

APPLICATION FOR CHANGE IN EXISTING COURSE: MAJOR & MINOR

1 Submitted by College of Lexington Community College Date 10-10-03

Department/Division offering course
Nuclear Medicine Technology / Natural Science & Health Technologies

2. Changes proposed:

(a) Present prefix and number NMT 230 Proposed prefix and number No change

(b) Present Title Nuclear Medicine Technology III

New Title No change

(c) If course title is changed and exceeds 24 characters (including spaces), include a sensible title (not to exceed 24 characters) for use on transcripts:

No change

(d) Present credits: 6 Proposed credits: No change

(e) Current lecture:laboratory ratio 1:6 Proposed: No change

(f) Effective Date of Change: (Semester & Year) Summer 2005

3. To be Cross-listed as NA NA
 (Prefix and Number) (Signature: Dept. Chair)

4. Proposed change in Bulletin description:

(a) Present description (including prerequisite(s):

NMT 230 Nuclear Medicine Technology III (6)

Methods and operations of the radiopharmacy and radionuclide cardiovascular imaging procedures are included in this course. Lecture: 9 hours, laboratory: 30 hours. Prerequisite: NMT 150.

(b) New description:

NMT 230 Nuclear Medicine Technology III (6)

Central nervous system, gastrointestinal system, and urinary system radionuclide imaging procedures are studied. Lecture: 7.5 hours, clinic 30 hours.

(c) Prerequisite(s) for course as changed: NMT 150

5. What has prompted this proposal?

There are three major reasons for revising the NMT curriculum. (1) The last revision of this curriculum was implemented in 1995. (2) The Academic Committee of the Society of Nuclear Medicine Technologist Section published a revised Curriculum Guide in early 2003 to assist programs to update curriculum content. (3) The Nuclear Medicine Technology Certification Board has published revised competencies and will finish a revision of the examination matrix in 2004.

6. If there are to be significant changes in the content or teaching objectives of this course, indicate changes:

Most clinical affiliates of this program perform a substantial number of cardiovascular procedures. The order of patient imaging procedures has been rearranged to cover cardiovascular studies earlier in the curriculum. This has placed other studies into this course in no particular order.

The radiopharmacy content has been moved to the subsequent NMT course. Content has been expanded to include positron-emitting radiopharmaceuticals making the amount of material to cover more that can reasonably be covered in a summer term along with the imaging procedures.

Current:

Upon completion of this course, the student can:

- A. describe the routine radiopharmaceuticals used in diagnostic and therapeutic nuclear medicine procedures;
- B. prepare and dispense routine radiopharmaceuticals under supervision for patient administration;
- C. demonstrate the appropriate techniques of routine radiopharmaceutical administration for patient procedures;
- D. perform quality control procedures of routine radiopharmaceuticals; and
- E. perform radionuclide cardiovascular procedures under the supervision of a nuclear medicine technologist.

Proposed:

Upon completion of this course, the student can:

- A. perform radionuclide imaging procedures related to the central nervous system under the supervision of a nuclear medicine technologist;
- B. perform radionuclide imaging procedures related to the gastrointestinal system under the supervision of a nuclear medicine technologist; and
- C. perform radionuclide imaging procedures related to the urinary system under the supervision of a nuclear medicine technologist.

7. What other departments could be affected by the proposed change?

Nuclear Medicine Technology (NMT) has no dedicated classroom space in the college. Physics lab space (OB 331) and PHY lecture space (OB 319) are also used by NMT courses. The addition of 1 credit hour of lecture to 4 of the 5 NMT courses has the potential to overlap with PHY lecture and lab space. After contacting the Division Chair of the Physical Sciences and Engineering Technology Division and the Physics Area Coordinator, it appears that class room space will be available for additional NMT lecture assuming the PHY schedule of classes remains the same as 2002-2003. This will be addressed annually as Division Chairs schedule classroom space.

