

Honors 3050
Methods of Discovery
Spring, 2001 - T/Th 9:40-11:07

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Texts: The necessary books for the class are:

Scientific Literacy and the Myth of the Scientific Method, by Henry H. Bauer
Pandora's Hope, by Bruno Latour
The Century of the Gene, by Evelyn Fox Keller
The Gold Bug Variations, by Richard Powers

Other readings will be identified during the course, and you can expect to read other works along the way.

General Introduction: Our goal in this course will be to develop and enrich our understanding of methods of discovery and research used in the broad range of human intellectual and creative endeavors. Our efforts will include and integrate examples from the sciences (biological/physical, social/behavioral) and humanities (visual/performing arts, literature, philosophy). We will explore relationships among the methods, and examine interdisciplinary and team approaches to these projects. We will include recognition and evaluation of ethical, social, and political aspects and ramifications of research and creative work. As a touchstone, we will use genomics as a theme and point of departure. This course is intended to help you develop your ability to identify reasonable research problems, and to specify and design particular research projects. We will focus on clarifying appropriate methodologies to be applied in doing your own research/creative projects, and in analyzing and assessing the results of your work. We will explore these issues through a variety of discipline based and interdisciplinary examples. You can expect to find the course challenging, but rewarding.

During the course, we will explore and apply a variety of investigative methodologies. Our emphasis will be on the application of advanced reading, thinking and writing skills to the study of complex problems, with particular attention being paid to team-based research efforts.

Requirements/Responsibilities: Your first responsibility is to be prepared, aware, active participants in class, and in team projects. This means that you will be expected to read attentively each of the assigned sections, and be prepared to contribute to discussions of the material each class day. To help you prepare for class discussions, you will:

1. write a brief response to each reading, in the form of three “strong” and three “weak” elements/aspects of each day’s material, to be handed in each class day; and be active participants in class. For some sections, I may give you more explicit directions for your responses to the readings.

More extended writing is also important, and so you will be writing longer pieces both in and out of class:

2. There will be at least one in-class writing experience (approximately one hour).
- 3.,4. There will be two six to eight page written responses to / analyses of one or more books you are reading for the class.

Identifying a research/creative project, developing a research proposal, and working in teams are central themes of this course, so small (3 to 5) teams will:

5. working together, identify, clarify, and specify a specific reasonable research/creative project, to which all members of the team could contribute appropriately and significantly. This doesn’t have to be, but could be, a project that one or more members of the team will actually work on during their senior year. The team will identify appropriate methods (plural) to be used in the project, from various disciplinary and interdisciplinary perspectives, and identify methods to be used to assess and evaluate the project’s results. The team will develop an explicit, clear project proposal, explaining the background and significance of the project, specifically identifying the goal of the project, outlining the methods and approaches to be used, describing the means to be used in evaluating and assessing the project, and exploring ethical and social aspects of the project. This project proposal is likely to involve interactions with various faculty on campus.

Each of you will also:

6. write/develop an individual longer (8-12 pages) final paper/project, on a topic of your choice related to the material of the course, and showing your own learning and development through the course.

The grades for this course will be based on these six components. Each component will carry approximately the same weight. Plus/minus grading may be used.

The work you do for this course will be your own. You are not to submit other people's work and represent it as your own. However, you will be expected and encouraged to work collaboratively with others during the course.