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| For Academic Affairs and Research Use Only |
| CIP Code:  |  |
| Degree Code: |  |

**New Course Proposal Form**

**[x ] Undergraduate Curriculum Council**

**[ ] Graduate Council**

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| **[X] New Course or [ ]Experimental Course (1-time offering) (Check one box)** |

Signed paper copies of proposals submitted for consideration are no longer required. Please type approver name and enter date of approval.

Email completed proposals to curriculum@astate.edu for inclusion in curriculum committee agenda.

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| Deanna Barymon 8/27/2019**Department Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**COPE Chair (if applicable)** |
| Cheryl DuBose 8/15/2019**Department Chair:**  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**Head of Unit (If applicable)**   |
| Shanon Brantley 9/24/2019**College Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**Undergraduate Curriculum Council Chair** |
| Susan Hanrahan 9/24/2019**College Dean** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**Graduate Curriculum Committee Chair** |
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| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**General Education Committee Chair (If applicable)**   | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…**Vice Chancellor for Academic Affairs** |

1. Contact Person (Name, Email Address, Phone Number)

Cheryl DuBose; cdubose@astate.edu

870-972-2772

2. Proposed Starting Term and Bulletin Year

Fall 2020

3. Proposed Course Prefix and Number (Confirm that number chosen has not been used before. For variable credit courses, indicate variable range. *Proposed number for experimental course is 9*. )

RS 4713

 4. Course Title – if title is more than 30 characters (including spaces), provide short title to be used on transcripts. Title cannot have any symbols (e.g. slash, colon, semi-colon, apostrophe, dash, and parenthesis). Please indicate if this course will have variable titles (e.g. independent study, thesis, special topics).

Bone Density Image Production

5. Brief course description (40 words or fewer) as it should appear in the bulletin.

Bone densitometry and its purpose. Techniques are explained, with emphasis on dual-energy x-ray absorptiometry (DXA) and how it compares with other imaging modalities. Various x-ray production and detection techniques, fan beam geometry, data analysis, and quality control processes are described. Prerequisite, Admission to the Radiologic Science Program or Doctorate of Physical Therapy Program. Fall.

6. Prerequisites and major restrictions. (Indicate all prerequisites. If this course is restricted to a specific major, which major. If a student does not have the prerequisites or does not have the appropriate major, the student will not be allowed to register).

1. No Are there any prerequisites?
	1. If yes, which ones?

Enter text...

* 1. Why or why not?

 Enter text...

1. Yes Is this course restricted to a specific major?
	1. If yes, which major? BSRS or DPT

7. Course frequency(e.g. Fall, Spring, Summer). *Not applicable to Graduate courses.*

Fall

8. Will this course be lecture only, lab only, lecture and lab, activity, dissertation, experiential learning, independent study, internship, performance, practicum, recitation, seminar, special problems, special topics, studio, student exchange, occupational learning credit, or course for fee purpose only (e.g. an exam)? Please choose one.

Lecture and lab

9. What is the grade type (i.e. standard letter, credit/no credit, pass/fail, no grade, developmental, or other [please elaborate])

Standard letter

10. No Is this course dual listed (undergraduate/graduate)?

11. No Is this course cross listed?

*(If it is, all course entries must be identical including course descriptions. Submit appropriate documentation for requested changes. It is important to check the course description of an existing course when adding a new cross listed course.)*

**11.1** – If yes, please list the prefix and course number of cross listed course.

 Enter text...

**11.2** – **Yes / No** Are these courses offered for equivalent credit?

Please explain. Enter text...

12. Yes Is this course in support of a new program?

a. If yes, what program?

 Certificate of Proficiency in Bone Densitometry

13. No Does this course replace a course being deleted?

a. If yes, what course?

Enter text...

14. No Will this course be equivalent to a deleted course?

a. If yes, which course?

Enter text...

