

Department: MCB

Course No.: 222W

Title: Human Disease and the Development of Therapeutic Agents

Credits: 3

Contact: Kenneth M. Noll

WQ: W

Catalog Copy: MCB222W Human Disease and the Development of Therapeutic Agents. First semester. 3 credits.

Molecular basis of human disease and strategies for developing therapeutic treatments. Applications of genetic, cellular, and biochemical information in treating disease states. Especially appropriate for students interested in biomedical research and the health profession.
Kendall

Enrollment Requirement Group: ENGL 105 or 110 or 111 or 250; open to juniors or higher. Recommended preparation: one 200 level course in MCB.

W Criteria: As noted in the portions of the course syllabus below, students cannot pass the course without passing the W component.

From the syllabus: This course covers a spectrum of topics ranging from the genetic basis for various disease states, the biochemistry of the processes underlying the transformation of a healthy tissue to a diseased one, and the socioeconomic impact of caring for the sick. An emphasis is placed on linking an understanding of human disease with the development of therapeutic agents with examples taken from HIV infection, obesity, and immunomodulatory diseases. The students must learn the strategies of drug discovery, including how we screen the DNA sequences generated by the human genome project and decide which are worth pursuing, how we assay proteins of unknown function, and how we develop therapeutic agents to modulate the activity of macromolecules in useful ways. There are five writing assignments required for the course. These require that the students have learned a good deal about the subject matter and then can use it to argue a point, debate a strategy, or generate a new proposal. Students must process the material and synthesize something new with it rather than simply report facts found in a library search. The writing assignments are not only a remarkably good indicator of the students' understanding of the subject, but also of their depth of thinking and their willingness to push their thinking in different directions.

The following text from the course syllabus describes how written work (totaling 16 pages) is subject to revision and so meets the W requirements: There are three short essays (2 pages each, total 6 pages) and two essay exams (10 pages total) required for the course. The essays can be revised and turned in again with possible improvement in grade.

The written work will receive a letter grade weighted equally on content and written expression. Students will have the opportunity to respond to the instructor's written evaluation through a revised essay. The final grade will correspond to 60% that of the revised essay and 40% that of the original essay.

All assignments are to be done on an individual basis. You cannot pass the course without passing the W component described above.

The student will receive extensive evaluation of all written work. This includes comments and suggestions written directly on each essay and a separate evaluation sheet which indicates areas the student should try to strengthen in a revision.