A - New Course Proposal V. 7.2022 : Entry # 3483

DEAN Decision

Approved

Date

03/27/2025

Is this course intracollegiate or intercollegiate?

Intracollegiate

SCHOOL EPC Decision

Approved

Date

10/23/2025

GEC Decision

Approved

Date

01/09/2026

APIRC Decision

Approved

Date

02/02/2026

Begin Form

Today's Date

03/25/2025

Your Name:

Grace Hamilton

Your Email:

ghamilt3@highpoint.edu

Are you a Department Chair?

No

Department Chair Name

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Todd Knippenberg

Email address of your Department Chair

mknippen@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.

BCH

Proposed Course Number?

2000-level, need number to be assigned by program chair

Is this course cross listed?

No

Does this course replace a current course?

No

What is the title of the new course?

Antibiotic Discovery

Write the catalog description of your proposed course:

This course is designed for students interested in biochemistry, chemistry, and/or biology, to be taken during or after their second year. It is a course-based undergraduate research experience (CURE) designed for students with no prior research experience. Student-scientists in this class will take part in a global initiative to identify novel antibiotics produced by microbes in the local environment by isolating, culturing, and testing fungi and their organic extracts for antibacterial activity. Along the way, they will learn about the biochemistry, usage, history, and imperiled future of antibiotics— in addition to the basic laboratory skills of microbiology.

How many credit hours will this course be?

2

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?

Yes

Please list all prerequisites this course requires:

A letter grade of C or better in BIO-1500 and CHM-1020.

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 any general education categories that can be double-dipped in the core or in a major/minor?

- Experiential Learning

Does this course count towards a major or a minor?

Yes

Please list the Major / Minor and if it is Required or Elective

Biochemistry Major – elective/ biochemistry minor – elective; Biology Major – elective/ biology minor – elective; Chemistry Major – elective/chemistry minor – elective

Is this course part of an academic program?

- This course does not fulfill academic program requirements

Does this course include any community engagement?

Yes

Does this course participate in the GoGlobal Program?

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No

Information for Curriculum Review

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

The Department of Chemistry at HPU believes that new knowledge in the chemical sciences is only generated in the laboratory through research, however student demand for mentored research experience in faculty labs currently exceeds capacity in the School of Natural Sciences. For example, this year there were 59 applicants for 26 funded student positions in the Summer Research Program in the Sciences (SuRPS). It is currently very difficult for our majors to satisfy the EXP requirement without obtaining one of those coveted positions in a professor's lab. Moreover, unpaid research experiences during the academic year are not equally accessible to all students— only those who can afford to forgo paid work in favor of gaining laboratory experience. Course-associated research experiences (CUREs), such as the Tiny Earth Program upon which this class is modeled, make authentic research experiences accessible to a greater number of students. CUREs are also an evidence-based teaching practice that has been shown to improve student motivation and retention in STEM majors that otherwise have notoriously high attrition rates, especially among students from backgrounds underrepresented in STEM. The creation of a this course, a biochemistry CURE primarily for students in their second year, will therefore help address both the need for EXP courses in our department and historically low and inequitable retention rates in chemistry, biochemistry, and biology majors.

List all student learning outcomes for this course.

Through researched-based learning, at end of the semester students will be able to:
1. Describe how common classes of antibiotics control microbial growth and how microbes develop antibiotic resistance.
2. Demonstrate aseptic technique and proper handling of Risk Group 1/2 microorganisms.
3. Formulate testable, scientific hypotheses and design well-controlled experiments to test them.
4. Develop research plans collaboratively based on observed experimental outcomes.
5. Construct and interpret visual representations of quantitative data.
6. Communicate scientific findings to the public and peers through oral presentations and written reports.

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

Experimental design

Biochemistry & history of antibiotics

Maintaining a lab notebook

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

Participation

Reading quizzes

Lab notebook

Project proposal

Antibiotic resistance infographic/social media post

Mid-term practical exam

Poster Presentation

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

Tiny Earth Student Research Guide ($18.84)

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

Lab dress is required.

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

NA

Sample Syllabus

- BCH200XX_syllabus_DRAFT2.pdf

Additional Documents

- Budget_draft1.xlsx