# http://www.ric.edu/webcommunications/images/SealWithText_Small_Black.pngUNDERGRADUATE CURRICULUM COMMITTEE (UCC)PROPOSAL FORM

## Cover page scroll over blue text to see further important [instructions](#instructions): [if not working select “COMMents on rollover” in your Word preferences under view] please read these.

**N.B. DO NOT USE HIGHLIGHT, where choices are given within categories, please DELETE those THAT DO NOT APPLY TO YOUR PROPOSAL. Do not delete numbered categories.**

**ALL numbers in section (A) to be completed, including the impact ones (#5-7), put “none” if that is the case.**

|  |  |  |
| --- | --- | --- |
| A.1. [Course or program](#Proposal) | **RAD 334 principles of radiography** |  |
| [Replacing](#Ifapplicable)  |  |
| A.2. [Proposal type](#type) | **Course: creation** |
| A.3. [Originator](#Originator) | **Eric Hall** | [Home department](#home_dept) | **Biology/Health Sciences** |
| A.4. [Context and Rationale](#Rationale)  | **In this reorganization of the medical imaging program, new courses are being developed to cover the depth and breadth of content needed for certification as a radiographer.**  |
| A.5. [Student impact](#student_impact) | **Improved readiness for working in the hospital or clinical environment** |
| A.6. [Impact on other programs](#impact)  | **None** |
| A.7. [Resource impact](#Resource) | [*Faculty PT & FT*](#faculty):  | **This course will be taught by LSMI faculty.** |
| [*Library*:](#library) | **None** |
| [*Technology*](#technology) | **None** |
| [*Facilities*](#facilities): | **None** |
| A.8. [Semester effective](#Semester_effective) | **Fall 2020** | A.9. [Rationale if sooner than next Fall](#Semester_effective) |  |
| A.10. INSTRUCTIONS FOR CATALOG COPY: This single file copy must include ALL relevant pages from the college catalog, and show how the catalog will be revised. (1) Go to the “Forms and Information” page on the UCC website. Scroll down until you see the Word files for the current catalog. (2) Download ALL catalog sections relevant for this proposal, including course descriptions and/or other affected programs. (3) Place ALL relevant catalog copy into a single file. Put page breaks between sections and **delete any catalog pages not relevant for this proposal**. (4) Using the track changes function, revise the catalog pages to demonstrate what the information should look like in next year’s catalog. (5) Check the revised catalog pages against the proposal form, especially making sure that program totals are correct if adding/deleting course credits. If new copy, indicate where it should go in the catalog. If making related proposals a single catalog copy that includes all is acceptable. Send as a separate single file along with this form. |

B. [NEW OR REVISED COURSES](#delete_if)  **DO NOT use highlight. Do not delete numbered categories, just leave blank if they do not apply. Delete this whole page if the proposal does not include a new or revised course. Always fill in b. 1 and B. 3 for context.**

|  | Old ([for revisions only](#Revisions))ONLY include information that is being revised, otherwise leave blank.  | NewExamples are provided within some of the boxes for guidance, delete just the examples that do not apply. |
| --- | --- | --- |
| B.1. [Course prefix and number](#cours_title)  |  | **RAD 334** |
| B.2. Cross listing number if any |  |  |
| B.3. [Course title](#title)  |  | **Principles of Radiography** |
| B.4. [Course description](#description)  |  | Students are asked to make connections between the introductory lectures and clinical practice. This course prepares students for the national certification exams.  |
| B.5. [Prerequisite(s)](#prereqs) |  | Acceptance into a Medical Imaging Clinical program |
| B.6. [Offered](#Offered) |  | **Spring** |
| B.7. [Contact hours](#contacthours)  |  | **4** |
| B.8. [Credit hours](#credits) |  | **4** |
| B.9. [Justify differences if any](#differences) |  |
| B.10. [Grading system](#grading)  |  | **Letter grade**  |
| B.11. [Instructional methods](#instr_methods) |  | **Lecture** |
| B.12.[Categories](#required) |  | **Required for major**  |
| B.13. Is this an Honors course? |  | **NO** |
| B.14. [General Education](#ge)N.B. Connections must include at least 50% Standard Classroom instruction. |  | **NO |****category:** |
| B.15. [How will student performance be evaluated?](#performance) |  | **Exams** **Quizzes****Assignments** |
| B.16 [Recommended class-size](#class_size" \o "Check appendix XVIII in the UCC Manual for Best Practices) |  | **24** |
| B.17. [Redundancy statement](#competing) |  | **N/A** |
| B. 18. Other changes, if any |  |

