University California, Berkeley
Professional Masters in Molecular Science and Software Engineering
Online Degree

Ethics in Molecular Science and Software Engineering W207, 1 Unit
Fall 2020

Instructors:
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Course description: This course will expose students to applied ethics in professional ethics, information technology, intellectual property, and corporate ethics.

Contribution of this course to the broader curricular objectives: Required course for all MSSE students

Course format: The 1 unit ethics course will expose students to the impact that science and technologies have in the public sphere.

Reading List and Resources:
Reader from *Ethics of Emerging Technologies*, T. F. Budinger and M. D. Budinger (Wiley & Sons, 2006)

Grading: Students will be assessed on 4-6 homework questions involving real case studies in the areas of professional ethics, information technology, intellectual property, and corporate ethics.

Prerequisites: Acceptance into the MSSE program.

Course requirements: Each student is required to view all of the online lectures, to submit all homework assignments, discussion postings for grading, and complete a final project.

Office hours: The instructor will be available 2 hours per week for one on one consultation by appointment. These synchronous office hours will be posted on the course website. The Instructor will also be available for synchronous open class discussion one hour per week. These will be archived and available to students**.**

Learning objectives for this course:

A. Show mastery in ethics in the four areas of ethical topics
B. Apply ethics in debate topics developed for the class

Course Schedule:

Week 1: Introduction to the Four A's for Approaching Ethical Dilemmas. Acquire the facts, consider Alternatives, Assess alternatives in the context of moral theories and stakeholders, Action with flexibility on changing actions under new information or developing circumstances. Evaluation of JAMA case study in the context of 4A's.

Week 2: Ethics of Professional Conduct: Personal Ethics Professional conduct in science and engineering research and business: Plagiarism, falsifying data, scientific fraud; authorship,

mentoring, peer review. Academia and industry: conflicts of interest and intellectual property. Case study of Jan Hendrik Schon.

Week 3: Ethics of Professional Conduct: Corporate Ethics Company credos. Various case studies including Johnson & Johnson Tylenol tampering, Ford Pinto faulty fuel tank design, Odwalla E. coli tainted apple juice.

Week 4: Ethics of Professional Conduct: Information Technologies Ethics Ethical considerations of privacy, ownership, access, and community.