts	
Any Humanities/Fine Arts Course in College Catalog	3
Social/Behavioral Studies	
Any Social/Behavioral Course in College Catalog	3
Related Required Course	
HITT-1305-Medical Terminology	3
32 credit hours	

The major Nuclear Medicine Technology Program educational courses are listed in sequential order and are taken in six semesters when students enter the program according to admission policies. The major NMTT courses constitute 40 credit hours for a total of 72 credit hours in obtaining the AAS degree.

There are six practicum courses, which are taken each semester so that students build upon application of knowledge, critical thinking skills, recall, patient care skills, and cognitive and psychomotor skills.

First Semester

NMTT-1301-Introduction to Nuclear Medicine-3 credit hours

Define Nuclear Medicine Technology.
Review the history of the development of Nuclear Medicine Technology.
Identify the different modalities involved in Nuclear Medicine Technology.
Interpret abbreviations commonly used in Nuclear Medicine Technology.
Define Professionalism, Medical ethics, and Law.
Evaluate patient care scenarios regarding the medical professional's liability.
State and evaluate the 'Code of Ethics' of the ARRT and the NMTCB.
Discuss importance of membership to national, state, and local organizations.
Identify means of maintaining credentials via continuing education mandates.
Evaluate Federal Regulations: FDA, USP, and NRC.
Evaluate regulatory mandates from OSHA, HIPPA, and Standard (Universal) Precautions.
Evaluate safe radiation safety measures using time/distance/shielding principles (ALARA).
Calculate mathematic equations in regard to T/D/S.
Identify normal/abnormal ranges for assessment of the patient's vital signs.
Perform assessment of vital signs successfully.
Demonstrate proper IV and phlebotomy principles and skills.
Discuss proper routes of medication administration and clinical pharmacology.
Demonstrate competency in using proper body mechanics.
Identify and assess patient for emergency care.
Identify measures for proper oxygen administration.
Assess age-specific care of the patient-client.
Assess/interpret methods to manage a population that is culturally diverse.
Use ancillary equipment effectively.

Pass major exams and other assignments as given with final course grade of 74.5 (C) or better.

NMTT-1313-Nuclear Medicine Physics-3 credit hours

Review basic atomic structure.

Discuss and analyze various types of radioactive decay.

Understand various methods of radiation production and decay processes.

Interpret radioactive decay scheme.

Analyze the periodic table of elements.

Apply basic principles of radiation safety and protection to patients and occupational workers.

Calculate units of radiation measurements (rem, rad, sievert, gray).

Discuss attenuation and transmission of photons.

Identify the interactions of charged particles with matter and production of radioactive energy.

Calculate exposure rate constants.

Calculate effective half-life calculations from biological and physical half-lives.

Pass major exams and other assignments as given with final course grade of 74.5 (C) or better.

NMTT-1266-Practicum I-2 credit hours

Maintain/operate departmental equipment.

Maintain/operate auxiliary equipment.

Provide proper and appropriate patient care as needed.

Communicate effectively with medical staff, patients and their families.

Provide safe/sanitary conditions for patients using OSHA and Standard Precautions.

Obtain pertinent patient history for each exam and check indications/contraindications.

Prepare patients properly for imaging.

Select/administer the appropriate radiopharmaceutical by the proper route.

Prepare imaging equipment, computer, auxiliary equipment and acquire images per protocol.

Evaluate/process computer-generated data.

Prepare patient to perform cardiac monitoring and stress testing.

Prepare/administer interventional pharmacologic agents.

Obtain samples for non-imaging studies.

Calculate/evaluate results for non-imaging studies.

Interpret the physician’s orders to ensure optimal patient exam outcomes.

Utilize appropriate radiation safety standards through time/distance/shielding principles.

Perform daily QC measures on instrumentation as prescribed.

Perform patient competency procedures per syllabus with passing grade of 74.5 (C) or better.

Pass clinical supervisor’s performance of student evaluations per syllabus with C or better.

Pass faculty evaluation of student performance per syllabus with C or better.

Second Semester

NMTT-2301-Radiochemistry and Radiopharmacy-3 credit hours

Calculate radioactive decay using half-life.
Analyze decay charts.
Analyze universal decay chart.
Perform pre-calibration calculations.
Calculate specific concentration.
Calculate dose volume.
Calculate total activity needed to provide specific number of kits or doses.
Calculate total volume to be added to kit.
Calculate patient dosage based on activity per unit weight.
Perform unit dose adjustments.
Perform pediatric dose adjustments using Clark's formula.
Perform pediatric dose adjustments using body surface area (BSA).
Perform pediatric dose adjustments using Talbot's nomogram.
Calculate minimum/maximum pediatric dosage.
Calculate MAA lung perfusion particles.
Calculate I-131 capsule dosage.
Calculate Mo-99 generator yield based on efficiency of the generator.
Calculate Mo-99/Tc99m generator yield based on decay.
Calculate allowable Mo-99 content in generator eluate.
Calculate allowable alumina content in generator eluate.
Calculate eluate expiration time based on Mo-99 content.
Perform chromatography calculations.
Identify characteristics of radiopharmaceuticals from task analysis.
Identify half-lives of radiopharmaceuticals listed on task analysis.
Define valence state of Tc99m in relation to prescribed kits.
Identify various types of generators.
Identify chelating agents, reducing agents, additives, preservatives in kits.
Describe the operations of a nuclear pharmacy.
Identify diagnostic uses of radiopharmaceuticals in nuclear medicine.
Identify therapeutic uses of radiopharmaceuticals.
Describe quality control measures in the use of radiopharmaceuticals.
Describe the use of monoclonal antibodies.
Define molecular imaging.
Pass major exams and other graded assignments with final grade of C or better.

NMTT-1267-Practicum II-2 credit hours

Maintain/operate departmental equipment.
Maintain/operate auxiliary equipment.
Provide proper and appropriate patient care as needed.
Communicate effectively with medical staff, patients and their families.

Provide safe/sanitary conditions for patients using OSHA and Standard Precautions.

Obtain pertinent patient history for each exam and check indications/contraindications.

Prepare patients properly for imaging.

Select/administer the appropriate radiopharmaceutical by the proper route.

Prepare imaging equipment, computer, auxiliary equipment and acquire images per protocol.

Evaluate/process computer-generated data.

Prepare patient to perform cardiac monitoring and stress testing.

Prepare/administer interventional pharmacologic agents.

Obtain samples for non-imaging studies.

Calculate/evaluate results for non-imaging studies.

Interpret the physician's orders to ensure optimal patient exam outcomes.

Utilize appropriate radiation safety standards through time/distance/shielding principles.

Perform daily QC measures on instrumentation as prescribed.

Perform patient competency procedures per syllabus with passing grade of 74.5 (C) or better.

Pass clinical supervisor's performance of student evaluations per syllabus with C or better.

Pass faculty evaluation of student performance per syllabus with C or better.

RADR-2340-Cross-Sectional Anatomy for Medical Imaging-3 credit hours

Describe anatomic relationships as depicted on three-dimensional images.

Define transverse, coronal, and sagittal image reconstructions.

Identify anatomy on any given image.

Pass all major exams and other graded assignments with final passing grade of C or better.

Third Semester

NMTT-2333-Advanced Positron Emission Tomography/Fusion Technology-3 credit hours

Review PET physics.

Identify radiopharmaceuticals used in PET.

Describe the uses of radiopharmaceuticals in PET.

Describe design of PET scanners, dedicated and hybrid.

Describe detectors used in PET.

Describe data acquisition in PET.

Describe how PET data is displayed.

Describe quantitative information from PET image formation.

Analyze the theory behind fusion technology in relation to image fusion.

Evaluate x-ray physics and x-ray production from CT scanners.

Evaluate CT image reconstruction and image data acquisition.

Describe CT image display and CT imaging protocols.

Pass all major exams and other graded assignments with final passing grade of C or better.

