New Course Request

Indiana University

Check Appropriate Boxes:  Undergraduate credit [✓]  Graduate credit [ ]  Professional credit [ ]

1. School/Division  Radiologic Sciences/School of Medicine  2. Academic Subject Code  RADI

3. Course Number  R411 (must be cleared with University Enrollment Services)  4. Instructor  Judith Kosegi

5. Course Title  Projects in Nuclear Medicine Technology II

   Recommended Abbreviation (Optional)  Projects in NMT II

   (Limited to 22 Characters including spaces)

6. First time this course is to be offered (Semester/Year):  Spring 2011

7. Credit Hours: Fixed at 2 or Variable from ___________ to ___________

8. Is this course to be graded S-F (only)?  Yes [ ]  No [✓]

9. Is variable title approval being requested?  Yes [ ]  No [✓]

10. Course description (not to exceed 50 words) for Bulletin publication:  Independent readings, research and written assignments in preparation for a research or literature search project in nuclear medicine.

11. Lecture Contact Hours: Fixed at ___________ or Variable from ___________ to ___________

12. Non-Lecture Contact Hours: Fixed at 2 or Variable from ___________ to ___________

13. Estimated enrollment: 7 of which 0 percent are expected to be graduate students.

14. Frequency of scheduling:  Once per year  Will this course be required for majors?  Yes

15. Justification for new course:  Current course was under the R410 variable credit course title.  New course number/description to alleviate confusion.

16. Are the necessary reading materials currently available in the appropriate library?  Yes

17. Please append a complete outline of the proposed course, and indicate instructor (if known), textbooks, and other materials.

18. If this course overlaps with existing courses, please explain with which courses it overlaps and whether this overlap is necessary, desirable, or unimportant.

19. A copy of every new course proposal must be submitted to departments, schools, or divisions in which there may be overlap of the new course with existing courses or areas of strong concern, with instructions that they send comments directly to the originating Curriculum Committee. Please append a list of departments, schools, or divisions thus consulted.

Submitted by:  

[Signature]  Date 1/19/10

Department Chairman/Division Director

[Signature]  Date 1/17/10

Dean

Dean of Graduate School (when required)  Date

Chancellor/Vice-President  Date

University Enrollment Services

After School/Division approval, forward the last copy (without attachments) to University Enrollment Services for initial processing, and the remaining four copies and attachments to the Campus Chancellor or Vice-President.

UPS 724

University Enrollment Services Final—White; Chancellor/Vice-President—Blue; School/Division—Yellow;
Department/Division—Pink; University Enrollment Services Advance—White.
I.U. NUCLEAR MEDICINE TECHNOLOGY PROGRAM
School of Allied Health Sciences, Radiologic Sciences Programs
PROJECTS IN NUCLEAR MEDICINE TECHNOLOGY II- RADI R411 (2 credits)
(Junior Year Spring 2011)
SYLLABUS

COURSE DESCRIPTION: Independent Readings, research, and written assignments in preparation for a research or literature search project in nuclear medicine

COURSE INSTRUCTOR: Judy Kosegi (274-7431), CL-137 (mail goes to CL-120). Call for appointments.

COURSE OBJECTIVES: At completion of this course section (fall & spring semesters of the junior year) the student will be able to:

1) Develop a research or literature review topic.
2) Do a literature search for appropriate reference materials.
3) Write a project proposal.
4) Explain 5 references pertaining to the topic.
5) Apply for appropriate research approvals, if needed.

READING/REFERENCE MATERIALS:


3) JNMT Information for Authors. This source is attached and may also be found at the Society of Nuclear Medicine web site: http://tech.snmjournals.org/misc/ifora.shtml


WRITING REQUIREMENTS: All assignments must to be typed on a computer. Content, grammar, spelling, punctuation, and sentence structure will be graded on all assignments. All writing assignments must be double spaced to allow for corrections. Assignments are to be kept in an expandable file folder that latches (accordion style or portfolio type). The student’s name should be on the outside of the folder. All previously graded assignments must be included when turning in a new one. KEEP ALL GRADED MATERIALS AND REFERENCES FOR THE SENIOR PORTION FOR THE COURSE RADI R413. THESE ITEMS WILL BE REQUIRED FOR R413!