| B.19**.** [**Course learning outcomes**](#outcomes)**: List each one in a separate row** | [**Professional Org.Standard(s)**](#standards)**, if relevant** | [**How will each outcome be measured**](#measured)**?** |
| --- | --- | --- |
| The student will: * Discuss the properties of the atom, concepts of electricity, magnetism, and electromagnetic radiation.
* Perform calculations using the Wave Equation and Plank’s Law.
* Identify the properties of x-rays.
* Identify the components and basic function of diagnostic x-ray tubes.
* Describe how x-rays are produced.
* Explain the role of the primary exposure factors in determining the quality and quantity of x-rays.
* State how the anode heel effect can be used in radiography.
* Calculate heat units.
* Explain protocols used to extend x-ray tube life.
* Describe the process of radiographic image formation.
* Explain the process of beam attenuation.
* Discuss practical considerations in setting standards for acceptable image quality.
* Differentiate between size and shape distortion.
* Perform calculations to determine image magnification and percent magnification.
* Evaluate the effects of scattered radiation on the image.
* Define grid cutoff and summarize the factors that affect grid cutoff.
* Apply conversion factors for changes in the following areas: distance, grid, image receptor, 15% rule.
* State the purpose and types of beam-restricting devices.
* State the purpose and construction of a radiographic grid including calculating grid ratio.
* List the various types of stationary grids and describe the function and purpose of a moving grid.
* Identify the factors to be considered in using a grid.
* Differentiate between fluoroscopic and radiographic imaging.
 |  | Examination, quizzes, assignments |

| B.20. [**Topical outline**](#outline)**: DO NOT INSERT WHOLE SYLLABUS, JUST A TWO-TIER TOPIC OUTLINE. Proposals that ignore this request will be returned for revision.** |
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| --- | --- | --- | --- |
| **Week**  | **Lecture**  | **Chapter**  | **Assignment**  |
| 1  | Review syllabus The atom, Electromagnetic waves  | C – 4   |   |
| 2  | Magnetism, electrostatic, electrodynamics   | C – 5-7  |   |
| 3  | Review for Exam Exam #1 Radiation and its discovery, The X-ray beam  |   C – 1, 5, 6, 9, 10  | Exam #1  |
| 4  | The X-ray beam  | F – 2 C – 1, 9, 10  | BB HW  |
| 5  | Review for Exam Exam #2 Image formation and radiographic quality  |  F – 3 C – 3, 11-14  | Quiz Exam #2  |
| 6  | Image formation and radiographic quality Review for Exam  |    | BB HW Quiz  |
| 7  | Exam #3 Exposure technique factors  | F – 6 C – 15, 16, 18, 21-24  | Exam #3 BB HW  |
| 8  | Exposure technique factors Review for Exam Exam #4  |   | Quiz Exam #4  |
| 9  | Scatter control  | F – 7 C – 18, 20  | BBHW   |
| 10  | Review for Exam Exam #5  |   | Quiz   Exam #5  |
| 11  | Exposure technique selection Image evaluation  | F – 8, 9 C – 25, 26  | Homework  |
| 12  | Fluoroscopy  | F – 10 C – 38   | Quiz Homework  |
| 13  | Tomography/Interventional radiography  Review for Exam   | F – 10 C – 38   | Quiz Homework  |
| 14  | Exam #6 Review for Final Exam   |     |   |
| 15  | Review for Final Exam  |   | Final Exam  |

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## D. Signatures

* Changes that affect General Education in any way MUST be approved by ALL Deans and COGE Chair.
* Changes that directly impact more than one department/program MUST have the signatures of all relevant department chairs, program directors, and their relevant dean (e.g. when creating/revising a program using courses from other departments/programs). Check UCC manual 4.2 for further guidelines on whether the signatures need to be approval or acknowledgement.
* Proposals that do not have appropriate approval signatures will not be considered.
* Type in name of person signing and their position/affiliation.
* Send electronic files of this proposal and accompanying catalog copy to curriculum@ric.edu and a printed signature copy of this whole form to the current Chair of UCC. Check UCC website for due dates.

##### D.1. Approvals: required from programs/departments/deans who originate the proposal. may include multiple departments, e.g., for joint/interdisciplinary proposals.

| Name | Position/affiliation | [Signature](#_Signature" \o "Insert electronic signature, if available, in this column) | Date |
| --- | --- | --- | --- |
| Eric Hall | Program Director of Medical Imaging | e-mail confirmation to curriculum@ric.edu | 4/1/2020 |
| Eric Roberts | Chair of Biology | e-mail confirmation to curriculum@ric.edu | 4/1/2020 |
| Earl Simson | Dean of FAS | e-mail confirmation to curriculum@ric.edu | 4/6/2020 |

##### D.2. [Acknowledgements](#acknowledge): REQUIRED from OTHER PROGRAMS/DEPARTMENTS (and their relevant deans if not already included above) that are IMPACTED BY THE PROPOSAL. SIGNATURE DOES NOT INDICATE APPROVAL, ONLY AWARENESS THAT THE PROPOSAL IS BEING SUBMITTED. CONCERNS SHOULD BE BROUGHT TO THE UCC COMMITTEE MEETING FOR DISCUSSION; all faculty are welcome to attend.

| Name | Position/affiliation | [Signature](#Signature_2) | Date |
| --- | --- | --- | --- |
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|  |  |  | Tab to add rows |