New York City College of Technology
Interdisciplinary Committee

Application for Interdisciplinary Course Designation

Date November 8, 2013

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Department(s) English

1. Identify the course type and title:

   ☑ An existing course ENG 1773 Weird Science: Interpreting and Redefining Humanity

   ☐ A new course _____

   ☐ A course under development _____

2. Provide a course description This writing-intensive interdisciplinary course will allow students to explore the literature of shifting and expanding definitions of humanity and post-humanity from the perspectives of the natural and social sciences, technology, and engineering, incorporating digital media.

3. How many credits will the course comprise? 3 How many hours? 3

4. What prerequisite(s) would students need to complete before registering for the course? Co-requisite(s)?

   CUNY proficiency in mathematics and ENG 1101. Students must also have a level of computer competency necessary for taking an online course.

5. Explain briefly why this is an interdisciplinary course. This course introduces students to a spectrum of literature in the sciences, technology, and engineering through an interdisciplinary exploration of the enduring question: What does it mean to be human? Through this exploration, students are familiarized with concepts in the natural and social sciences, technology, and engineering, highlighting complementary perspectives. For example, students will be introduced to the anatomy and physiology of the cell while reading non-fiction literature designed to appeal to the imagination, including Richard Dawkins' *The Selfish Gene* and Rebecca Skloot's *The Immortal Life of Henrietta Lacks.*

   Guest lecturers from across the disciplines provide their perspectives on the enduring question that informs the theme of the course. The course goals are to provide and engage students with an understanding of ideas and connections in the natural and social sciences, technology, and engineering, including (a) cultural factors that affect these disciplines; (b) philosophical, historical, and ethical perspectives; (c) methods for finding pertinent information; (d) critical evaluation of ideas and their sources; (d) developing the critical writing skills to discuss these ideas in an academic context; and (f) using multimedia and simulations to communicate information.

6. What is the proposed theme of the course? What complex central problem or question will it address? What disciplinary methods will be evoked and applied?
   As the course is divided into two parts, the theme of the course is two-fold: On Being Human and On Being Virtually Human (or on being human, virtually). This course explores an enduring question: What does it mean to be (virtually) human?

   Guest lecturers apply disciplinary methods to interpreting and redefining humanity such as the scientific method, philosophical inquiry, gender and sexuality studies, human subjects research policies, macroeconomic theories, chaos theory, and mathematics proofs.

7. Which general learning outcomes of an interdisciplinary course does this course address? Please explain how the course will fulfill the bolded mandatory learning outcome below. In addition, select and explain at least three additional outcomes.

   ☑ **Purposefully connect and integrate across-discipline knowledge and skills to solve problems**
   Throughout the semester, students will draw on the disciplinary perspectives of guest lecturers from such departments as African-American Studies, Biology, Computer Systems Technology, Entertainment Technology, Mathematics, Physics, and Social Science (economics, philosophy, psychology, and sociology). Students will connect these perspectives, course readings, and their own research to formulate, refine, and support their thesis on what is means to be (virtually) human.

   ☑ **Synthesize and transfer knowledge across disciplinary boundaries**
   Before and after formulating their theses, students synthesize the perspectives of two or more disciplines on the enduring question to interpret humanity in their term paper and to redefine it in their group project simulation, which requires that students transfer knowledge across disciplinary boundaries as they imagine the future and to create a representation of what it means to be human in a virtual world.

   ☐ Comprehend factors inherent in complex problems

   ☐ Apply integrative thinking to problem solving in ethically and socially responsible ways

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   ☑ Recognize varied perspectives
   Students will develop an understanding of and an ability and need to apply the diverse perspectives to explore the enduring question of what it means to be human; they will develop a respect for diverse viewpoints and apply concepts that are the foundation of other disciplines to formulate their own thesis and to gain multidisciplinary evidence to support it.

   ☑ Gain comfort with complexity and uncertainty
   Through a case study entitled "A Network of Everything: Ecology, Complexity, and the Ways of Being Human" students learn that systems are made of parts that interact with each other and as the number of parts of a system and the number of their interactions both increase, the complexity of the system increases. Complexity, in this case, refers to the behavior of complex systems. That a system is complex does not mean that it is disorganized. Complex systems are organized at different levels.