8. Will changing this course change the degree requirements in one or more programs?
 No Yes (If yes, attach an explanation of the change.)*
9. Is this course currently included in the University Studies Program? No Yes (If yes, please attach correspondence indicating concurrence of the University Studies Committee.)
10. If the course is a 100-200 level course, please submit evidence (e.g. correspondence) that the Community College System has been consulted.

This course change has been forwarded to Aloris Owens, Nuclear Medicine Technology program coordinator, Jefferson Community College, and Dr. Carolyn O'Daniel, Executive Director for Academic Affairs at KCTCS. (see attached)

1. Is this a minor change? No Yes (NOTE: See the description on this form of what constitutes a minor change. Minor changes are sent directly from the Dean of the College to the Chair of the Senate Council. If the latter deems the change not to be minor, it will be sent to the appropriate Council for normal processing.)

12. Within the Department, who should be consulted for further information on the proposed course change?

Name: Charles H Coulston, NMT Program Coordinator Phone Extension: 257-4872 x 4099

Signatures of Approval:

Department Chair: *Dwight A. Zell* Date: 10-17-03
President
Dean of the College: *[Signature]* Date: 10-21-03

Date of Notice to the Faculty: _____

**Undergraduate Council: _____ Date: _____

**Graduate Council: _____ Date: _____

**Academic Council for the Med. Ctr: _____ Date: _____

**Senate Council: _____ Date of Notice to Univ. Senate: _____

ACTION OTHER THAN APPROVAL: _____

*NOTE: Approval of this change will constitute approval of the program change unless other program modifications are proposed.

**If applicable, as provided by the Rules of the University Senate.

The Minor Change route for courses is provided as a mechanism to make changes in existing courses and is limited to one or more of the following:

- a. change in number within the same hundred series;
- b. editorial change in description which does not imply change in content or emphasis;
- c. editorial change in title which does not imply change in content or emphasis;
- d. change in prerequisite which does not imply change in content or emphasis;
- e. crosslisting of courses under conditions set forth in item 3.0;
- f. correction of typographical errors. [University Senate Rules, Section III - 3.1]

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Additional Information on CCS Forms

1. Course Outline: (Two-level outline required)

Current Course Outline

Radiopharmacy (deferred to the Fall semester)

- A. Radiopharmacology
- B. Toxicology
- C. Radiopharmaceutical Chemistry (Gamma emitters)
- D. Radiopharmaceutical Chemistry (Positron emitters)
- E. Characterization of Radiopharmaceuticals
- F. Radiopharmaceutical Localization
- G. Management

- II. Radionuclide Cardiovascular Imaging Procedures

- A. Indications for Study
- B. Contraindications / Adverse Reactions
- C. Patient Preparation
- D. Equipment
- E. Procedure
- F. Alterations to / Interventions in the Procedure
- G. Scan Patterns (Image Analysis)

Proposed Course Outline

- I. Central Nervous System Imaging

- A. Review of Anatomy & Physiology
- B. Pathology
- C. Cerebral Vascular Dynamic Imaging
- D. Planar Cerebral Imaging
- E. SPECT (functional) Cerebral Imaging
- F. PET Cerebral Imaging
- G. Cerebral Tumor Imaging
- H. Cerebral Spinal Fluid (CSF) Imaging
- I. CSF Leak Quantification
- J. CSF Shunt Patency

- II. Gastrointestinal / Digestive System Imaging

- A. Review of Anatomy & Physiology
- B. Pathology
- C. Salivary (parotid) Gland Imaging
- D. Esophageal Motility / Transit
- E. Esophageal Reflux
- F. Gastric Emptying (solid-phase & liquid-phase)
- G. Helicobacter Pylori Detection
- H. Liver/Spleen Imaging (planar & SPECT)
- I. Hemangioma Detection
- J. Hepatobiliary Imaging and Ejection Fraction Calculations
- K. GI Bleed Localization (acute and intermittent)
- L. Meckel's Diverticulum Imaging
- M. LeVein Shunt Patency
- N. Intrahepatic Pump Patency Study