NMTT-2266-Practicum III-2 credit hours

Maintain/operate departmental equipment.
Maintain/operate auxiliary equipment.
Provide proper and appropriate patient care as needed.
Communicate effectively with medical staff, patients and their families.
Provide safe/sanitary conditions for patients using OSHA and Standard Precautions.
Obtain pertinent patient history for each exam and check indications/contraindications.
Prepare patients properly for imaging.
Select/administer the appropriate radiopharmaceutical by the proper route.
Prepare imaging equipment, computer, auxiliary equipment and acquire images per protocol.
Evaluate/process computer-generated data.
Prepare patient to perform cardiac monitoring and stress testing.
Prepare/administer interventional pharmacologic agents.
Obtain samples for non-imaging studies.
Calculate/evaluate results for non-imaging studies.
Interpret the physician's orders to ensure optimal patient exam outcomes.
Utilize appropriate radiation safety standards through time/distance/shielding principles.
Perform daily QC measures on instrumentation as prescribed.
Perform patient competency procedures per syllabus with passing grade of 74.5 (C) or better.
Pass clinical supervisor's performance of student evaluations per syllabus with C or better.
Pass faculty evaluation of student performance per syllabus with C or better.

Fourth Semester

NMTT-2309-Nuclear Medicine Methodology II-3 credit hours

Review A&P of skeleton/joints.
Evaluate imaging techniques for bone SPECT/spot views/3 & 4 phase.
Discuss reasons for bone imaging.
Discuss palliative care of bone pain.
Discuss radiopharmaceuticals used for bone imaging and bone pain therapy.
Recognize bone pathology.
Review A&P of genitourinary system.
Discuss measurement of ERPF and GFR.
Evaluate the use of radiopharmaceuticals and their characteristics for ideal imaging.
Compare/contrast renal radiopharmaceuticals (functional and morphological).
Evaluate the compensatory mechanisms of renovascular hypertension and hormones produced.
Evaluate the negative feedback system for maintaining normal GFR/ERPF during RAS.
Evaluate major indications for radionuclide renal scintigraphy.
Evaluate renal scintigraphy augmented with ACE inhibitor.

Recognize renal pathology.
Evaluate vesicoureteral reflux.
Recognize testicular imaging techniques.
Review A&P of respiratory system.
Evaluate pathophysiology of the respiratory system.
Evaluate ventilation and perfusion imaging techniques.
Discuss quantitation of lung segments.
Recognize the use of gas delivery and re-breathiing units for lung ventilation studies.
Compare/contrast the radiopharmaceuticals used for ventilation and perfusion lung imaging.
Review A&P of cardiovascular system.
Evaluate common conduction abnormalities of the heart.
Evaluate heart rhythm EKG strips.
Perform proper chest lead placement for stress testing.
Compare/contrast radiopharmaceuticals used for clinical cardiac imaging.
Evaluate the use of planar and SPECT for cardiac data acquisition.
Discuss cinematic display, attenuation correction methods.
Evaluate indications/contraindications for stress testing.
Recognize drugs that affect exercise test response and interpretation.
Prepare patient properly for stress test.
Recognize Bruce and modified Bruce treadmill protocols.
Recognize reasons to stop exercise.
Recognize/compare/contrast interventional pharmacologic agents and use properly.
Determine proper patient dosages for pharmacologic stress agents.
Recognize myocardial uptake patterns of myocardial perfusion agents.
Recognize means/methods to gate patients during myocardial perfusion studies.
Recognize/differentiate 3D reconstructions of heart muscle.
Evaluate PET imaging of heart.
Evaluate myocardial viability and metabolism.
Evaluate ventricular function during MUGA/first-pass studies.
Prepare RBCs for MUGA.
Recognize cardiotoxic chemotherapeutic drugs.
Recognize radiotracers used for first-pass evaluation.
Evaluate myocardial necrosis reading scale.
Analyze F-18-FDGmetabolism principles.
Discuss patient preparation of FDG imaging.
Recognize normal/abnormal distribution patterns for FDG.
Recognize normal variations of FDG localization.
Discuss/recognize PET oncology applications.
Recognize pathology in PET oncology images.
Evaluate technical considerations when imaging the pediatric patient.
Perform proper clinical applications on the pediatric patient.
Recognize potential pitfalls in pediatric PET imaging.

Evaluate proper injection techniques of the pediatric patient.
Communicate effectively with the pediatric patient and family.
Evaluate tourniquet effect during injection of radionuclide.
Recognize pathology on bone images of the pediatric patient.
Recognize child abuse bone imaging patterns.
Evaluate cystography and cardiac techniques.
Evaluate hepatobiliary Meckel's, GER, scrotum imaging techniques in the pediatric patient.
Evaluate lab values for all body systems.
Calculate LVEF with/without normalization.
Calculate cardiac cycles for MUGA.
Calculate expected bladder capacity for voiding cystogram.
Calculate lung quantitation.
Calculate quantitation of total bladder volume, residual bladder volume, and reflux.
Perform data acquisition process for each body system indicated.
Pass all exams and other graded assignments with final grade of C or better.

NMTT-2366-Practicum IV-3 credit hours

Maintain/operate departmental equipment.
Maintain/operate auxiliary equipment.
Provide proper and appropriate patient care as needed.
Communicate effectively with medical staff, patients and their families.
Provide safe/sanitary conditions for patients using OSHA and Standard Precautions.
Obtain pertinent patient history for each exam and check indications/contraindications.
Prepare patients properly for imaging.
Select/administer the appropriate radiopharmaceutical by the proper route.
Prepare imaging equipment, computer, auxiliary equipment and acquire images per protocol.
Evaluate/process computer-generated data.
Prepare patient to perform cardiac monitoring and stress testing.
Prepare/administer interventional pharmacologic agents.
Obtain samples for non-imaging studies.
Calculate/evaluate results for non-imaging studies.
Interpret the physician's orders to ensure optimal patient exam outcomes.
Utilize appropriate radiation safety standards through time/distance/shielding principles.
Perform daily QC measures on instrumentation as prescribed.
Perform patient competency procedures per syllabus with passing grade of 74.5 (C) or better.
Pass clinical supervisor's performance of student evaluations per syllabus with C or better.
Pass faculty evaluation of student performance per syllabus with C or better.

Fifth Semester

NMTT-2313-Nuclear Medicine Methodology III-3 credit hours

Review A&P of the endocrine system

Discuss radionuclides used for thyroid imaging.

Discuss role of radioiodine uptake, thyroid scan, whole body imaging for RAI therapy planning.

Evaluate symptoms of hyperthyroidism/hypothyroidism.

Evaluate lab values of the endocrine system.

Recognize pathology of the endocrine system.

Recognize radiopharmaceuticals for adrenal imaging.

Recognize radiopharmaceuticals for parathyroid imaging.

Differentiate the clinical features of euthyroidism.

Recognize dose ranges thyroid imaging, whole-body imaging, hyperthyroidism, ablation, mets.

Manage the thyroid cancer patient based on risk assessment.

Evaluate perchlorate washout test for organification defect.

Recognize 3 basic approaches to selecting dose range of I-131 for hyperthyroidism.

Describe somatostatin receptor imaging techniques.

Review A&P of CNS.

Describe CSF dynamics.

Discuss properties of radiopharmaceuticals for BBB imaging and SPECT.

Recognize clinical indications for planar brain imaging, PET imaging, SPECT imaging of brain.

Evaluate concepts of brain death.

Recognize pathology.

Evaluate shuntograms, cisternograms, and CSF leak.

Evaluate clinical PET and SPECT studies.

Describe use of PET for epilepsy.

Review A&P of GI system.

Describe technique for salivary gland imaging.

Describe/evaluate techniques for esophageal transit.

Describe/evaluate GER procedures and imaging techniques for pulmonary aspiration, GER index.

Recognize clinical aspects of gastric emptying studies.

Evaluate imaging techniques for hepatobiliary imaging, including use of morphine & CCK.

Label RBCs for hemangioma.

Recognize imaging techniques for liver/spleen, GI bleeding.