SPRING SEMESTER (2 Credits):
WRITING ASSIGNMENT POINTS TO REMEMBER

1) Use the fewest words possible to get your point across. Avoid redundancy.
2) Use full, clearly written sentences.
3) Use two sentences rather than one long convoluted sentence.
4) Use past tense when referring to anything which was done in previously published research, such as “The research demonstrated (not demonstrates) that ….”
5) Avoid verbiage such as “I think…”,”I feel…”, “It basically…” or “In other words…”. Only state what you will “do” or what the research “revealed (demonstrated, indicated, etc.)”
6) Do not use the same word to start too many of your sentences. Example: This article revealed…. This article showed…. Also avoid repeating the same phases in your writing, as much as possible.
7) Use paraphrasing, not direct quotes.
8) When you use an abbreviation you must write it out the first time followed by the abbreviation in parenthesis, such as: “The nuclear medicine technologist (NMT)…”. After the first use of the word you may then use the abbreviation only. This does not apply to units of measurement.
9) Radionuclides are to be written with the mass number in superscript (131I).
10) Plan ahead and do not wait until the last minute to meet an assignment. Schedule appointments with your advisors well ahead of time because they are often not available on short notice. Also find out now, at the beginning of the semester, when they are likely to be on vacation or out of town during the times when you will need them for consultation this spring, summer, and next fall.

PROGRESS REPORT: TOPIC, SUPERVISOR, LITERATURE SEARCH*: Do a preliminary literature search and decide which topic you will continue to investigate. It is suggested that you do a literature search in the School of Medicine Library to determine if there are sufficient reference materials available. This should not be taken lightly. You want to be sure there is information on your topic available, and that you will be able to complete the project in a short time period. Too much information could also be hard to handle. Review journal articles for ideas to research or write about. You may try to do a research project that has been done before and published (it is OK to try to duplicate research to see if you get similar results). Ask technologists, physicians, and researchers for ideas. You may do, or help with, a section of someone else’s research if they allow it. You may work with another student on the same project as long as you each address different aspects and data.

A) It will be required that you have at least one topic, and some idea on what the research or paper will be about (what question or hypothesis will be investigated). Topics that do not relate to Nuclear Medicine or Radiology, in some way, may be rejected. This report must be typed out with your name on the paper as well as that of your potential “research supervisor” (if doing research) or “expert on the topic” for a literature search topic. Include copies of all computer printout literature searches done in the library and highlight potentially useful references that might apply to your topic. Be sure your print outs include the phrases or words used for the searches. You MUST use OVID MedLine, PubMed or a similar juried article search source (not Google or other regular web engines). Attach full document copies (not abstracts) of 2 of those highlighted references. Library search techniques that were taught in the fall course are to be used for these searches.

Review of items to provide:

1) NAMES: your name and the name of your research supervisor (for research) or expert on the topic (for topic paper).
2) TOPIC & HYPOTHESIS: 1 topic and what it’s about (hypothesis or question).
3) PRINT-OUTS: computer print-outs of all meaningful literature searches. Limit it to no more than 1-2 pages per search and should be the result of a few different word or phrase searches.
4) **SEARCH CRITERIA**: words or phrases which were used in the searches.
5) **HIGH LIGHT**: Mark potentially useful references on the computer print-outs.
6) **REFERENCE COPIES**: Provide 2 full document copies of 2 potentially useful references. **Read them and explain in writing how you might use them to help you in your research.**

**RESEARCH OR LITERATURE REVIEW PROPOSAL**: Due at assigned time (see schedule) or before the student wants to start the research work (Include all previous graded assignments in the portfolio folder). This step may be taken before the others if your supervisor wants the research to start in the fall or early spring and if the supervisor is satisfied that there will be sufficient reference material for the paper:

