A - New Course Proposal V. 7.2022 : Entry # 3548

DEAN Decision

Approved

Date

09/08/2025

Is this course intracollegiate or intercollegiate?

Intercollegiate

SCHOOL EPC Decision

Approved

Date

10/03/2025

GEC Decision

Approved

Date

11/07/2025

APIRC Decision

Approved

Date

11/14/2025

Begin Form

Today's Date

09/03/2025

Your Name:

Eric Rokni

Your Email:

erokni@highpoint.edu

Are you a Department Chair?

No

Department Chair Name

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Jacob Brooks

Email address of your Department Chair

jbrooks@highpoint.edu

By checking below, I certify that my department chair has seen and approved the new course that I am proposing.

Yes

Please select the appropriate school overseeing this proposal:

Natural Sciences

When should this proposal take effect?

Fall 2026

Information for the Registrar

Choose the department designator from the list below.

DIS

Proposed Course Number?

1000

Is this course cross listed?

No

Does this course replace a current course?

No

What is the title of the new course?

Imaging the Invisible: Physics in Medicine

Write the catalog description of your proposed course:

Have you ever seen an x-ray of a broken bone or an ultrasound of a fetus and wondered how that image came to be? For many, the inner workings of medical imaging is a mystery. In this course, we will pull back the curtain to explore the fundamental physical principles behind technologies such as X-ray, CT, MRI, ultrasound, and nuclear medicine. Along the way, we'll uncover how physics plays a vital role in healthcare and see how medical imaging is an interdisciplinary field where physics, biology, engineering, and medicine converge to improve lives.

How many credit hours will this course be?

4

How will the course be graded?

Letter grade

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Please select the course repeat option for this course:

Not repeatable for credit

What is the offering cycle for this course?

Fall semester

Does your course have any prerequisites?

No

Is this new course being proposed because of a new or revised major or minor proposal?

No

Any other comments for the Registrar at this time?

No

Gen Ed and Academic Programs

Is this course part of Gen Ed?

- Yes

Does your course count in the general education core (one of the core classes that cannot be double-dipped in your major or minor)?

Intellectual Discovery [DIS]

Does this course count towards a major or a minor?

No, it does not count toward any particular major or minor

Is this course part of an academic program?

- This course does not fulfill academic program requirements

Does this course include any community engagement?

No

Does this course participate in the GoGlobal Program?

No

Information for Curriculum Review

Rationale and evidence for new course's consistency with departmental mission:

This DIS course will help foster scientific literacy, interdisciplinary exploration, and student engagement with real-world applications of physics. The goal is to get students interested about science and interdisciplinary fields early on in their college career with the hope that this will foster more cross-departmental collaborations and give students insight into potential career opportunities in the

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sciences and related medical fields.

The Department of Physics currently offers one DIS course, The Search for Intelligent Life, which is taught by faculty with a background in astronomy. The creation of this additional DIS course provides the department more options for contributing to the general education core.

List all student learning outcomes for this course.

Specific Course Learning Outcomes:

• Explain the physical principles behind medical imaging modalities.
• Demonstrate an understanding of how imaging tools open new avenues for scientific discovery.
• Identify how healthcare is an interdisciplinary field and describe the specific contributions of physics to the medical field.
• Evaluate the societal impacts and future potential of medical imaging technologies.

Intellectual Discovery Learning Outcomes:

• Teamwork: Demonstrate the ability to operate in a constructive team environment.
• Integrative Learning: Synthesize concepts, theories, or frameworks of fields of study and apply them to situations or problems.

List any units or content areas that will be required for all sections of this course.

1. X-ray/CT – EM Waves
2. MRI – Magnetic Fields
3. Ultrasound – Sound Waves
4. PET Scans - Radioactivity

List any assignments, tests, or other assessments that will be required for all sections of this course.

Students will engage in a group project during the semester.

List any readings or other materials that will be required for all sections of this course.

N/A

List any course policies that will be required for all sections of this course.

N/A

If you would like to specify how requirements for contact hours must be met for all sections of this course, please indicate below. (e.g., if any experiential learning activities will replace seat time)

N/A

Is there anything else the reviewing parties should know about this new course proposal that hasn't been addressed?

No

Sample Syllabus

- DIS1000_PhysicsofMedicalImaging_SampleSyllabus_final.docx