Describe principles of Urea breath test.

Recognize pathology for GI system.

Discuss/analyze the role of nuclear medicine in evaluating patients for infections/tumors.

Compare/contrast use of gallium, indium, and technesium for infection imaging.

Describe imaging procedures for parathyroid, prostate, colorectal, neuroendocrine tumors.

Describe imaging procedures for adrenal, breast, and lung tumors.

Recognize all radiopharmaceuticals used for infection/tumor imaging.

Analyze lab values.

Discuss radioimmunotherapy for lymphoma.

Discuss radionuclide therapy for metastatic bone pain.

Evaluate polycythemia vera, malignant effusion.

Recognize methods for using selective internal radiation therapy (SIRT-microspheres)

Review A&P of hematopoietic system.

Describe RBC life span/survival.

Evaluate hematocrit/plasmacrit values.

Describe technique for splenic sequestration.

Describe methods to label RBCs with Cr-51 ascorbic acid.

Determine relevance of plasma volume, total blood volume, RBC volume.

Analyze red cell survival graphs.

Calculate GBEF.

Calculate GER.

Calculate Gastric Emptying Time.

Calculate thyroid uptake with/without decayed standard.

Prepare solutions from bulk solutions (dilutions).

Calculate plasma volume.

Calculate red cell mass.

Calculate whole blood volume with dual nuclide method.

Calculate concentration of a solution.

Perform data acquisition processing for each system indicated.

Pass all exams and other graded assignments with final grade of C or better.

NMTT-1309-Nuclear Medicine Instrumentation-3 credit hours

Describe/Evaluate uses of medical informatics.

Describe principles of radiation detection.

Evaluate considerations of counting and imaging equipment.

Describe theory of operation of radiation detector.

Describe construction and operation of gas-filled detectors.

Evaluate operation of scintillation devices and components within.

Describe spectrometry as seen with scintillation instruments.

Discuss/evaluate use of collimators.

Describe basics of computers and use in nuclear medicine.

Describe differences in analog and digital versions of images in nuclear medicine.

Evaluate proper use of Geiger-Mueller in radiation detection.

Evaluate quality control/assurance measures for gamma cameras, dose calibrators, well counter

Evaluate uniform/nonuniform images of gamma camera floods.

Describe/recognize purpose of center-of-rotation, daily floods, and high-count floods.

Investigate use of SPECT, QC, and quality control measures.
Describe principles of PET imaging and artifacts.
Perform and evaluate QC measures for PET.
Differentiate between intrinsic/extrinsic testing.
Describe the pulse-height analyzer (PHA).
Describe film-processor quality control.
Describe spatial resolution and sensitivity.
Describe image formation, filtered-back projection, positioning logic.
Describe gain.
Describe photographic image formation.
Recognize principles of dose calibrator constancy, accuracy, linearity, geometry.
Demonstrate use of phantoms for camera QC.
Calculate acceptable ranges for dose calibrator.
Calculate percent error for dose calibrator accuracy and constancy.
Calculate dose calibrator geometry and percent error for syringes and volumes.
Calculate dose calibrator linearity of response and percent error.
Calculate and use correction factors for dose calibrator geometry and linearity.
Calculate energy resolution (FWHM).
Calculate Chi Square.
Calculate well counter efficiency.
Calculate window settings: u/l discriminators and center-line plus percent window.
Calculate camera sensitivity.
Calculate SPECT acquisition time and counts per projection.
Obtain desired flood/phantom fill activities.
Calculate total pixels by matrix size, pixel calibration, computer memory requirements.
Calculate pipette precision.
Calculate centrifugal force (g-force) given radius and rotating speed.
Calculate centrifuge: relative centrifugal force vs time.
Pass all exams and other graded assignments with final grade of C or better.

NMTT-2367-Practicum V-3 credit hours

Maintain/operate departmental equipment.
Maintain/operate auxiliary equipment.
Provide proper and appropriate patient care as needed.
Communicate effectively with medical staff, patients and their families.
Provide safe/sanitary conditions for patients using OSHA and Standard Precautions.
Obtain pertinent patient history for each exam and check indications/contraindications.
Prepare patients properly for imaging.
Select/administer the appropriate radiopharmaceutical by the proper route.
Prepare imaging equipment, computer, auxiliary equipment and acquire images per protocol.
Evaluate/process computer-generated data.

Prepare patient to perform cardiac monitoring and stress testing.
Prepare/administer interventional pharmacologic agents.
Obtain samples for non-imaging studies.
Calculate/evaluate results for non-imaging studies.
Interpret the physician's orders to ensure optimal patient exam outcomes.
Utilize appropriate radiation safety standards through time/distance/shielding principles.
Perform daily QC measures on instrumentation as prescribed.
Perform patient competency procedures per syllabus with passing grade of 74.5 (C) or better.
Pass clinical supervisor's performance of student evaluations per syllabus with C or better.
Pass faculty evaluation of student performance per syllabus with C or better.

Sixth Semester

NMTT-2235-Nuclear Medicine Technology Seminar-2 hours

Review NM instrumentation.
Review NM methodology.
Review NM radiopharmacy/radiochemistry.
Review patient care.
Do and examine various mock exams per syllabus.
Review all aspects of NM math calculations.
Review all material as indicated on course syllabus.
Pass comprehensive program exit exam per syllabus with flat passing grade of 75 or better.
Turn in competency profile form containing the required patient competencies.
Fill out registry/Texas Licensure application forms.

NMTT-2267-Practicum VI-2 credit hours

Maintain/operate departmental equipment.
Maintain/operate auxiliary equipment.
Provide proper and appropriate patient care as needed.
Communicate effectively with medical staff, patients and their families.
Provide safe/sanitary conditions for patients using OSHA and Standard Precautions.
Obtain pertinent patient history for each exam and check indications/contraindications.
Prepare patients properly for imaging.
Select/administer the appropriate radiopharmaceutical by the proper route.
Prepare imaging equipment, computer, auxiliary equipment and acquire images per protocol.
Evaluate/process computer-generated data.
Prepare patient to perform cardiac monitoring and stress testing.
Prepare/administer interventional pharmacologic agents.
Obtain samples for non-imaging studies.

Calculate/evaluate results for non-imaging studies.

Interpret the physician's orders to ensure optimal patient exam outcomes.

Utilize appropriate radiation safety standards through time/distance/shielding principles.

Perform daily QC measures on instrumentation as prescribed.

Perform patient competency procedures per syllabus with passing grade of 74.5 (C) or better.

Pass clinical supervisor's performance of student evaluations per syllabus with C or better.

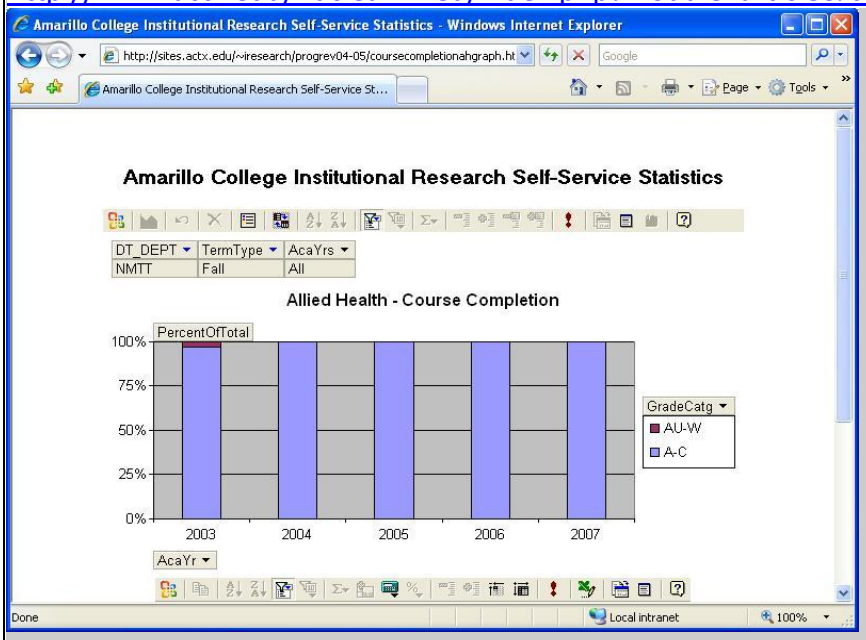
Pass faculty evaluation of student performance per syllabus with C or better.