**A) RESEARCH PROPOSAL PLAN.** This proposal must include:

1) **AUTHORS**: Your name and the name of your supervisor(s) as co-author(s), their work location, department, and contact information.
2) **TITLE**: Describes the research.
3) **INTRODUCTION and REVIEW**: Include a brief section on work that has been done in the field and why your work is important.
4) **GOALS OF THE INVESTIGATION**: What is the purpose (hypothesis) for the research?
5) **REFERENCES**: Explain why there is (or is not) a sufficient quantity of material to be able to find a minimum of 5 references. References can either address similar research and/or material that can be used in the introduction to give background explanation on why this research is important and/or in the methods section to explain the methods used.
6) **METHODS SECTION**: Describe **exactly** how the research will be done and what type of statistical analysis (Chi-square, T-test, etc.) will probably be used. If data sheet forms or survey forms are involved, a copy of the proposed form must be included. Be sure you are planning enough data gathering to be able to do the needed statistics. If your supervisor is not a statistician, consult with Mike Miller, PhD (278-0141) regarding what you are doing, how much data will be needed, number of trials, etc., and what statistical methods would be best. Explain whether the project requires approval by the Institutional Review Board (IRB), Laboratory Animal Review Committee (LARC), or if a hospital and/or clinic approval will be required. In most cases of student research the student can get an IRB Exempt or Expedited Review, which is much quicker than a Full Review. See IRB approval forms and information at: [http://www.iupui.edu/%7Eresgrad/spon/download2.htm](http://www.iupui.edu/%7Eresgrad/spon/download2.htm).
7) **SUPERVISOR APPROVAL**: The research supervisor should review and approve the research proposal with their signature. They are just approving the general plan, not writing it for you. However, they should give you direction if it is not accurate or specific enough before they sign off on it.
8) **Include all previously graded assignments in the portfolio folder.**
9) **Once all agency (IRB, etc.) approvals have been granted and the course instructor has graded and approved the Research Proposal Plan the student may begin the research, if they are ready.** The actual First paper will be due about mid-summer in the senior segment of the course. Most students will do their research in Summer Session I, but it can begin earlier if the supervisor and student are ready.

**B) LITERATURE REVIEW PROPOSAL PLAN.** This proposal must include:

1) **AUTHOR**: Your name and anyone else who contributes significant in-put
2) **TITLE**: Describing the topic.
3) **INTRODUCTION and REVIEW:** Include a brief section on work that has been done on the topic and why your feel it is important to write about it. This must be more in-depth than the one done for the Progress Report.

4) **REFERENCES:** Explain why there is a sufficient quantity of material to be able to find a minimum of 10 references. References can address research and other materials relevant to the topic.

5) **Include all previously graded assignments in the portfolio folder.**

6) The First paper will be due about mid-summer in the senior segment of the course. Most students write their papers in Summer Session I but it may be written sooner if the student is ready.

*NOTE: You may change your topic or your proposal, but you will have to resubmit another progress report and/or proposal as described above. Minor changes in the proposal need not be resubmitted.

**IRB or OTHER AGENCY APPROVALS:**

A) IRB, LARC, Hospital, or clinic Approvals

1) If ANY APPROVALS are required **supply documentation.** Ask your research supervisor for this information.

2) If you need IRB or LARC approval, and it has not been granted yet, then **supply a copy of the application that you have submitted** **(5 points will be deducted if you have not yet submitted the application, if one is needed, by the time of the late March or early April IRB deadline which will be announced will ahead of time).** **Once approved, supply documentation.** It is required that the student apply for approval **as soon as possible** so that research data gathering can begin once approval is granted.

