New Course Request

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

1. School/Division: College of Health Sciences
2. Academic Subject Code: AHLT
3. Course Number: R409 (must be cleared with University Enrollment Services)
4. Instructor: Medical Imaging
5. Course Title: Senior Project in Medical Imaging Technology
   Recommended Abbreviation (Optional) (Limited to 32 Characters including spaces)

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

7. Credit Hours: Fixed at 3 or Variable from ___ to ___

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

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

10. Course description (not to exceed 50 words) for Bulletin publication: Senior Project in Medical Imaging Technology (3 cr.). Independent readings and research on a selected medical imaging topic. A paper in publishable form must be written as part of the project.

11. Lecture Contact Hours: Fixed at 3 or Variable from ___ to ___

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

13. Estimated enrollment: 15 of which 0 percent are expected to be graduate students.

14. Frequency of scheduling: Spring Term. Will this course be required for majors? Yes [ ]

15. Justification for new course: To allow BSMIT majors to complete degree requirements.

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.

     Please see attached.

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]
Department Chairman/Division Director
Date 4/12/10

Approved by: [Signature]
Dean
Date 4/12/10

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
P: AHLT-R 281, R 282, and R 283. Clinical application of radiographic positioning, exposure techniques, and departmental procedures in all phases of radiologic technology under the direct supervision of a registered technologist. Successful completion involves mastery of all clinical aspects of the program.*

AHLT-R 404 Sectional Imaging Anatomy (3 cr.) An in-depth study of sectional anatomy pertinent to ultrasound, computed tomography, and magnetic resonance imaging. Standard transverse, parasagittal, and coronal planes are included, utilizing images from all three imaging modalities. A discussion of technique, artifacts, and pathology-related alterations of cross-sectional anatomic appearances is included.

AHLT-R 405 Advanced Diagnostic Imaging I (3 cr.) Physics and imaging concepts in cardiovascular interventional technology, computed tomography, diagnostic medical sonography, and magnetic resonance imaging.

AHLT-R 406 Advanced Diagnostic Imaging II (3 cr.) Procedural concepts in cardiovascular interventional technology, computed tomography, diagnostic medical sonography, and magnetic resonance imaging. Image analysis of normal and abnormal studies will be presented.

AHLT-R 407 Seminar: Advanced Medical Imaging Technology (3 cr.) Seminar in advanced imaging modalities. Topics will vary.

AHLT-R 408 Topics in Radiologic Sciences (3 cr.) Study of selected topics in radiologic sciences. May be repeated once for credit if topics differ.

AHLT-R 409 Senior Project in Medical Imaging Technology (3 cr.) Independent readings and research on a selected medical imaging topic. A paper in publishable form must be written as part of the project.

AHLT-R 481 Clinical Practicum: Vascular Imaging (8-12 cr.) Clinical experience in the performance of vascular and neurological imaging studies.*

AHLT-R 482 Clinical Practicum: Computed Tomography (8-12 cr.) Clinical experience in the performance of computed tomographic imaging studies.*

AHLT-R 483 Clinical Practicum: Magnetic Resonance Imaging (8-12 cr.) Clinical experience in the performance of magnetic resonance imaging studies.*

AHLT-R 484 Clinical Practicum: Ultrasound Imaging (8-12 cr.) Clinical experience in the performance of ultrasound imaging studies.*

AHLT-R 485 Clinical Practicum (6 cr.) Clinical experience in various radiological modalities – Variable topics.*

OTHER INDIANA UNIVERSITY PROGRAMS

Students may complete all prerequisite courses at IU Kokomo

Indiana University-Purdue University Indianapolis Allied Health Programs

Clinical Laboratory Science

Students may only complete the first three years of this program at IU Kokomo

The clinical laboratory scientist is a member of the laboratory team in diagnosis and research who performs many of the tests on tissue and blood that physicians need to treat diseases properly. The first three years of the clinical laboratory science curriculum are designed to provide a broadly based background in chemistry and the biological sciences, as well as an opportunity to elect courses from the humanities and social and behavioral sciences. The fourth year is spent in the clinical laboratory at the IU Medical Center. Selection of the fourth-year students will be made by the faculty of the clinical laboratory
R409 – Senior Project in Medical Imaging

Instructor:  Lori Balmer, M.P.A., R.T. (R ) (MR)
Office phone: 574-520-4258   Pager: 574-679-6653
E-mail:  LNBalmer@IUSB.edu
Office:  Northside Hall, Room 407; Office hours by appointment

Time:  Arranged (3 credit hours)

Required Text:  No required text for this course

Course Description
Senior Project in Medical Imaging Technology is composed of independent readings and research on a selected topic in medical imaging technology. A written paper in publishable form must be completed as part of the senior project.

