New Course Request

Indiana University

Undergraduate credit [✓]  Graduate credit [ ]  Professional credit [ ]

School/Division: Radiologic Sciences/School of Medicine  Academic Subject Code: RADI

Course Number: RADI-R455 (must be cleared with University Enrollment Services)  Instructor: Linda Cox and Bruce Long

Course Title: Introduction to Medical Imaging Technology Projects

Recommended Abbreviation (Optional):

First time this course is to be offered (Semester/Year): Summer 2011

Credit Hours: Fixed at _______ or Variable from _______ to _______

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

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

Course description (not to exceed 50 words) for Bulletin publication:

Emphasizes skills needed to complete MIT Projects I & II (information gathering, computer skills and use of digital media) and provides an introduction to research practices in medical imaging.

Lecture Contact Hours: Fixed at _______ or Variable from _______ to _______

Non-Lecture Contact Hours: Fixed at _______ or Variable from _______ to _______

Estimated enrollment: _______ of which _______ percent are expected to be graduate students.

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

Justification for new course: The course is currently under the R408 variable title topics course. New course number is to help alleviate confusion.

Are the necessary reading materials currently available in the appropriate library? Yes [ ]

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

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

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 11/19/09

Approved by:

[Signature]

Dean

Date 12/10/09

Dean of Graduate School (when required)

Chancellor/Vice-President

Date

University Enrollment Services

Date

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.

University Enrollment Services Final—White; Chancellor/Vice-President—Blue; School/Division—Yellow; Department/Division—Pink; University Enrollment Services Advance—White
MIT PROJECTS IN MEDICAL IMAGING TECHNOLOGY
Summer II 2010 - RADI R455 Intro to MIT Projects – 2 credit hours
Fall 2010 - RADI R456 MIT Projects I – 2 credit hours
Spring 2011 - RADI R457 MIT Projects II – 2 credit hours

Faculty
Linda Cox
CL 142
274-5188
lcox1@iupui.edu
Bruce Long
CL 144
274-5254
blong@iupui.edu
Susan Robinson (Fall only)
R11043
278-6325
srobinso@iupui.edu

Course Description
These courses focus on independent readings and research on a selected medical imaging topic. Students select a topic with faculty approval. Information about the topic will be disseminated through an oral presentation of the topic (fall semester), using either computer software (MS PowerPoint) or scientific poster format and by producing a manuscript, in publishable form (spring semester).

Course Administration
These courses will be administrated through Oncourse management software and most assignments will be submitted in electronic format. The Oncourse website address is: https://oncourse.iu.edu/portal
Course grades and course materials will be available to the student via Oncourse.
- All correspondence with the instructors will be returned within 24 hours if at all possible. Please leave a phone number if you want to have a call returned. Email correspondence is highly recommended.

Course Purpose
The purpose of these courses is to develop skills necessary for life-long learning, to encourage critical thinking, and to develop skills needed to disseminate knowledge in the health care field. The mechanisms to develop these skills will be to learn the process of writing a manuscript that could be submitted for publication in a professional, peer-reviewed journal, and to use a variety of multi-media tools to produce illustrations for the manuscript, develop an educational poster and for a PowerPoint presentation of the selected topic.
Course Objectives
Upon completion of the 3 courses the student will be able to:
- Demonstrate computer word processing skills
- Perform a literature review on a selected topic
- Research a selected topic
- Prepare an annotated bibliography
- Prepare a proposal and outline for a paper
- Prepare a paper on a selected topic that adheres to specified standards
- Critique and revise draft copies of the manuscript based on editorial suggestions and peer-review
- Develop a MS PowerPoint presentation and a scientific poster on a selected topic
- Use a variety of multi-media tools to produce images for papers, presentations and posters
- Disseminate scientific information in a variety of formats and styles
- Appreciate the importance of following directions and paying attention to detail
- Gather patient data in a safe and ethical manner
- Respect a patient’s right to privacy regarding their medical data
- Protect patient sensitive data in a secure storage system
- Develop self-assessment skills

Course Requirements
The student is required to:
- Produce all submitted work using computer software
- All papers must be submitted in Microsoft Word format
- Submit all assignments via Oncourse unless otherwise indicated
- Produce photographic and computer generated medical images to enhance understanding of the selected topic
- Complete human subjects certification training
- Complete Introduction to Library and Database Search workshop
- Complete PowerPoint: The Basics workshop
- Submit a 1 page discussion paper on an assigned topic
- Submit an evaluation of Internet sites
- Submit an electronic database search printout (10 citations) with a corresponding annotated bibliography
- Submit a PowerPoint presentation documenting multimedia skills
- Produce a scientific poster presentation on a selected topic
- Submit a proposal, annotated bibliography, and outline for a professional paper
- Submit one draft and a final manuscript of the professional paper that conforms to specified standards (see manuscript standards below)
- Respond in writing to editorial comments on each draft
- Participate in individual meetings with the instructors
- Participate in workshop/group discussion sessions
- Participate in poster evaluation
Guiding Principles of Research and Dissemination