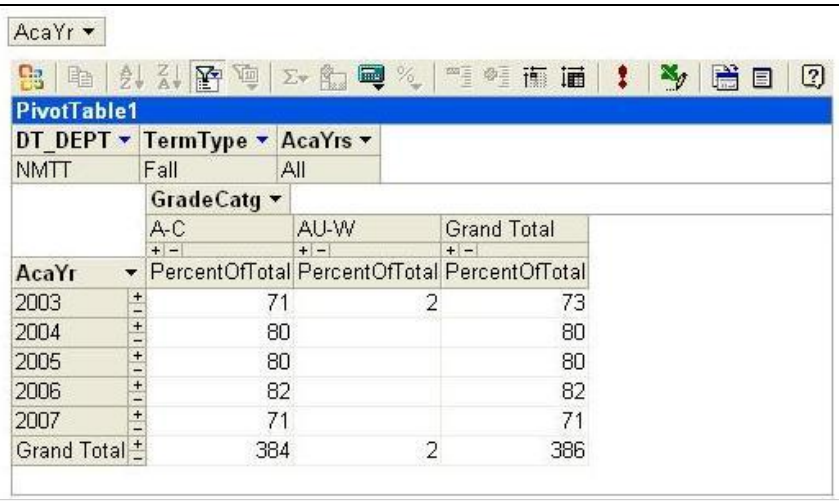
NOTE: The AAS degree is not awarded until student has completed all designated coursework via the degree evaluation.

The comprehensive exit exam is the final exam to be passed before the diploma is awarded.

A link to the NMTT program website is also provided to show that the capstone course-NMTT-2235 has been added.

http://www.actx.edu/nuclear_med/index.php?module=article&id=5





AcaYr

PivotTable1

DT_DEPT	TermType	AcaYrs
NMTT	Fall	All

	GradeCatg		
	A-C	AU-W	Grand Total
AcaYr	PercentOfTotal	PercentOfTotal	PercentOfTotal
2003	71	2	73
2004	80		80
2005	80		80
2006	82		82
2007	71		71
Grand Total	384	2	386

Does the review of the five-year graph(s) of course completions demonstrate the use of analysis to implement a plan of action for retention? Is the analysis of any increase or decrease that is more than a one-year anomaly accurate?

Unacceptable

Recommendation

This information is so badly done that it is useless. The graphs, along with narratives must be readable, understandable, clearly marked and explained. Why have them if they make no sense and can't be read. DJH

Followup Response

The graphs are readable from a printable version, and clearly show that retention and attrition for the NMTT program are not a concern for the PD at this time. There is no need for an elaborate form of narrative, although a simple one will help the assessors.

When reviewing the statistics for years 2003-2007, all of the years show that 100% of students enrolled in the courses completed them, all but year 2003, and that year shows 98% retention.

Provide the program's/department's plan of action for improving any identified problem or results from the implementation of the plan of action.

This is not a problem area for the Nuclear Medicine Technology Program so there is no plan of action.

Will the plan of action likely improve the number of course completers?

Acceptable

Concern

As before, this reader as well as the accreditation team, has no way to validate this statement without a reference somewhere.

Followup Response

NO ANSWER

Does the program/department provide for alternative methods of awarding credit? (Select all that apply).

Tech-Prep CLEP Advanced Placement Credit by Exam Credit for Experience

Has the program/department provided for alternative methods of awarding credit? If not, which alternative methods would be recommended?

What approaches are used to assure outcomes are comparable to those expected of students who enrolled and completed the course?

Acceptable

Concern

As before, this reader as well as the accreditation team, has no way to validate this statement without a reference somewhere.

Followup Response

There is no action plan in place at this time, because of the programs very low attrition rates as supported with the graphs above.

The NMTT program does not provide alternative methods of awarding credits to students, unless there are substitutions made from transcripts from other colleges. I have provided the link to AC's 'Exception to the Curriculum' form which relies on an approval process. Once approved, the courses can be substituted when relevant to the degree plan.

http://www.actx.edu/forms/files/filecabinet/folder1/curriculum_exception.pdf

I have also provided the link to the degree plan for this program:

http://www.actx.edu/nuclear_med/index.php?module=article&id=5

For general education and/or core curriculum required by this program/department, identify the relevant competencies approved by the Academic Affairs Committee (See Catalog section entitled Degrees and Certificates: General Education Competencies).

Mathematical Skills

Communication Skills

Technological Skills Ethics

Integrity & Diversity Application of Skills

Have all relevant competencies for general education and/or core curriculum been identified for this program/department? If not, which are obviously a part of this program/department's general education competencies?

Acceptable

Concern

While the information is accurate, hyperlinking would be helpful and make it easy for reviewers. DJH

Followup Response

NO ANSWER

Explain how outcomes for the competencies have been assessed and achieved and provide links to the documentation.

Mathematics-through major exams and quizzes, and artifacts are sent to the Mathematics subcommittee of the Assessment Committee in the Fall and Spring semesters so that an outside group can assess student work. Documentation of this external assessment is located in the Institutional Effectiveness and Assessment area of the college and is required by SACS.

Communication skills are evaluated at the medical affiliates by clinical supervisors and technologists who observe students performing patient care studies. Documentation is located in paper form in the PD's office. This is an external form of assessment, which is required by SACS.

Technological Skills are also evaluated at clinical sites by technologists as students process patient data from computers. Again, this is assessed externally, and documentation is located in the PDs office in the student files.

Integrity & Diversity Application of Skills-Students learn professional standards in the Introduction to Nuclear Medicine course their first semester. They are given exams over the content, which includes medical ethics and law and professionalism. They are graded externally by technologists in the patient care arena. Documentation is located in the PDs office in

each student file.

Is the explanation of assessment approach(es) for general education competencies (outcomes) thorough? Is the analysis of the results accurate? Have links to documentation which verify the assessment results been included?

Unacceptable

Recommendation

Be more specific...what artifacts? As well, there is no way to validate this information. The additional information doesn't seem to be that helpful in checking the validiity of the statements above. This reader is unclear as to how these materials help us validate these statements. DJH

Followup Response

The relevant competencies have been identified by the program as supported by comparing the Amarillo College Catalog with the requirements of the Joint Review Committee on Education in Nuclear Medicine Technology. Here is the link to the required general education course for the AAS degree:

http://catalog.actx.edu/preview_program.php?catoid=10&poid=1632

The link to the JRCNMT standards is provided, as well. Standard C, C2.1 on page 7 provides the information for postsecondary educational content and C2.2 provides direction on the professional nuclear medicine technology curriculum. C2.3 provides information on problem solving, critical thinking skills, appreciation and respect for cultural diversity, and C2.4 addresses the supervised clinical education.

http://www.jrcnmt.org/chd_jrc/files/Final%20Standards%20rev5_2011.pdf

When comparing the College catalog to that of the JRCNMT Standards, the general prerequisites and program core courses are aligned so that upon completion, the AAS degree is awarded.

Outline a plan for correcting any weaknesses.

There do not seem to be any weaknesses in this area.

If assessment results and analysis are included, is there a plan for correcting any weaknesses included?

Acceptable

Concern

Have no way to validate.

Followup Response

NO ANSWER

Do students/graduates in this program/department have to be certified or licensed?

yes

Review the results for certification/licensure results of the program/department and/or job placement for the past five years. Explain any increase or decrease that is more than one-year anomaly.