Course Objective:
This is a capstone course involving directed research culminating in a substantive paper related to a topic in medical imaging technology. The student may continue with a topic / case study presented during R 407 with the approval of the instructor, or s/he may select a different topic/case study, applying appropriate research methodologies.
Upon completion of this course, a student will be able to:

1. Apply appropriate research methods.
2. Identify a relevant topic suitable for a substantive research paper in medical imaging.
3. Formulate an appropriate research question.
4. Compose a substantive research paper in publishable.
5. Format a research paper in appropriate APA style.

Method of Instruction
Independent research and directed student paper, limited group instruction.

Attendance/Course Communication:
Class will meet on-campus formally for 3 class periods as follows and attendance is mandatory on these dates:

<table>
<thead>
<tr>
<th>Date</th>
<th>Purpose</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 11, 2011</td>
<td>Outline Course Requirements</td>
<td>Mandatory</td>
</tr>
<tr>
<td></td>
<td>Discuss Course Syllabus</td>
<td></td>
</tr>
<tr>
<td>March 8, 2011</td>
<td>Mid-term</td>
<td>Mandatory</td>
</tr>
<tr>
<td></td>
<td>Draft of Paper is due</td>
<td></td>
</tr>
<tr>
<td>May 3, 2011</td>
<td>Final Paper Due</td>
<td>Mandatory</td>
</tr>
<tr>
<td></td>
<td>Individual Presentations</td>
<td></td>
</tr>
</tbody>
</table>
As this course includes primarily independent research on the part of the student, it is important to maintain regular contact throughout the semester.

Contact information for the instructor is listed at the beginning of this syllabus. Electronic mail will be the primary and preferred method of communication. All students are required to monitor their IUSB student email account on a daily basis; it is critical that students report any change in email or alternate email address as soon as possible to the instructor. The instructor will respond or at least acknowledge email messages from students within a maximum of five (5) business days (during regular IUSB sessions). Beyond standard university holidays and breaks, the instructor will notify students of any extended periods of time when email contact is not practical (professional meetings, etc.).

Instructor will be available for individual assistance on a regular basis during the semester. The student is asked to make an appointment.

Accommodations

If you have a disability and need assistance, special arrangements can be made to accommodate most all needs. Please see the instructor at the beginning of the course.

Professional Conduct

As a student in the BSMIT program, you are choosing a career in a health profession that requires of its members high standards of integrity and ethical conduct. It is expected that each medical imaging student will make a personal commitment to a standard of behavior that will establish a solid foundation for future professional conduct and respect for both the clinical/professional setting and the academic setting at Indiana University South Bend. This includes demonstration of respect for the rights and well-being of fellow students, faculty, staff, patients and other members of the health care community; this also requires avoidance of any and all academic dishonesty as outlined in the Indiana University South Bend Student Code of Conduct.

Indiana University South Bend Statement on Academic Misconduct - Plagiarism

“...academic misconduct harms both students and the institution. Misconduct includes allowing another person to copy a paper or assignment, thus enabling that person to commit plagiarism; creating or altering sources and data; and allowing others to conduct research or prepare work that one uses for writing a paper. Like other academic misconduct, plagiarism is a serious form of cheating because it uses academic work inappropriately and/or uses work without adequate acknowledgment. To avoid it, writers must document ideas, statistics, visual aids, and language borrowed from any source—print, oral, or Internet. Sources may be documented formally in an in-text note, a footnote, or endnote; informally within the writer’s own text; or orally in a speech. Plagiarism and academic misconduct include, but are not limited to, the following:

1. Copying any other person’s work and submitting it as one’s own, whether as a written document or an oral presentation.
2. Copying or paraphrasing passages, sentences, phrases, data, statistics, isolated formulas, and visual aids from print, oral, or Internet sources without proper acknowledgment.
3. Using someone else’s ideas without giving credit to the source.
4. Submitting a professionally prepared research paper as one’s own work.
5. Submitting work that resulted from an unauthorized collaborative effort as individual work.
6. Reusing or recycling a paper or research done for credit in a previous course without the permission and approval of all the professors involved.
7. Offering material assembled or collected by others as one’s own project or collection.
8. Fabricating or creating material (statistics, text, etc.) to cite as a legitimate source.