- There are five fundamental values that the academic community expects. Honesty, Fairness, Respect, Responsibility and Trust. You can expect these traits in your instructors and they are expected in students as well.
- The faculty wishes to foster the view that research and dissemination is not just a task or assignment, but a personal expression of thought and knowledge on a subject.
- The faculty feels strongly that they should contribute to, as well as critique and edit, student-produced projects.
- The faculty understands that not everyone has had enough experience to be proficient writers or speakers in the field of medical imaging, and considering this, weight is given to the process and effort of the research done, as well as the final products.
- Dissemination of research is a collaborative process involving communication with faculty, technical staff, and physicians. This communication should be ongoing throughout the 3 courses.
- Patient privacy concerning sensitive medical data is of the utmost importance. Failure to follow policies regarding data collection and storage of patient information will result in failure for the course and the student will be placed on academic probation.
- Academic Dishonesty: It is important for students to be aware of the expectations of IUPUI regarding individual course work, including OnCourse assignments and examinations. We have high expectations and will hold you to those expectations. You need to be aware of the rules which govern your behavior both on and off campus. Should you make a poor choice, you should be aware of the consequences of those actions. Lastly, you should know that we have tools available through OnCourse which enable monitoring of your activity within the virtual classroom. These tools can be used as evidence of academic misconduct.
- Please consider that the information offered to you in this class will likely be important to you in some way in your future. Academic dishonesty limits the amount of actual learning you can accomplish and, therefore, may effect your job performance in the future - regardless of whether you are "caught" or not.
- All material submitted must be the original work of the student. Plagiarism is considered unethical and academic misconduct; the penalties can be severe (see Code of Student Ethics, Indiana University, 1990). Plagiarism will be discussed in more detail in class. If you are unclear regarding what constitutes plagiarism, please see Linda or Bruce.
- It is the responsibility of the student to assure the accuracy of all cited material. This includes retaining the fundamental ideas of the original author and accurately attributing material to the source of origin. These concepts will be discussed in more detail in class. If you have concerns about this aspect of your writing, please see Linda or Bruce.

IUPUI Principles of Undergraduate Learning

This course focuses in varying degrees upon the following principles: core communication and quantitative skills; critical thinking, integration and application of knowledge; intellectual depth, breadth, and adaptiveness. As a result of this course the student should be able to utilize various forms of communication and communicate
effectively with patients, staff and peers. The student should be able to analyze carefully and logically information from various sources and be able to make informed decisions and solve challenging problems. Information gathered from this course and other courses should be used and integrated. Building upon the integration of knowledge, students should be able to examine and organize information and apply it to specific issues and problems.

**Class Requirements**

- All assignments must be turned in on time. All assignments must be turned by noon on due dates. The only exceptions are documented illness or funeral. If you miss any project deadline, your research will no longer be evaluated in this review cycle. You will receive a grade of R (deferred) and your research will be placed in the next review cycle. Graduation will be delayed. Compelling, non-academic circumstances may be petitioned to the faculty.

- All patient data related to research topics (images, pictures, reports, etc.) must have all patient sensitive data removed before use. Patient medical record numbers may be kept but must be stored separately from other patient data.

- Students are to use the ‘resources’ section of ‘My Workspace’ in Oncourse and/or password protected flash drive to store all image and report data.

- For images and medical data that may need to be moved from a clinical site, all patient data needs to be removed from hard copy or soft copy images. Patient ID numbers may be stored in a file on a password protected flash drive. We will provide all students with this device.

- Changing your topic after the topic proposal due date is considered a late assignment and subject to the rules stated above.

- Refer to the Medical Imaging Technology Student Handbook and the IU Code of Ethics for other regulations concerning grades, vacations, cheating, etc.

- Class attendance is mandatory unless otherwise indicated. If you can not attend class, you are to call the office by 8:00 a.m. to report that you will miss class. Three points will be deducted from the grade total for each class missed (the only exceptions are documented illness and funeral leave; documentation must be presented to the school office upon your return to school). Missing workshops and special lectures will result in a -1 letter grade deduction. Missing more than 1 workshop will result in course failure. Penalties for missing workshops are cumulative over the 3 courses. Assignment due dates will not change regardless of absence except for the conditions listed above.