3) Once you have IRB or LARC approval you may need to get other approvals if doing research on patients at VA (554-0000, 2525) or Wishard (278-2868). **Supply documentation that approvals have been granted before you start research.**

4) **EVERY ONE** (including those doing literature review papers) must supply documentation that they have taken the “Protection of Human Subjects in Research Course” and passed the test (required for IRB approval). See last page of syllabus for the due date. You can find the course and test at: http://www.iupui.edu/~resgrad/Human%20Subjects/human-menu.htm

**REFERENCES:**

A) **ATTACH 5 FULL COPIES OF RELEVANT JOURNAL ARTICLES OR BOOK CHAPTERS/PAGES** (or a copy of other REFERENCES for that topic). You do not have to use these references in your final paper if you find better ones to replace them. Be sure that for book references you copy the pages that you are referencing, plus the page in the front of the book which has author name, date of publication, and publisher information. The references must give background on your topic or relate to it in some way (similar research, etc.). You may have fewer than 5 if your research supervisor stipulates, in writing, that 5 relevant references do not exist. However, you must have tried to find some first (provide a copy of a computer print-out of a library literature search as proof, if you have fewer than 5).

1) List at the top of the paper your **topic, your name, and your supervisor’s name** (if doing research).

2) **List the reference in proper journal format** (refer to JNMT Information for Authors, attached, or go to http://tech.snajournals.org/misc/ifora.shtml). If it is not clear how to write an unusual type of reference, then consult the American Medical Association Manual of Style or the AMA Manual of Style guide off the internet site: http://www.stkate.edu/library/pdf/citeAMA.pdf. For journal publication abbreviations consult the List of Journals Indexed in Index Medicus on reserve in the Radiologic Sciences office or go to
the web site (http://www.nlm.nih.gov/tsd/serials/jni.html) if you can’t find it otherwise. If you look at published articles from the Journal of Nuclear Medicine Technology for how references are listed, be sure they follow the correct format because sometimes there are errors in published articles and the instructor will only accept the format described in the above mentioned sources.

2) **Following each reference write a short explanation (a few sentences) about why this reference relates to your topic and how you plan to use it in your paper.** It must be clear from this explanation that you know what this reference is about (Example: “This paper described_________ and can be used* to indicate____________ as background information on my research topic because it showed* ____________”. *Always use past tense when talking about completed research. Do not turn in articles that you do not understand and have not read.

3) **Highlight or underline those parts of the articles that you think you might use in a reference.** Points will be taken off if you show you are planning to reference something that is actually a reference from another article.

4) **Include all previously graded assignments in the portfolio folder.**

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**GRADES FOR THE SPRING SEGMENT OF THE COURSE ARE BASED ON THE FOLLOWING CRITERION:**

A. Assignments must be turned in when due (unless excused by the instructor because of illness or other reasonable excuse - documentation required).

B. How well assignments follow the guidelines in this syllabus, the JNMT Information for Authors, List of Journals Indexed in Index Medicus, as well as the American Medical Association Manual of Style.

C. Structural accuracy (spelling, punctuation, sentence structure, and grammar)

D. When each new assignment is turned in, the old assignments (with correction marks) must be included in a portfolio type folder.

E. Instructor comments, for corrections in the assignments, are followed.

F. Failure to do any required sections will result in a substantial grade reduction or course failure.

**GRADE SCALE:**

**Fall Grade:**

1. 100% - LECTURE SEGMENT (refer to the Fall syllabus for that segment)

**Spring Grade:**

1. 20 points - PROGRESS REPORT
2. 40 points - PROPOSAL PLAN
3. 40 points - 5 REFERENCES, AGENCY APPROVALS SUBMITTED (if needed), RESEARCH COURSE TEST passed
   a. 5 points deducted if IRB, LARC or other approvals (if needed) have not been submitted by the time the late March or early April IRB deadline (TBA). Documentation of submission required.
4. 2 points extra for those who need agency approvals and get them all approved (documentation required) by the last clinic day of the Spring Semester.

5. + 1/3 rd letter grade increase for a proposed research paper

IDEAS FOR RESEARCH:

Contact:

Any of the Nuclear Physicians: Dr. Schauwecker at 988-2493, Dr. Tann at 278-8782, Dr. Siddiqui at 274-9929, Dr. Fletcher at 274-1800, or Dr Westphal.

Any of the researchers: Kathy Carlson at 554-0226 often has ideas. Yun Liang, PhD at 278-1843 or Mike Miller, PhD at 278-0141 might be willing to use help with their research projects.

Any of the NM technologists.