The certification pass rates are:

2003-72% pass rate

This was a transition period of one PD retiring and the new one taking over those duties as a first-time instructor. This was of concern by the new PD from the beginning as these students were instructed by the retiring PD for one year and then by the new PD for one year. The students did pass the registry by 100% the 2nd try.

2004-100% pass rate

2005-89% pass rate

In the class of 2004, 2 students did not pass the comprehensive final exam as is required for exiting the program. The students were required to join the class of 2005 the following summer to continue their studies and repeat the comprehensive exit exam, which they passed. However, both students failed the national board exams in 2005, which accounts for this drop. The regular class members of 2005 all passed with 100%. The two that carried over from 2004 caused the drop in these stats.

2006-94% pass rate

One student failed the national boards, causing this percentage.

2007-100% pass rate

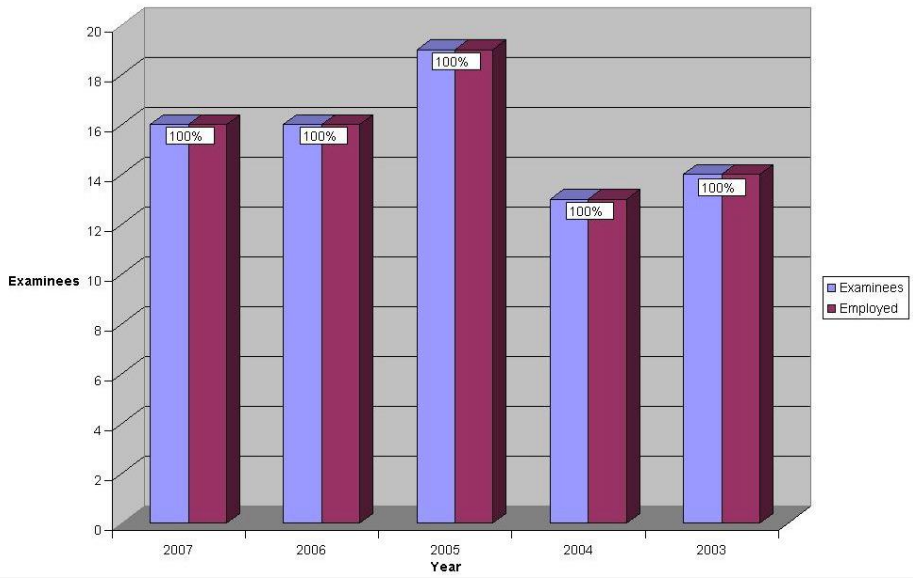
Provide a plan of action for the identified problem.
In 2003, the PD added the capstone course as a mandatory course for all students before taking the comprehensive exit exam, and consequently, the national boards.

IF students/graduates in this program/department have to be certified or licensed, do the results over the past five-years indicate that certification/licensure have been equal to or greater than the average of the past five-years AND/OR equal to the statewide or national benchmark for this certification/licensure? IF NOT, does the analysis and plan of action appear that the program/department has thoroughly reviewed the problem?
Acceptable
Concern
As with other comments, the claims appear to be valid, but this reader has no way to check this. While this may be appropriate, this readers understanding of the process of review is that hyperlinking to appropriate validation of claims is essential to the accreditation process. DJH

Is the program's/department's plan of action for improving any identified problem or results likely to improve the certification/licensure results? Did program/department explain any increase or decrease that is more than a one-year anomaly? Does the plan correct any weaknesses included? If not, what is missing?
NA

Followup Response
NO ANSWER

R.) IF the department or program offers one or more technical programs (Associate in Applied Science or Certificates), has the program/department included an explanation of the job placement success during the past five years AND are these results at least equal to the statewide annual benchmark (90%)? Is the analysis of any increase or decrease that is more than a one-year anomaly accurate?



IF the department or program offers one or more technical programs (Associate in Applied Science or Certificates), has the program/department included an explanation of the job placement success during the past five years? Is the analysis of any increase or decrease that is more than a one-year anomaly accurate?

Unacceptable

Recommendation

Fix the graphs and make them readable and understandable. DJH

Followup Response

There are no yearly anomalies here, but the graphs show that job placement is 100% for all graduates of this program for the 5-year period. The printable version of the comparative graphs are clear, while the online version is not satisfactory and should look much better given the computer program.

S.) Provide a plan of action for the identified problem.

No problems identified with job placement as the job market is strong across the country.

Is the program's/department's plan of action for improving any identified problem or results likely to improve the job placement rate for graduates of the technical program(s)?

Unacceptable

Recommendation

Since the graphs are unreadable, this question may have been answered before, but this reader is unable to know. DJH

Followup Response

The graphs are clear in the printed version, and it is clear that

there are no problems in this area.

III. Curricula

Does the program/department have affiliation(s)/agreement(s)/contract(s) with any other entity for the purpose of delivering instructional content?
yes
Review the affiliation(s)/agreement(s)/contract(s), consider Amarillo College's mission, and then make a recommendation to:
Provide an analysis of the review.
The affiliation contract is adequate. Any revisions of the contract must go through legal counsel. The affiliation agreement is generic for all programs except for Dental Assisting. It is specific in identifying the roles of Amarillo College and the medical affiliates for allowing students to gain knowledge through hands-on learning experiences, which is supported by the methodlogies that are learned in the classroom setting. Students are held responsible for using equipment in a respectful manner, as well as being required to follow the institutional policies/regulations as any normal employee of the affiliate. This is very important in that students are exposed to patient care arenas that are controlled so that students, patients, and employees are protected through regulatory measures.

If the program/department has affiliation(s)/agreement(s) with any other entity for the purpose of delivering instructional content, do these affiliations/agreements make it clear that Amarillo College maintains the responsibility for controlling all aspects of the educational program? Has the College ensured the quality of the program with these affiliations/agreements? If so, how? What is the schedule for reviewing the quality of these programs? Has the College ensured that programs remain with Amarillo College's mission?
Unacceptable
Concern
In checking out this information, it appears correct,but this type of statement really does need a hyperlink to the contract, so that the statements can be validated, for ease of use by the accreditation team. DJH

Followup Response

NO ANSWER

How many curricula changes were approved by the Academic Affairs Committee during the past five years?
5
Which steps in the curricula change process had faculty involvement prior to submitting the curricula proposal(s) to the Academic Affairs Committee?
The Program Director initiated the changes by following the approval criteria of the Academic Affairs Committee. The required paperwork was turned in to the committee members for discussion at the February 2003 and December 2005 meetings. The Program Director in Nuclear Medicine Technology is the sole instructor for this coursework, however, as required, the PD summoned the approval of members of the advisory board to get the changes initiated.

Was the departmental faculty involvement documented and broad in representation? If not, what steps within curricula change process should have had more proof of greater departmental faculty involvement? Is the primary responsibility for curricula changes under the control of faculty? Does the program have a qualified faculty member in charge of the program's coordination and curriculum development?
Unacceptable
Recommendation
Hyperlinnk to these changes is needed. As with most of the suggestions, these additional materials are not helpful in actually validating these statements. Specifics related to the statements are needed that show us exactly which changes were made to what. DJH

Followup Response

The Program Director has the sole responsibility in managing and maintaining the relevant NMTT curriculum.

In January 2003, the PD approached the Advisory Board Committee members via phone to gain their support to add a capstone course to the curriculum so that there was an avenue to gage their comprehension and synchronize study methods in preparation for national board exams. It is noted that the course, NMTT-2235-Nuclear Medicine Technology Seminar, is an approved course within the Workforce Education Course Manual (WECM) at this link:

http://www.thecb.state.tx.us/aar/undergraduateed/workforceed/wecm/wecmcourse.cfm

The PD gained support of adding NMTT 2235-Nuclear Medicine Technology Seminar to the curriculum, and a letter addressed to the Academic Affairs Committee stating their support is on file in the PD's office and is dated January 15, 2003. There is not an official link to the minutes, because the spring Advisory Committee did not meet in person.

The Academic Affairs Committee approved the additional course on February 11, 2003. The writer attempted at this late date to include the Web link to the minutes, but the minutes are not available in the archives. The archives only include minutes from 2004 to present. Instead, the letter of approval is on file within the PD's office for your review.