15. Yes Has it been confirmed that this course number is available for use?

 *If no: Contact Registrar’s Office for assistance.*

16. No Does this course affect another program?

If yes, provide confirmation of acceptance/approval of changes from the Dean, Department Head, and/or Program Director whose area this affects.

Enter text...

**Course Details**

17. Outline (The course outline should be topical by weeks and should be sufficient in detail to allow for judgment of the content of the course.)

Weeks 1-3: Radiation Safety and Patient Care

 (ARRT content specs: Safety sections 1- 4)

Week 3: Exam 1

Weeks 4-7: Fundamentals of X-ray Production

 (ARRT content specs: Image Production section 1)

Week 7: Exam 2

Weeks 8-9: Quality Control of Equipment

 (ARRT content specs: Image Production section 2)

Week 9: Exam 3

Weeks 10-13: Measuring Bone Mineral Density

 (ARRT content specs: Image Production section 3)

Week 13: Exam 4

Weeks 14-15: Quality Assessment and Storage of Densitometry Scans

 (ARRT content specs: Image Production section 4)

Week 16: Final Exam

18. Special features (e.g. labs, exhibits, site visitations, etc.)

none

19. Department staffing and classroom/lab resources

CNHP 304; existing MIRS and DPT faculty

1. Will this require additional faculty, supplies, etc.?

 no

20. Yes Does this course require course fees?

 *If yes: please attach the New Program Tuition and Fees form, which is available from the UCC website.*

**Course Justification**

21. Justification for course being included in program. Must include:

 a. Academic rationale and goals for the course (skills or level of knowledge students can be expected to attain)

 This course will provide radiography students with the knowledge to successfully complete the patient safety and image production questions on the American Registry of Radiologic Technologists certification exam in bone densitometry. This course will also prepare students in the doctorate of physical therapy program. These DPT graduates will have the authority to order and perform bone density scans, and this course will prepare them for the International Society for Clinical Densitometry exam.

b. How does the course fit with the mission established by the department for the curriculum? If course is mandated by an accrediting or certifying agency, include the directive.

 This course fits with the department mission by adding an additional credentialing avenue for students, allowing them to become multi-credentialed upon graduation. This course is part of a certificate that will allow our mammography and breast sonography students to have all of the medical imaging skills required in a Women’s Healthcare setting.

c. Student population served.

Students in the bachelor of science in radiation sciences degree; students in the doctorate of physical therapy degree

d. Rationale for the level of the course (lower, upper, or graduate).

Students should be well versed in human anatomy and physiology and have prior exposure to radiation physics and exposure principles.

**Assessment**

**Relationship with Current Program-Level Assessment Process**

22. What is/are the intended program-level learning outcome/s for students enrolled in this course? Where will this course fit into an already existing program assessment process?

Students will be clinically competent and develop critical thinking skills. Students will have the option of adding this elective course to their schedule to increase their overall marketability in medical imaging or outpatient clinical settings. Mammography and breast sonography students will be strongly encouraged to complete the bone density certificate.

23. Considering the indicated program-level learning outcome/s (from question #23), please fill out the following table to show how and where this course fits into the program’s continuous improvement assessment process.

*For further assistance, please see the ‘Expanded Instructions’ document available on the UCC - Forms website for guidance, or contact the Office of Assessment at 870-972-2989.*

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| **Program-Level Outcome 1 (from question #23)** | Students will be clinically competent. |
| Assessment Measure | Students will score a 75% or higher on the final exam.  |
| Assessment Timetable | Fall semester, final exam |
| Who is responsible for assessing and reporting on the results? | Faculty |

 *(Repeat if this new course will support additional program-level outcomes)*

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| **Program-Level Outcome 2 (from question #23)** | Students will develop critical thinking skills |
| Assessment Measure | Students will score a 75% or higher on the bone density analysis lab activity.  |
| Assessment Timetable | Fall semester; week 13 |
| Who is responsible for assessing and reporting on the results? | Faculty |