III. Genitourinary Imaging

- A. Review of Anatomy & Physiology
- B. Pathology
- C. Renal Perfusion Imaging
- D. Renogram
- E. Glomerular Filtration Rate (GFR) Acquisition and Calculation
- F. Effective Renal Plasma Flow (ERPF) Acquisition and Calculation
- G. Renal Imaging for Morphology / Functional Mass
- H. Direct Cystogram
- I. Voiding Cystogram (VCG)

2. List of Experiments/Activities: (If laboratory or clinic is involved)

Current Clinical Activities

The student will:

- A. participate in the preparation of routine radiopharmaceuticals under the supervision of the nuclear medicine technologist through clinical assignments;
- B. demonstrate appropriate quality control procedures for routine radiopharmaceuticals;
- C. demonstrate the proper administration of radiopharmaceuticals under the supervision of a technologist where permitted by the memorandum of agreement with the clinical affiliate;
- D. record the dispensation of routine radiopharmaceuticals accurately for department records; and
- E. assist the nuclear medicine technologist with cardiovascular system radionuclide imaging procedures as well as to perform procedures under the direct supervision of the technologist.

Proposed Clinical Activities

The student will assist the nuclear medicine technologist with central nervous system, gastrointestinal system, and urinary system radionuclide imaging procedures as well as to perform procedures under the direct supervision of the technologist.

3. Changes in Suggested Learning Resources:

Bernier, Donald R., Paul E. Christian, James K. Langan. *Nuclear Medicine: Technology and Techniques*, 4rd ed. St Louis MO: Mosby-Year Book, Inc., 1997.

Chandra, Ramesh. *Nuclear Medicine Physics: The Basics*, 5th ed. Baltimore, MD: Williams & Wilkins, 1998.

Early, Paul J. and, D. Bruce Sodee. *Principles and Practice of Nuclear Medicine*, 2nd ed. St Louis MO: Mosby-Year Book, Inc., 1995.

English, Robert J. *SPECT Single-Photon Emission Computed Tomography: A Primer*. Reston VA: The Society of Nuclear Medicine, 1995.

Harkness, Beth, Paul Christian, Katherine L. Rowell. *Clinical Computers in Nuclear Medicine*. New York, NY: The Society of Nuclear Medicine - Technologist Section, 1992.

Lee, Kai. *Computers in Nuclear Medicine: A Practical Approach*. New York, NY: The Society of Nuclear Medicine, 1991.

Lombardi, Max H. *Radiation Safety in Nuclear Medicine*. Boca Raton FL: CRC Press, 1999.

Mettler, Fred A., Jr. and Milton J. Guiberteau. *Essentials of Nuclear Medicine Imaging*, 4th ed. Philadelphia, PA: W.B. Saunders Company, 1998.

Saha, Gopal B. *Fundamentals of Nuclear Pharmacy*, 4th ed. New York, NY: Springer, 1998.

Tortorici, Marianne. *Administration of Imaging Pharmaceuticals*. Philadelphia, PA: W.B. Sanders Company, 1996.

The Journal of Nuclear Medicine. Reston, VA: The Society of Nuclear Medicine, Inc.

The Journal of Nuclear Medicine Technology. Reston, VA: The Society of Nuclear Medicine, Inc.

4. Impact of Change on Enrollment:

No impact is expected.

5. For Inclusion on LCC General Education List: Not applicable

- A. Degree Area (AA/AS or AAS or both)
- B. Competency Area
- C. General Education Competency Statement (List and provide examples of implementation methods/activities)
- D. Across the Curriculum Competencies (List and provide examples of implementation methods/activities)

6. For Removal from General Education List: Not applicable

- A. Competency Area
- B. Rationale

7. For Inclusion on University Studies List: (A syllabus must be attached.) Not applicable

- A. Area
- B. Course Competencies
- C. Description of Writing Component

If a course has not been revised during the last five (5) years, the major change route must be used.