Is any program within the department a technical program (e.g. AAS or certificate)?
yes
When was the last Advisory Committee meeting?
The last Advisory Board meeting was October 24, 2007 as is shown on the archive. The Nuclear MedicineTechnology Program is required to have two advisory board meetings each year as is stated in the essentials and guidelines of the Joint Review Committee on Education in Nuclear Medicine Technology, our accrediting body.
Provide a link to the minutes of the last Advisory Committee(s) minutes in the Electronic Archives.
www.actx.edu/archives/index.php
Provide a link to the appropriate committee membership of the Advisory Committee(s) in the Electronic Archives.
www.actx.edu/archives/files/uplink/Allied_Health_Advisory_Committees_Membership_2007_2008.pdf

If the department offers an AAS and/or certificate, do the minutes of the Advisory Committee prove that the curricula for each program is appropriate to the degree and/or certificate? Has the Advisory Committee been consulted in designing each degree and certificate? Has the Advisory Committee met at least once a year and been provided ample opportunity to guide the faculty in curricula changes?

Unacceptable
Recommendation
This is the type of information that would be helpful all through this review. If this is not applicable, it would be helpful to say why it's not applicable to this program review, eliminating the need to WONDER WHY it wasn't answered. DJH
Is the membership of the Advisory Committee broad enough to provide the scope of advice necessary for input on curricula? If not, what changes are recommended to the program/department?
Unacceptable
Recommendation
Not answered DJH

Followup Response

The Advisory Board for the NMTT program meets twice each year, once in the fall and once in the spring. This is in alignment with the Accreditation Standards for Nuclear Medicine Technologist Education from the Joint Review committee on Education in Nuclear Medicine Technology, Standard E1.3, page 10. the link to this document is below:

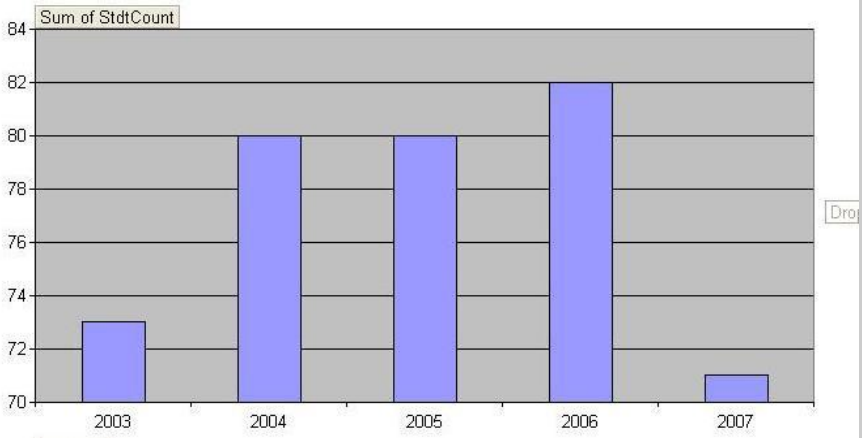
http://www.jrcnmt.org/chd_jrc/files/Final%20Standards%20rev5_2011.pdf

The Advisory Board is involved with curriculum changes, as stated in 3.B above, but topics about curriculum changes are not brought up at each meeting. the links to the Advisory Board minutes for this period are included below:

http://www.actx.edu/archives/index.php?module=article&id=38

IV. Enrollment Data

After receiving the data indicating the number of students enrolled in the program/department, by total students, number of full-time equivalents, and number of completers, determine if there is more than a one-year anomaly.



PivotTable1

DT_DEPT	TermType	AcaYrs
NMTT	Fall	All

Drop Column Fields Here

AcaYr	Sum of StdtCount
2003	73
2004	80
2005	80
2006	82
2007	71
Grand Total	386

Does the analysis by the faculty and staff of this data address any obvious problems/declining statistics?
Unacceptable
Recommendation
Graph is unreadable. DJH

Followup Response

The graphs are clear and visible in the printed version. The computer version is inadequate as stated by the assessor, so the computer version needs to be addressed if SACS site visitors are to see the data.

Create an action plan for needed improvement and commendation for any dramatic improvement.
This graph looks more dramatic than it really is. If you look at the incremental numbers, there is a difference of 7 students from 2003 to 2004. My concern will be the drop of 11 majors from 2006 to 2007, so this should be watched closely. Sometimes, students change their major because of the competitive nature of being accepted into the program.

It needs to be noted that we receive students from out of the area

who do not complete 30 hours of prerequisite work here at AC.

The PD will keep a close watch on this area and continually participate in Sneak Peek, the Showcase of Technology and other student recruitment events.

Does the action plan or commendation address the problem addressed within the analysis? Does it appear that implementation of the action plan will resolve the problem and correct the decline?
Unacceptable
Recommendation
The fact that this is referring to an unreadable graph makes it impossible to validate. Fix the graphs so that we can read them and include a short narrative of the results, for ease of use. Then, it's possible to know if this comment is valid. DJH

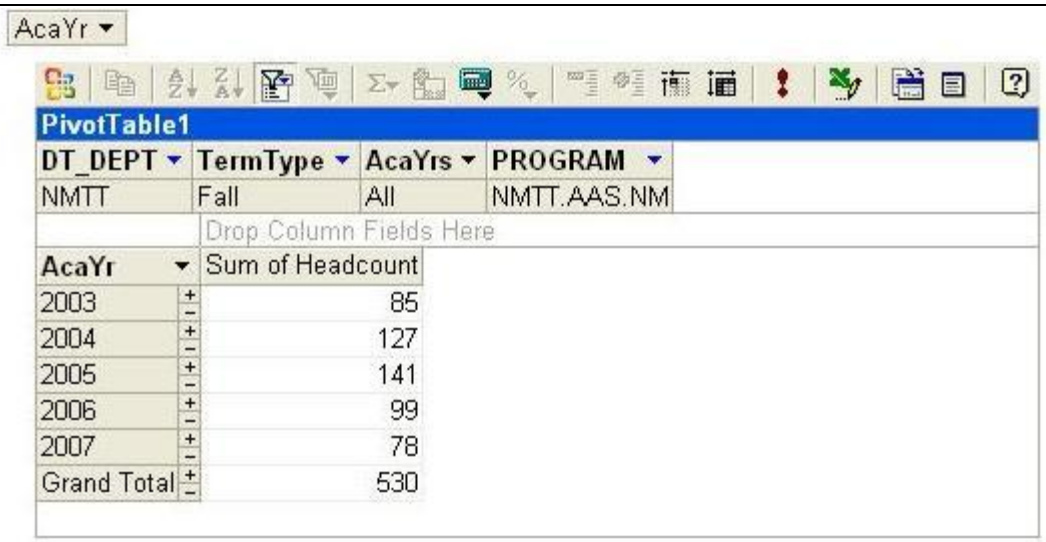
Does the External Review Committee have any other analysis or recommendations for increasing enrollments based on the program/department's data?
Unacceptable
Recommendation

Again, a short statement as to why this isn't answerable would be helpful. DJH

Followup Response

The question was answered but the graphs are unclear in its computerized form. The printed version purports the nature of the graphs.

For programs/departments with majors, review the graphs of program majors and the number of new majors by year. 1. Provide an analysis of the program's/department's faculty.



Does the analysis by the faculty and staff of this data address any obvious problems/declining statistics regarding students enrolled as majors within the program/department? Does the action plan or commendation address the problem addressed within the analysis? Does it appear that implementation of the action plan will resolve the problem and correct the decline? Does the External Review Committee have any other analysis or recommendations for increasing the number of students majoring in this program/department based on this program's/department's data?
Unacceptable
Recommendation
As with the other graphs, this is so poorly done, it's impossible to answer this question. The graphs need explanation and clear labeling as to what they mean, in order for the reader and evaluators to understand them.