 **Course-Level Outcomes**

24. What are the course-level outcomes for students enrolled in this course and the associated assessment measures?

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| **Outcome 1** | Students will appropriately analyze bone density results |
| Which learning activities are responsible for this outcome? | In class handouts; lecture; bone density lab activity |
| Assessment Measure  | Students will score 75% or higher on Exam 4  |

*(Repeat if needed for additional outcomes)*

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| **Outcome 2** | Students will practice proper radiation safety. |
| Which learning activities are responsible for this outcome? | In class handouts; lecture; bone density lab activity |
| Assessment Measure  | Students will score 75% or higher on Exam 1  |

**Bulletin Changes**

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| **Instructions**  |
| **Please visit** [**http://www.astate.edu/a/registrar/students/bulletins/index.dot**](http://www.astate.edu/a/registrar/students/bulletins/index.dot) **and select the most recent version of the bulletin. Copy and paste all bulletin pages this proposal affects below. Follow the following guidelines for indicating necessary changes.** **\*Please note: Courses are often listed in multiple sections of the bulletin. To ensure that all affected sections have been located, please search the bulletin (ctrl+F) for the appropriate courses before submission of this form.** - Deleted courses/credit hours should be marked with a red strike-through (~~red strikethrough~~)- New credit hours and text changes should be listed in blue using enlarged font (blue using enlarged font). - Any new courses should be listed in blue bold italics using enlarged font (***blue bold italics using enlarged font***)*You can easily apply any of these changes by selecting the example text in the instructions above, double-clicking the ‘format painter’ icon 🡪 , and selecting the text you would like to apply the change to.* *Please visit* [*https://youtu.be/yjdL2n4lZm4*](https://youtu.be/yjdL2n4lZm4) *for more detailed instructions.* |

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Certificate of Proficiency in Bone Densitometry

The program will provide students with the skills necessary to perform quality bone densitometry exams. The didactic courses satisfy structured education requirements for the ARRT certifica­tion examination in bone densitometry, while the clinical education component assists students in obtaining the required ARRT clinical experience documentation.

A certificate of proficiency is awarded to those students who complete the required coursework and who meet RT(R), BSRS, or DPT graduation requirements.

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| **Required Courses:**Students must also meet RT(R), BSRS, or DPT graduation requirements | Sem Hrs. |
| RS 4713 Bone Density Image Production | 3 |
| RS 4723 Bone Density Procedures | 3 |
| RS 4573 Imaging in Women’s Health Clinical Education – OR - | 3 |
| RS 436V Independent Study in Radiologic Sciences |  |
| Total Required Hours: | 9 |

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**RS 4643. Computed Tomography Clinical Education** Guided content and clinical practice experiences designed for sequential development, application, analysis, integration, synthesis and evaluation of concepts and theories in computed tomography. Prerequisite, Admission to the Radiologic Science Program. Summer.

***RS 4713 Bone Density Image Production***

***Bone densitometry and its purpose. Techniques are explained, with an emphasis on dual-energy x-ray absorptiometry (DXA) and how it compares with other imaging modalities. Various x-ray production and detection techniques, fan beam geometry, data analysis, and quality control processes are described. Prerequisite, Admission to the Radiologic Science Program or Doctorate of Physical Therapy Program. Fall.***

***RS 4723 Bone Density Procedures***

***Patient care and preparation, patient safety, and patient positioning for DXA scanning. Discussion of Z scores, T scores, fracture risk assessment (FRAX), and body composition is included. Content includes DXA scanning of the lumbar spine, proximal femur, and forearm.*** ***Prerequisite, Admission to the Radiologic Science Program or Doctorate of Physical Therapy Program. Spring.***

**RS 4822. Psychosocial Factors in Health Care Delivery** Focus on psychosocial issues which impact the delivery of healthcare in a medical imaging environment. Prerequisite, formal acceptance in to the professional program. Spring