For IRB and other application help, call Kathy Carlson at 554-0226

Try to come up with an idea of your own and find someone to supervise you. Read JNMT to get ideas for research topics and be alert for ideas when in the clinical setting. Review materials from the fall lecture segment where research ideas may have been presented.

Try getting ideas from the attached examples of student abstracts submitted to the Society of Nuclear Medicine meeting.

FUNDS FOR RESEARCH and/or TRAVEL:

University Undergraduate Research Opportunities Program (UROP):

Project and Travel Funding from UROP

UROP Grant proposals provide funding for conference travel and for the costs associated with research projects. You may apply for a Project and/or a Research Travel Grant, intended for research and creative projects and for travel for research purposes if you are presenting at a professional conference. Proposals may be submitted at anytime during the academic year or summer session. Grants are for IUPUI undergraduate research work carried out with the mentorship of a faculty member appointed at IUPUI. Apply at http://www.urop.iupui.edu/. The UROP grant proposal-submission deadlines are usually December 15 for spring research and April 1 for summer. The rules change so check the web site for current information.
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<thead>
<tr>
<th>COMPONENT</th>
<th>DATE</th>
<th>TIME</th>
<th>LOCATION</th>
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<tbody>
<tr>
<td>Course Introduction</td>
<td>August 24, 2010</td>
<td>2:30-3:30 PM</td>
<td>CL-126</td>
</tr>
<tr>
<td>Orientation for Spring</td>
<td>December 6, 2010 (M) or TBA</td>
<td>2:30 – 3:30</td>
<td>CL-126</td>
</tr>
<tr>
<td>Progress report: Topic, Supervisor, Literature Search.</td>
<td>January 26, 2011 (W) or</td>
<td>By 4:00 PM</td>
<td>Kosegi’s Office or Mail</td>
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<tr>
<td></td>
<td>before research/literature</td>
<td></td>
<td>Box</td>
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<td>review is started, if earlier than 1/27.</td>
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<tr>
<td>Research or Literature Review Proposal Plan Due plus lecture by Kathy</td>
<td>February 16, 2011 (W) or</td>
<td>10:30 – 11:30</td>
<td>CL-124</td>
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<td>Carlson on IRB forms, etc.</td>
<td>before a research or literature review is started, if earlier.</td>
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<tr>
<td>Meeting to discuss how to list a reference &amp; find proper reference material in an article.</td>
<td>March 11, 2011 (W)</td>
<td>10:30 – 11:30</td>
<td>CL-124</td>
</tr>
<tr>
<td>IRB &amp; other Agency Approval forms that have been submitted (if needed)</td>
<td>ASAP or not later than IRB Deadline in March or April takes 6-8 weeks for approval so submit your application ASAP.</td>
<td>Copy of forms acknowledging agency submission (if needed) and documentation showing the Exam was passed.</td>
<td>Kosegi’s Office, Mail Box, or e-mail</td>
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<td>AND The “Protection of Human Subjects in Research Course” Exam has been passed by every student, not just ones with IRB projects.</td>
<td>Exam score due by March 23, 2011 (W)</td>
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<tr>
<td>References (5) Paper</td>
<td>April 6 (W), 2011</td>
<td>By 4:00 PM</td>
<td>Kosegi’s Office or Mail</td>
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<td>EXTRA CREDIT: Supply proof that IRB, LARC &amp; all other approvals, if needed, have been granted by last clinic day.</td>
<td>April 29, 2011 (F)</td>
<td>By 4:00 PM</td>
<td>Kosegi’s Office or Mail</td>
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<tr>
<td>Begin research once IRB or LARC and other approvals (if needed) have been granted. KEEP ALL OLD ASSIGNMENTS to be turned in with the First Paper.</td>
<td>Research must be started by early May and completed by mid June unless approval for late research has been given. This is a part of the Senior segment of the course.</td>
<td>Due dates for the First Paper (late June or early July) and Final paper will be given in the Senior Syllabus in R413</td>
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* NOTE: Additional lectures/discussions may be scheduled as needed.