Followup Response

The graph shows the number of declared NMTT majors for years 2003-2007, and the Program notes a 33% increase when comparing 2003 to 2004, a 10% increase from 2004 to 2005, then a 30% decline from 2005 to 2006, and a 22% decline from 2006 to 2007.

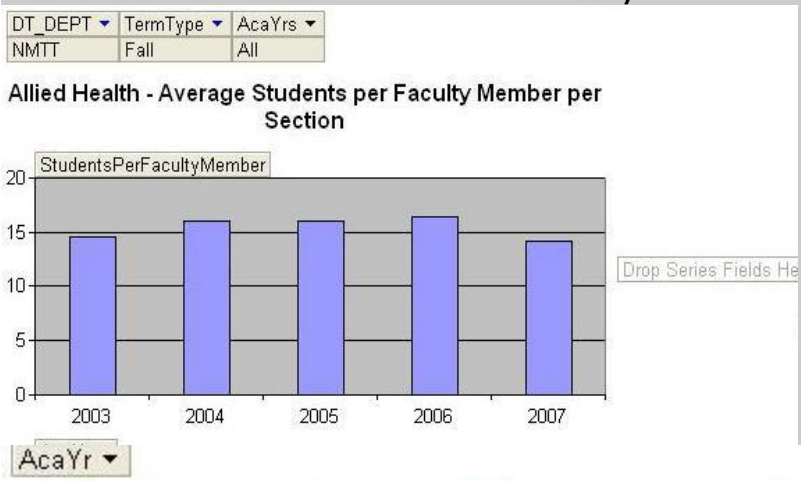
As with any program, declared major counts will fluctuate from year-to-year, even though the Program engages in student recruitment events such as Sneak Peek and Showcase of Technology.

The Program is not concerned at this time with the variations in declared major percentages, as this is the nature of the Allied

Health Professions.

V. Resources

Faculty 1.) Review the five-year graph(s) of the student to faculty ratio in the program/department. a. Explain any increase or decrease that is more than a one-year anomaly.



PivotTable1

DT_DEPT	TermType	AcaYrs
NMTT	Fall	All

Drop Column Fields Here

AcaYr	StudentsPerFacultyMember
2003	14.6
2004	16
2005	16
2006	16.4
2007	14.2
Grand Total	15.44

Does the analysis by the faculty and staff of this data address any obvious problems/declining statistics regarding student-to-faculty ratio within this program/department?
Unacceptable
Recommendation
Same comments on the poverty of these graphs, and lack of explanations. Needs bold fonts, explanations of the information, labeling and narrative comments.

Followup Response

The assessor is unable to view these graphs properly from the

computer version, but again, as with all graphs in this study, the printed versions are readable. The assessor has reason to be concerned if the SACS site vistors must only see the computerized version.

The graphs on the left clearly show that the number of students per faculty member are adequate in that there is 1 faculty member per approximately 15 students per course. The JRCNMT accrediting body only allows the Program to enroll 15 students per year. Here is the link to prove this:

http://www.jrcnmt.org/states/tx_list.asp

The pivot table 1 graph on the right also shows this data in a different format.

Provide an action plan for improvement of any identified problem. No problems as the numbers indicate.

Does the action plan or commendation address the problem addressed within the analysis? Does it appear that implementation of the action plan will resolve the problem and correct the decline? Does the External Review Committee have any other analysis or recommendations regarding student-to-faculty ratio within this program/department?
Unacceptable
Recommendation
Again, since this information is related to an unreadable graph, this reader can't tell whether this comment is valid.

DJH

Followup Response

No followup needed, the graphs are quite clear in the printed version, and the Program has addressed and explained both graphs above.

In the database for Roster of Instructional Staff (also known as Faculty Roster), review the credentials of each full-time and part-time faculty member within the program/department.
Mark E. Rowh, BS, CNMT, RTR (ARRT) is the program director/instructor for this program.

The qualifications have been met for this position.

There are no other faculty members in this program.

Identify any faculty teaching a transfer course which, according to the information within the database for Roster of Instructional Staff (also known as Roster of Faculty) do not meet the requirements of faculty teaching a transfer course and explain the credential problem. Identify any faculty teaching a technical course which, according to the information within the database for Roster of Instructional Staff (also known as Roster of Faculty) do not meet the requirements of faculty teaching a technical course and explain the credential problem based on SACS requirements and/or THECB requirements. Identify any faculty teaching a developmental course which, according to the information within the database for Roster of Instructional Staff (also known as Roster of Faculty) do not meet the requirements of faculty teaching a developmental course and explain the credential problem.

Acceptable

Followup Response

NO ANSWER

List the names and the last date for all full-time faculty evaluations based on the schedule indicated in the Faculty Performance Review (FPRP).

Spring, 2007

If any full-time faculty member (or Board-appointed faculty member) has not been completed the Faculty Performance Review (FPRP) within the past two years and is listed in the aforementioned Roster of Instructional Staff (also known as Roster of Faculty), identify the faculty member's name and the date of the last FPRP.

Acceptable

Followup Response

NO ANSWER

List the names of each part-time faculty and the last date of evaluation by students and supervisor for each course taught.

N/A

If any part-time faculty member has not been evaluated by both students and supervisor for each course taught within the past year and is listed in the aforementioned Roster of Instructional Staff (also known as Roster of Faculty), identify the faculty member's name and state the specific problem.

Acceptable

Followup Response

NO ANSWER

Amarillo College's Board Policy Manual defines each faculty member's academic freedom as full freedom in the classroom in

discussing the subject being taught and to pursue research and publications. However, a faculty member must not attempt to force on students a personal viewpoint and must at all times allow for diversity of opinion. Has anyone in the program/department filed a grievance for violation of the aforementioned academic freedom?

no

If anyone within the department has filed a grievance for violation of academic freedom based on the definition stated in Amarillo College's Board Policy Manual, briefly describe the violation (excluding personal identifiers) and the total number of violations.

Acceptable

Followup Response

NO ANSWER

Library 1. Which of the following library collections/resources/services have been used by faculty, staff and/or students within the past five years? (Select all that apply).

Electronic books Electronic journals Tutorials/guides

Does it appear that the library collections/resources/services used by the faculty, staff, and/or students within the past five years are accurate and thorough?

Unacceptable

Recommendation

There is no way to validate this statement. This reader has NO idea of how to even check this statement. Commas in the seriated list would be helpful as well. DJH

Followup Response

This is a weak area for the program, and there is very little engagement with these resources.

However, the JRCNMT requires that the program have human, physical, financial and learning resources that are sufficient to support the educational goals and number of students admitted to the program. The link to Standard B, Resources, B1.2 is shown on page 4:

http://www.jrcnmt.org/chd_jrc/files/Final%20Standards%20rev5_2011.pdf

H.) Which two or three collection/resources/services should be

improved to support Amarillo College's mission regarding teaching and service?
This is a weak area for students in this program and needs to be addressed by the PD. Students should be led to conduct research in methodologies in a structured format using the available journals and technologies.

This is a major goal for the PD and it will be pursued.

Has the program/department identified which two or three collections/resources/services should be improved to support Amarillo College's mission regarding teaching and service?
Acceptable
Concern
Again, unsure as to how to validate this statement. DJH

Followup Response

NO ANSWER

Does your program/department have discipline accreditation?
yes
How has the library participated in this discipline's accreditation?
The JRCNMT site visitors inspected the Nuclear Medicine Technology Program in 2005 and toured the new library facility to see the information that students had access to. This is required through the essentials/guidelines of the accrediting body.

Does the program/department have a discipline accreditation? IF SO, has the library participated in completing the approver's evaluation?
Unacceptable
Recommendation
Needs some hyperlink to validate the statement. If this was done, there should be a record of it. Hyperlink it. The additional information below doesn't help in validation.