For example, cells (a complex system itself) organize to form tissues, which organize to form organs, which organize to form bodies, which organize to form ecological or social systems. As we go up the different organizational levels of a system, new properties emerge (so-called emergent properties) which are not present at the lower levels. For example, there are properties in tissues or organs that cannot be predicted (or, at least, are not present) from the properties of cells. Analytical thinking offers little help in understanding complexity. Students will gain comfort with uncertainty as understanding complexity remains one of the major challenges in many areas of modern science, from the life and natural sciences to the social sciences.

☑ Think critically, communicate effectively, and work collaboratively
As this writing-intensive course is housed in the English department, it focuses on effective communication. Throughout the semester, students are challenged to understand complex ideas, analyze, compare and contrast, evaluate arguments carefully considering a variety of perspectives, synthesize these ideas, and draw conclusions interpreting humanity. Students also work collaboratively on a group project that simulates their redefined humanity.

☐ Become flexible thinkers

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☐ Other

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General Education Learning Goals for City Tech Students

- **Knowledge:** Develop knowledge from a range of disciplinary perspectives, and hone the ability to deepen and continue learning.
- **Skills:** Acquire and use the tools needed for communication, inquiry, creativity, analysis, and productive work.
- **Integration**: Work productively within and across disciplines.
- **Values, Ethics, and Relationships**: Understand and apply values, ethics, and diverse perspectives in personal, professional, civic, and cultural/global domains.

8. How does this course address the general education learning goals for City Tech students?
   - **Knowledge:** Targeted primarily to second-semester freshman, this course introduces students to a range of disciplinary perspectives to pique their interest to deepen and continue learning by enrolling in courses such as physics and sociology that they may not have otherwise considered.
   - **Skills:** Students learn to prepare an annotated bibliography, develop concept maps, create simulations, conduct peer review, edit and revise documents.
   - **Integration**: Case studies allow students to work productively within disciplines, while their final group project and term paper, along with the coursework that scaffold these assignments, require that students also work productively across disciplines.
   - **Values, Ethics, and Relationships**: As students explore infamous human subject research studies, earn research certification, and participate in an educational research study, they gain an applied understanding of research ethics.

9. Which department would house this course[1]? English
Would all sections of the course be interdisciplinary? ☐ No ☑ Yes

a) Would the course be cross-listed in two or more departments? ☑ No ☐ Yes
Explain.

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b) How will the course be team-taught[2]? ☐ Co-taught ☑ Guest lecturers ☐ Learning community

If co-taught, what is the proposed workload hour distribution? _____
☐ Shared credits ☐ Trading credits
If guest lecturers, for what approximate percentage of the course? ☐ Minimum 20%[3] ☑ other: 60%

Please attach the evaluation framework used to assess the interdisciplinarity of the course.[4]

Attached is a sample guest lecturer case study and grading rubric. Also attached are assessment rubrics for the concept map, literature review, and group project. Course assignments (i.e., annotated bibliography, case studies, midterm literature review, group project proposal presentation, final term paper topic proposal) serve as scaffolds for the final group project and presentation, and the term paper.

c) What strategies/resources would be implemented to facilitate students' ability to make connections across the respective academic disciplines?
Students will prepare and revise an annotated bibliography to facilitate their ability to make connections across academic disciplines. The use of this strategy requires students to write one paragraph summarizing, assessing and reflecting on assigned course readings. Later in the semester, students research their chosen topic and find references that will support their thesis. Students must evaluate any new references that they have added to the class readings for relevance, expertise, currency, accuracy, and purpose.

The Visual Understanding Environment (VUE) online resource will be used to support teaching, learning and research. The VUE (http://vue.tufts.edu) provides a flexible visual environment for structuring, presenting, and sharing concept maps that allow students to make connects across disciplines.

10. Would the course be designated as:
☑ a College Option requirement[5]? ☑ an elective? ☑ a Capstone course[6]? ☐ other? Explain.

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[1] An interdisciplinary course for the College Option requirement may be housed in a department that is not liberal arts.
[2] Attach evidence of consultation with all affected departments.
[3] While an interdisciplinary course must be team-taught, there is no formal percentage requirement, but this minimum is a guideline.
[4] In the case that a course is equally taught, include proposed plans for faculty classroom observation and student evaluation of teaching.
[5] To qualify for the College Option, such a course must also meet the New York State definition of a liberal arts and sciences course. http://www.highered.nysed.gov/ocue/lrp/liberalarts.htm
[6] A course proposed as a Capstone course must be separately approved by the Capstone Experience Committee.