

# Interdisciplinary and Integrated Collaborative Teaching Course Inventory

## Overview

The GE allows students to take a single, 4+ credit course to satisfy a particular GE Theme requirement if that course includes key practices that are recognized as integrative and high impact. Courses seeking one of these designations need to provide a completed Integrative Practices Inventory at the time of course submission. This will be evaluated with the rest of the course materials (syllabus, Theme Course submission document, etc). Approved Integrative Practices courses will need to participate in assessment both for their Theme category and for their integrative practice.

Please enter text in the boxes below to describe how your class will meet the expectations of Interdisciplinary and Integrated Collaborative Teaching courses. It may be helpful to consult your Director of Undergraduate Studies or appropriate support staff person as you complete this Inventory and submit your course.

Please use language that is clear and concise and that colleagues outside of your discipline will be able to follow. You are encouraged to refer specifically to the syllabus submitted for the course, since the reviewers will also have that document. Because this document will be used in the course review and approval process, you should be *as specific as possible*, listing concrete activities, specific theories, names of scholars, titles of textbooks etc.

## Accessibility

If you have a disability and have trouble accessing this document or need to receive it in another format, please reach out to Meg Daly at [daly.66@osu.edu](mailto:daly.66@osu.edu) or call 614-247-8412.

## Pedagogical Practices for Interdisciplinary and Integrated Collaborative Teaching Courses

Course subject & number

Molgen/Philos 2690

Please answer the 3 questions below.

### **“Collaborative”**

Meaning and context: Teaching partners are expected to collaborate on (1) defining the objectives for the course, (2) putting together the course materials, (3) conducting the formal instruction of students, and (4) evaluating student performance. Note that courses in which one faculty member of record convenes the course and invites one or more guest speakers to take part in the class are not considered courses taught collaboratively. (Those courses may, however, utilize outside speakers when appropriate *in addition to* the primary faculty members of record.)

***In the box below, list which two or more faculty members from what departments/units within which college(s) will engage in the interdisciplinary and integrated collaborative teaching. (This information should also be readily visible on the syllabus.)***

Susan Cole (Molecular Genetics) and Justin D'Arms (Philosophy) originally developed the course. Currently, the 3-credit hour version of the course is offered annually with Susan Cole as the instructor from Molecular Genetics and Justin D'Arms and Dana Howard alternating as the representative from Philosophy.

### **“Interdisciplinary”**

Meaning and context: Participating faculty must be from *demonstrably* different disciplines, programs, or departments. (Think along the lines of Art & Molecular Genetics, Pharmacy & History, Public Health & Music, etc.)

***In the box below, explain what the distinct disciplines and contributions of each faculty member are. Furthermore, explain where and how these will show in/contribute to the course GEN Theme. (This information should also be readily visible on the syllabus.)***

Genes and Society (MOLGEN/PHILOS 2690) is an interdisciplinary exploration of the science of genetics and the philosophical, ethical, and societal implications of its findings. Team taught by a philosopher (D'Arms or Howard) and a molecular biologist (Cole), this course promotes student engagement in a broad, interdisciplinary conversation, promoting understanding both of the science of genetics, and the ways this science has been integrated into social and ethical conversations about the nature of humanity. The field of genetics has identified DNA as the repository of genetic information, and provides links between inherited changes in DNA sequences and a variety of physical and behavioral traits in all organisms. More recently, genetic optimism has suggested that knowing gene sequences would revolutionize science, medicine, and society. However, our understandings (and misunderstandings) of genetic inheritance have had enormous societal impacts that are not generally engaged during coursework aimed at science majors, and discussions of these issues in the context of humanities can be impeded by a comparatively weaker understanding of the science.

Here, the combined expertise of instruction from Molecular Genetics and Philosophy provides groundwork and advanced insight into the intersections of science and philosophy, especially as they relate to cultural traditions, cultural transformations, and medical and legal norms as they are triggered by changes in scientific understanding and technology. This dual support will help students to understand the science that

underlies genetic inheritance, and inform their understanding of how knowledge of genetic shapes societies. Starting in the early 1900s when the work of Mendel and Darwin were first connected, our understanding of how genes influence traits and behaviors have had wide-ranging consequences, ranging from implementation of eugenic policies, to upheavals due to genetic screening and genetic therapies, to changes in how we view race,sex, and disability, to recent proposed revolutions in individualized medicine. Guided by the co-instructors, this course enables students to consider the philosophical, social, and ethical implications of genetics, from a position that is firmly grounded in an understanding of modern molecular genetics.

## **“Integrated”**

Meaning and context: Interdisciplinary integrative teaching is different from multidisciplinary teaching where “faculty present their individual perspectives one after another, leaving differences in underlying assumptions unexamined and integration up to the students. In interdisciplinary courses [...] faculty interact in designing a course, bringing to light and examining underlying assumptions and modifying their perspectives in the process. They also make a concerted effort to work with students in crafting an integrated synthesis of the separate parts that provides a larger, more holistic understanding of the question, problem, or issue at hand.” (Klein & Newell, 12)

***In the box below, explain how the faculty members will be teaching the course together by being both present during all or most course meetings (at least 50% of the meetings) and bringing their different disciplines and perspectives into dialogue to address the GEN Theme. Exactly where and in what manner will this happen? What kinds of assignments will the students produce that demonstrate their ability to integrate the different disciplinary questions, methods, or knowledge to address the GEN Theme at hand? Be specific. (This information should also be readily visible on the syllabus.)***

Both instructors are present during all class sessions. In many sessions, one instructor takes “lead”, assigning readings and guiding discussions. We have found that the other instructor can usefully model appropriate discussion and inquiry, both by requesting clarification and by providing input from alternate viewpoints. The instructors have worked together to develop closing in-class activities for each module that synthesize the scientific and philosophical materials covered in class, and work together to guide and debrief these activities. Sample prompts for a selection of these closing activities have been uploaded to the curriculum system. Both instructors are actively engaged in evaluating all student assignments; and students receive feedback from both instructors on all Genes and Society project milestones..

Additional assignments require students to integrate the fields of genetics and philosophy:

- 1) The Public Philosophy/Public Science Communication Exercises (students complete two over the course of the semester) This can take various forms, such as a newspaper op-ed, a letter to the editor in response to a recent article, a letter to a political representative, a script for a call to a political representative, a Facebook post, or a blog post. Any issue that falls at an intersection between genetics and philosophy related to the topic of the module is acceptable, and writeups are required to accurately engage with both science and philosophy, and articulate and defend a related position for the specified audience. Expectations are found in the submitted syllabus, and sample prompts for a selection of these writing assignments have been uploaded to the curriculum system. Here, by deeply understanding connections between genetics and current social concerns and communicating to a broad audience, students will engage with the theme topic of traditions, cultures, and transformations.
- 2) The Genes and Society project is a scaffolded project that culminates in an original research paper in which students bring ethical or philosophical thinking to bear on an issue of their choice having to do with genetics. The goal of the assignment is to facilitate independent critical thinking and argumentation about genetics, deploying the analytical and philosophical tools used in class. In this paper, students must identify and explain some ethical or philosophical issues that arise in connection with some facts, principles or technology having to do with genetics and must clearly explain the scientific subject matter along with ethical or philosophical issues that arise in connection with this topic. Expectations are found in the submitted syllabus. This assignment provides an opportunity for students to engage with the theme topic of traditions, cultures, and transformations by performing their own scholarly research and thinking on a topic of interest to them.