Responsible Conduct of Research for Engineers

The following modules are required for completion of the Engineers RCR course:

- WVU – Introduction to the Responsible Conduct of Research
- WVU – Introduction to RCR for Engineers
- Research Misconduct
- Whistleblowing and the Obligation to Protect the Public
- Responsible Authorship in Engineering
- Ethical Issues in Peer Review and Publication in Engineering Research
- Conflicts of Interest in Engineering Research
- Environmental Ethics
- The Ethics of Mentoring
- Human Subjects Research in Engineering Fields
- The Use of Live Animals in Research
- Ethical Issues in the Management of Date in Engineering Research
- Collaborative Research in Engineering Fields
- Completing the RCR for Engineers Course
- The CITI RCR Course Completion Page

Each module in this course includes several videos discussing each of these topics, and also includes several optional case studies. We would like to recommend that you complete any optional modules in this course so you can enhance your understanding of the topics being paid attention.

When you begin the course, you will be required to read the **Integrity Assurance Statement**, and then proceed to the **Introduction to the Responsible Conduct of Research** and **Introduction to RCR for Engineers** modules. The introductory modules contain information on WVU policies, professional self-regulation, government regulations, institutional policies, and personal responsibility.

The **Research Misconduct** module contains information such as a definition of research misconduct, why people commit research misconduct, policies and procedures that address research misconduct, guidelines for reporting allegations of research misconduct, and guidance from engineering journals and societies.

The **Whistleblowing and the Obligation to Protect the Public** module covers such topics as the special responsibilities of engineers, how engineers protect the public, what whistleblowing is, the dangers of whistleblowing, how to avoid whistleblowing, how to blow the whistle, and statutes, policies, and procedures.

The **Ethical Issues in Peer Review and Publication in Engineering Research** module contains information such as forms of publication, ethical obligations of authors, peer review for journal publication, ethical obligations of reviewers, and copyrights and open-access publication.

The **Conflicts of Interest in Engineering Research** module gives you information about financial conflicts of interest, why you should be concerned, conflict of commitment, managing conflicts of interest, and how disclosure works.

The **Environmental Ethics** module covers such topics as environmental and social metrics, perspectives on ethics, perspectives on non-human species and the environment, the evolution of responsible conduct, risk, reliability and ethics, engineering as an applied social science, failure, implementing sustainable designs, optimizing for sustainable design, and revisiting the harm principle.

The **Ethics of Mentoring** module contains information such as the role of an advisor, expectations, and challenges of diversity.

The **Human Subjects Research in Engineering Fields** module covers the definition of human subjects research, engineering research involving human subjects, regulations governing human subjects research, ethical principles guiding human subjects research, informed consent, and institutional review boards.

The **Use of Live Animals in Research** module contains information such as what the USDA, PHS, and AAALAC are, what the IACUC is, the attending veterinarian, investigator responsibilities, avoiding pain and distress, analgesia and euthanasia, making changes to your protocol, studies employing surgery procedures, occupational health and safety, and reporting misuse, abuse and non-compliance.

The **Ethical Issues in the Management of Data in Engineering Research** module covers such topics as who decides what is ethical in data handling, what is data, data acquisition, integrity of data and its analysis, legal issues, and professional standards.

Finally, the **Collaborative Research in Engineering Fields** module contains information such as the trend toward more collaborative research, what collaborative research is, what some of the potential problems with collaborative research are, concluding or continuing the collaboration, ways collaborations can be enhanced, and what the institutional role is in the collaborative process.