- Tardiness is not acceptable. It is rude to the instructor and to your fellow classmates. Everyone is expected to be in class on time. Students who are late to class more than once will have their course grade reduced by at least 1/3 of a letter grade when the final grade is assigned. **Habitual** tardiness will result in recommendation of academic probation.

- Disruption of class will not be tolerated. This includes leaving the classroom during the class period, studying for other classes, cell phones, and excessive talking. These behaviors can result in the instructor dismissing a student from the classroom. If asked to leave class, it will be counted as an absence and the student will lose three points and can expect further penalty such as recommendation of academic probation.
• The instructor will not provide handouts, repeat announcements, instructions, or provide tutoring of class material to students who miss class or come in late. The only exceptions are a documented illness or funeral. The student will be responsible for getting notes and other materials from classmates or the Oncourse website.

Course Assignments
The schedule for specific assignments and due dates can be accessed through Oncourse.

Summer Session II
This semester consists of a variety of workshops and brief projects to develop the skills needed to research and disseminate scientific information. The specific requirements for the project assignments will be available through Oncourse.

Fall
This semester consists of a variety of lectures, assignments and self guided research to help the student prepare for scientific poster of a selected topic. Students will be using images from the Internet, teaching files or journal articles. No original images may be used for these assignments.
• The scientific poster will be used to illustrate the topic. The student should be prepared to answer questions about their work when it is viewed by the class and the instructors. The specific requirements for the presentation will be available on Oncourse.

Spring
This semester self guided research classes to help the student prepare a manuscript of the topic selected in the fall semester. Students will be assigned one faculty member who will supervise their research. Student research is discussed by both faculty members who work together to assign grades. After IRB approval, students will begin gathering original clinical images on actual patients.
• The publishable manuscript project will include written material and some type of visual aid (photographs, drawings, charts, graphs, etc.). If your topic requires images, at least 25% of the images must be original. Bonus points are awarded for additional images. The manuscript should be informative and written at a level that will enable an entry-level technologist (working in the subject area) to comprehend the material. The specific requirements for the manuscript will be available on Oncourse.

We do not wish to limit you to a particular type of publishable material. Over the past years students have produced the following materials.
• The technical paper discusses a particular procedure, process, or modality.
• The literature review summarizes the current knowledge or practices of a procedure, process, or modality.
• The research paper presents the results of a survey, experiment, or clinical trial. Statistical analysis is frequently used.
• A procedure manual which helps entry level technologist understand the anatomy, procedures, protocols and routines for a particular area.
• A grant proposal which is an application for funding for some need in the field of radiology such as education, equipment or services needed.
• A teaching module which is a paper that thoroughly covers a very specific subjects and tests the reader on the material. A short test is produced along with the paper.

Course Grade
Grades will be assigned for each semester course based on adherence to the guiding principles of research and dissemination detailed above, the ability to follow directions, the quality & completeness of work, on-time submission of materials, depth of research, interaction with the faculty, and evidence of effort. Each semester grade will be based on 100 points. The point values for each activity and submission will be available on Oncourse.

The grade scale is as follows.
A+ 100
A  99-96
A- 95.99-93.5
B+ 93.49-90.75
B  90.74-88
B- 87.99-85.25
C+ 85.24-82.5
C  82.49-80

Textbooks and Other Materials
Several useful reference books are recommended and available in the Radiologic Sciences library. These include Writing Research Papers: a complete guide (1996) by Lester, Elements of Grammar by Schertzer, and Elements of Style by Strunk & White, Elements of Editing by Plotnik, How to Write & Publish a Scientific Paper by Day, and Electronic Styles: A Handbook for Citing Electronic Information by Li and Crane. This course will follow AMA style (American Medical Association Manual of Style 10th Edition) and requirements from the ASRT. In addition, there is a collection of links to a variety of helpful websites in the Tools section of Oncourse.

Students are required to turn in assignments using Microsoft Word and Microsoft PowerPoint. Microsoft Office software can be purchased at the IU Medical Bookstore for $25-$30 or downloaded for free through IUware. It will include Microsoft Word and Microsoft Powerpoint.

Visiting the Writing Center
Writing can be difficult for some and seeking some assistance from writing professionals may help improve your writing skills. You are encouraged to visit the Writing Center during development of your projects (2 bonus points will be given in the spring semester for visiting the Writing Center, please ask for documentation of your visit). The Writing Center is located in Cavanaugh Hall Room 427. The phone number is 274-2049. You should call for an appointment. For additional assistance, the Grammar Hotline number is 274-3000.