The Indiana University South Bend Code of Conduct: Plagiarism may result in serious academic penalty, ranging from receiving a warning, to redoing the assignment, to receiving a grade of F for the assignment, to failing the course, to expulsion from the university. In accordance with procedures outlined in the current Indiana University South Bend Academic Handbook and the Indiana University Academic Handbook, cases of plagiarism must be reported to the chief administrative officer in student affairs, usually the Vice Chancellor for Student Affairs. Students have the right to due process, as outlined in the Code of Student Rights, Responsibilities, and Conduct.

If you have any questions regarding academic misconduct/plagiarism, please contact the Writing Center which is located in AI 124.

**Course Grade**

Course grades will be determined by a point value: # points earned / 100 total points.
The BSMIT Program uses the following grading scale for didactic courses:

<table>
<thead>
<tr>
<th>Points</th>
<th>Grade</th>
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<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>A+</td>
<td>82</td>
<td>C+</td>
</tr>
<tr>
<td>99-93</td>
<td>A</td>
<td>81-75</td>
<td>C</td>
</tr>
<tr>
<td>92</td>
<td>A-</td>
<td>74</td>
<td>C-</td>
</tr>
<tr>
<td>91</td>
<td>B+</td>
<td>73</td>
<td>D+</td>
</tr>
<tr>
<td>90-84</td>
<td>B</td>
<td>72-66</td>
<td>D</td>
</tr>
<tr>
<td>83</td>
<td>B-</td>
<td>65-0</td>
<td>F</td>
</tr>
</tbody>
</table>
**Method of Evaluation**
The course grade will be based on the following 100 point scale.

<table>
<thead>
<tr>
<th>Submission of student-identified research topic</th>
<th>Date</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructor will notify student of topic approval</td>
<td>January 19</td>
<td>5</td>
</tr>
<tr>
<td>Paper Outline with submission of 3 retrievable research resources</td>
<td>February 8</td>
<td>10</td>
</tr>
<tr>
<td>Submission of Rough Draft</td>
<td>March 8</td>
<td>15</td>
</tr>
<tr>
<td>Drafts returned by instructor</td>
<td>March 22</td>
<td></td>
</tr>
<tr>
<td>Final Paper</td>
<td>April 26</td>
<td>50</td>
</tr>
<tr>
<td>APA Compliance on Paper</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Point Total</td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

**Research Topic Proposal, Content Outline, Draft Submissions**

This course only entails review of the literature already published and does not have sufficient time to allow for original survey research to be completed. Students should review current medical imaging technology, Radiologic Science literature and scholarly allied health publications to identify appropriate research questions for their papers. Students should be sure there are sufficient resources available on a topic before selecting it.

- **Topic Submission**- Students must submit proposals for their research topic by January 19, 2011 for approval by the instructor (5 points).
- **Content Outlines** must be submitted by February 8, 2011 and are worth 10 points.
- **Rough drafts** must be submitted by March 8, 2011 and are worth 15 points.

The draft of the paper should address all the main sections of the paper:

- Title Page
• Abstract
• Introduction
• Background, research topic
• Literature Review
• Discussion – Principal Findings
• Conclusion
• Summary of findings and description of how information can be applied.
• Suggestions for future research
• Appendices (optional)
• For images, case study images, charts, graphs, etc
• References – APA format (all on list and in text must match) (All papers must have references)

References

References should be from a variety of sources with the bulk of references from peer review journals. Peer review journals use an editorial review board which evaluates the article for accuracy. Journals or magazines like RT Image, Advance and Applied Radiology are not peer reviewed. Journals such as Radiologic Technology, Radiologic Science & Education, and Radiology Management are peer reviewed and thus suitable resources for your research paper. You should be able to look at the inside cover of a journal or on a web site to see if the journal has a review board. Most likely if you can not find anything about a review board then the journal is not peer reviewed.

These research papers should be written using standard technical writing skills. This includes correct spelling and appropriate grammar, sentence structure, transitions, text flow, currency of knowledge, and scope of research. Papers must be written using APA format and style.

• Final Paper (50 points) - Final papers should be submitted using the same sections and method as the rough draft submission which should be revised according to the suggestions from the draft version of the paper.

• APA Compliance (20 points) - Research Papers will be evaluated on the correct application of APA format and style, overall organization, appropriate headings and subheadings, in text citations, and listing of references.

• IU South Bend Writing Center (AI 124) - “The IU South Bend Writing Center offers free one-on-one help with writing needs and assignments for any class. Whether exploring ideas, organizing thoughts, or polishing a draft, a tutor can help you improve your papers and your writing. Help with research, grammar, and mechanics is available online or in person from a tutor, and you can use the Writing Center computer lab to write and print your papers”.