Followup Response

There is no hyperlink to verify this statement, and the JRCNMT does not publish the findings but only makes recommendations if there were concerns about the site visit. As you can see, the Program maintains full accrdditation with the JRCNMT as shown:

http://www.jrcnmt.org/states/tx_list.asp

In addition, the program realizes that this is a weak area and students must be led to use these resources. This will have

greater positive impact on CCSSE surveys, as well.

Technology and Security/Privacy 1. After assessing the strengths and weaknesses of the program's/department's access to technology, what improvements would ensure that students have access and training in the use of technology?

Students have access to computers in the library and most of the time at home. Librarians are available to show them how to use them if they have trouble.

Students are required to access myAC to see their grades and communicate with the instructor and other students. The PD instructs them on accessing this in the Introduction to Nuclear Medicine course.

Does the program's/department's assessment of strengths and weaknesses include ways to improve both students' access to & training in the use of technology?

Unacceptable

Recommendation

This doesn't answer the question being asked. It tells us what is done, not what could improve the access and use of technology. Reanswer this question. DJH

Followup Response

The Program needs to improve in this area by utilizing the expertise of the Library staff to show students how to access library resources and use the databases that will allow them to engage in programmatic research and professional writing.

What improvements would ensure that students use technology?

The PD will include research based learning after the students are properly trained to access the information from the AC librarians.

Does the program's /department's answer include improvements that would ensure that students use technology? Are the recommendation(s) of this program/department feasible?

Acceptable

Concern

No way to validate this. Isn't there some type of future plan for the department where this would be shown? DJH

Followup Response

NO ANSWER

Review program/department operations. Does any operation

present the possibility for violations of security, confidentiality, or integrity of student records?
no
What changes need to be made to prevent violations of this nature?
After a review of this program's /department's operations based on this Self-Study and any other information available to this Committee, does any operation present the possibility for violations of security, confidentiality, or integrity of student records? If so, describe those operations and identify the violation possibility in detail.
Unacceptable
Recommendation
No way to validate statement. This is pretty critical and should be validated. How do you know and what ways have you investigated this question? Show us! DJH
What changes need to be made to prevent violations of this nature?
Acceptable
Concern
Not answered, but a statement as to why this isn't answered would be helpful. This reader would still like to know why no changes need to be done (previous question). DJH
Followup Response
NO ANSWER
Explain what aspects of the services need to be strengthened.
Student Adult Services need to be available on the west campus instead of students having to go to the WSC.
Do the Self-Study recommendations of this program/department for support services that need to be improved appear to be valid?
Unacceptable
Recommendation
They appear valid, but again, without a way to check this, one doesn't know. DJH
Followup Response
NO ANSWER
Support Services for Students 1. Which support services need to be strengthened to better serve students in this program/department?
Student Adult Services
Followup Response
As mentioned above, the Program needs to utilize Library

Resources actively so that students learn how to write a professional paper.

Describe any indicators or problems that prevent a healthy, safe and secure environment for the students, faculty and staff of this program/department.

The west campus needs camera to monitor the halls and classrooms.

The west campus needs a full-time police officer.

Are recommendations to assure a healthy, safe and secure environment for staff and students of this program/department valid? Are any of these recommendation(s) more significant and/or urgent?

Acceptable

Followup Response

NO ANSWER

Describe any indicators or problems that hamper adequate physical facilities, both on and off campus, to meet the needs of the program/department.

The program needs a state-of-the-art laboratory facility to facilitate adequate hands-on learning for students, but this problem will be alleviated with the passage of the bond election.

Do any of the problems or concerns regarding adequate physical facilities appear to be significant and/or urgent? Are there any other needs which this Self-Study didn't cite but are critical based on other information? Which of these needs are most significant and/or urgent?

Acceptable

Followup Response

NO ANSWER

VI. Budget

Which program/department outcomes have resulted in budget requests to date?

The program acquired a dose calibrator to enhance student learning so that they are properly trained in the safe use of radioactive materials before going to their practicum training. This was purchased with the Perkin's Funds.

Have any of this program's/department's outcomes resulted in budget requests to date? If not, why not?

Acceptable
Concern
Is there a document showing this? DJH
Followup Response
NO ANSWER
Project the program's/department's strategic initiatives for the next five years based on the program's/department's outcomes. The program intends to extend its services to remote areas via appropriate technology in an attempt to serve more students.
Has this program/department been able to project strategic initiatives for the next five years based on the program's/department's outcomes? If not, what appears to be blocking this program/department from accomplishing this?
Unacceptable
Recommendation
This needs to be more specific in it's scope and the manner in which this will happen for students. Where, how?DJH
Followup Response
The Program's intent was to reach underserved regions of New Mexico and the Permian Basin, but a needs assessment has not been conducted at this writing. This idea began when a colleague from Midland Community Hospital told the PD that they were unable to recruit technologists adequately due to the remote nature of the community. The PD contacted Midland Community College but there was not an interest at this time.

The Program is currently getting renovations in the classroom, because the Amarillo Community passed a bond election, and the Program will receive Smart Classroom technology, a gamma camera and a hot lab so students can participate in lab activities. At this writing, the renovations will be complete by Summer 2012.

VII. Publications

If the program/department publishes any advertising or recruitment documents (electronic or paper), do the documents accurately represent Amarillo College and the program/department?
yes
If no, explain what is inaccurate.

IF the program/department has published any advertising or recruitment documents (electronic or paper), check at least one copy of each document and determine whether it accurately represents Amarillo College and the office/department?
Unacceptable
Recommendation
This reader has no way to validate this statement. Needs documentation.
DJH
IF anything appears to be inaccurate, identify the apparent violation.
Acceptable

Followup Response

The Program publishes an information/application packet on the Nuclear Medicine Web site stemming from the AC main page. The links below include career information, the published program curriculum, course syllabi, and application requirements, respectively.

http://www.actx.edu/nuclear_med/

http://www.actx.edu/nuclear_med/index.php?module=article&id=5

http://www.actx.edu/syllabus/catalog_deptlist.php?showmaster=departments&deptid=56

http://www.actx.edu/nuclear_med/index.php?module=article&id=12

In addition, the JRCNMT requires that the Program maintain 'Fair Practices' under Standard D: Operational Policies, D1, page 8. The link to the Standards is included here:

http://www.jrcnmt.org/chd_jrc/files/Final%20Standards%20rev5_2011.pdf

B.) Does the program/department publish any documents (electronic or paper) with references to SACS accreditation?
no
Are the references in compliance with SACS approved statement?
Which reference is not in compliance? Describe how you will assure compliance for all references in the future.

IF the program/department has published any document(s) with a reference to SACS accreditation, are all references consistent with the approved statement? (Approved reference: Amarillo College is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award associate degrees. Contact the Commission on Colleges at 1866 Southern Lane Decatur, Georgia 30033-4097 or call for questions about the accreditation of Amarillo College.) IF any references are inconsistent, identify all documents with the inconsistent reference(s).
Acceptable

IF the Self-Study did identify the inconsistencies, does the plan for assuring future compliance appear to correct the problem? IF the Self-Study did NOT identify all inconsistencies, what plan does this Committee recommend?
Acceptable
Concern
A short comment as to why this wasn't answered would be helpful for clarity purposes. DJH

Followup Response

NO ANSWER

VIII. Other

State any additional comments/concerns which may impact this program/department during the next five years.
The Society of Nuclear Medicine is proposing that all students pursuing any form of nuclear medicine education have a bachelor's degree before they can enter the workforce. Their proposal is slated to take affect by 2015, if they can convince the Nuclear Medicine Technology Certification Board and the American Registry of Radiologic Technologists to accept this proposal. This means that this program must have a collaboration agreement with a university.

IF additional comments/concerns were included in the Self-Study regarding items which may impact this program/department during the next five years, what recommendations and/or concerns are warranted? IF NO such items were included in the Self-Study but this Committee feels such comments or concerns are valid, cite them and include any relevant recommendations.
Acceptable
Concern
Hyperlinking to this proposal would be benefitical. Specifics about how this collaboration search will take place woud also be helpful in answering the

question. DJH

Followup Response

NO ANSWER

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