

May 22, 2018

To Whom It May Concern:

The National Institutes for Health (NIH) requires that all trainees, fellows, participants, and scholars receiving support through any NIH training, career development award, research grant, and dissertation research grant must receive instruction in responsible conduct of research (RCR). This NIH policy took effect with all new and renewal applications submitted on or after January 25, 2010 and all continuation applications with deadlines on or after January 1, 2011.

I certify that I have reviewed the enclosed Master Course Syllabus dated November 14, 2016 related to course SCI 740, *Research Ethics and Responsible Conduct of Research*, and that this course fulfills the RCR requirements of the NIH.

Sincerely,



David E. Ash
Vice President for Research and Dean of Graduate Studies

Central Michigan University
College of Science and Engineering

Master Course Syllabus

<u>SCI 740</u> Desig. & #	<u>Research Ethics and Responsible Conduct of Research</u> Full Title of Course	1 (1-0) Credits (Mode)
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- I. **Bulletin Description:**
Basic training in research ethics and the responsible conduct of research. CR/NC only.
- II. **Prerequisites/Co-requisites/Recommended:**
Prerequisite: Admission to the Biochemistry, Cell and Molecular Biology M.S. or Ph.D. program, the Biology M.S. program, the Chemistry M.S. program, or the Neuroscience M.S. or Ph.D. program.
- III. **Rationale for Course Level:**
This course requires that students have previously developed the ability to critically analyze data and apply concepts broadly.
- IV. **Suggested Textbooks:**
None.
- V. **Other Requirements and/or Materials for the Course:**
None.
- VI. **Student Learning Course Objectives:**
After successful completion of the course students will be able to:
 1. Compare and contrast regulatory guidelines for human subject, animal research, and biosafety
 2. Describe the principles, regulations, and rules involved in the responsible conduct of research
 3. Apply the basic principles of research ethics to experimental design.
 4. Propose solutions to manage conflicts and scientific collaborations
 5. Apply best practices of acquisition of research data and laboratory tools in case studies.
 6. Identify stakeholders in ethical problems.
- VII. **Suggested Course Outline (as per NIH guidelines):**
Week 1. Conflict of interest—personal, professional and financial
Week 2. Research Ethics- Do's and Don'ts
Week 3. Contemporary ethical issues in bioscience research
Weeks 4-5. Environmental and societal impacts of scientific research
Week 6. Scientists as responsible members of society
Weeks 7-8. Policies regarding human subjects and live vertebrate animal research, and biosafety
Week 9. Mentor/mentee responsibilities and relationships
Week 10. Collaborative research including collaborations with industry
Week 11. Ethics of peer review
Weeks 12-13. Data acquisition and laboratory tools; management, sharing and ownership
Week 14. Responsible authorship and publication
Week 15. Research misconduct and policies for handling misconduct

Week 16. Final discussion

VIII. Suggested Course Evaluation:

1. Online Tutorials and Tests (15%)
2. Assignments (25%)
3. Participation (60%)

Syllabus Prepared By:

Neeraj Vij, Ph.D.

Typed Name of Faculty, Credentials

11/14/16

Date