



(COMMON TO ALL ENGINEERING & TECHNOLOGY STREAMS)

COURSE CODE	COURSE TITLE	L	T	P	C
40210GE102	RESEARCH AND PUBLICATION ETHICS	1	1	0	2

Course Category: Foundation Course

a. Preamble:

Today research is of immense importance in every field of life. Hence students need sound initiation in the world of research. The ethical pursuit of research in humanities, social sciences and other scientific disciplines is essential to the achievement of robust goals and research outcomes within the academe and it promotes systemic contributions in the field of advanced learning and knowledge generation.

b. Prerequisite Courses:

The course is primarily open to all Ph.D. scholars.

c. Related Courses:

Research Methodology

d. Course educational objectives:

To impart knowledge and skills required for research:

- Provide students with the fundamental knowledge of basics of philosophy of science and ethics, research integrity, publication ethics.
- Hands-on sessions are designed to identify research misconduct and predatory publications.
- Indexing and citation databases, open access publications, research metrics (citations, h-index, Impact Factor etc).

e. Course Outcomes:

Upon the successful completion of the course, scholar will be able to:

CO Nos.	Course Outcomes	Knowledge level (Based on revised Bloom's Taxonomy)
CO1	Apply theories and methods in ethics, research ethics and scientific conduct.	K3
CO2	Understand the philosophy of science and ethics, research integrity and publication ethics.	K2
CO3	Identify software tools in open access publishing to check publisher copyright, predatory publications and journal suggestions.	K3
CO4	Acquire skills of presenting arguments and results of ethical inquiries and understand the usage of plagiarism tools.	K3
CO5	Utilize the indexing, citation databases and research metrics (citations, h-index, impact Factor, etc.).	K2

f. Course Content

Unit I: PHILOSOPHY, ETHICS AND SCIENTIFIC CONDUCT

L-8 + T-0

Philosophy, Ethics (3 Hrs.): Introduction to philosophy: definition, nature and scope, concept, branches - **Ethics:** definition, moral philosophy, nature of moral judgments and reactions.

Scientific Conduct (5 Hrs.): Ethics with respect to science and research - Intellectual honesty and research integrity - Scientific misconducts: Falsification, Fabrication and Plagiarism (FFP) - Redundant Publications: duplicate and overlapping publications, salami slicing - Selective reporting and misrepresentation of data.

Unit II: PUBLICATION ETHICS

L-7 + T-0

Publication ethics: definition, introduction and importance - Best practices / standards setting initiatives and guidelines: COPE, WAME, etc. - Conflicts of interest - Publication misconduct: definition, concept, problems that lead to unethical behaviour and vice versa, types - Violation of publication ethics, authorship and contributor ship - Identification of publication misconduct, complaints and appeals - Predatory publisher and journals.

Unit III: OPEN ACCESS PUBLISHING

L-0 + T-4

Open access publications and initiatives - SHERPA/RoMEO online resource to check publisher copyright & self-archiving policies - Software tool to identify predatory publications developed by SPPU - Journal finder / journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer, Journal Suggester, etc.

Unit IV: PUBLICATION MISCONDUCT

L-0 + T-4

Group Discussion (2 Hrs.) : a) Subject specific ethical issues, FFP, authorship b) Conflicts of interest c) Complaints and appeals: examples and fraud from India and abroad.

Software tools (2 Hrs.): Use of plagiarism software like Turnitin, Urkund and other open source software tools.

Unit V: DATABASES AND RESEARCH METRICS

L-0 + T-7

Databases (4 Hrs): Indexing databases, Citation databases: Web of Science, Scopus, etc.

Research Metrics (3 Hrs.): Impact Factor of journal as per Journal Citations Report, SNIP, SJR, IPP, and Cite Score - Metrics: h-index, g index, i10 Index, altmetrics.

***Units 1 and 2 are to be covered via Theory mode and Units 3, 4 and 5 are to be covered via Tutorial practice mode.**

Total: 30 Hours

g. Learning Resources

i. Text Books:

1. Nicholas H. Steneck. Introduction to the Responsible Conduct of Research. Office of Research Integrity. 2007. Available at: <https://ori.hhs.gov/sites/default/files/rcrintro.pdf>.
2. P. Chaddah, (2018) Ethics in Competitive Research: Do not get scooped; do not get plagiarized, ISBN:978-9387480865.
3. Indian National Science Academy (INSA), Ethics in Science Education, Research and Governance. (2019). ISBN:978-81-939482-1-7. <http://www.insaindia.res.in/pdf/Ethics Book.pdf>.
4. Bird, A, Philosophy of Science. Routledge (2006).
5. The Student's Guide to Research Ethics By Paul Oliver Open University Press, 2003
6. Responsible Conduct of Research By Adil E. Shamoo; David B. Resnik Oxford University Press, 2003.
7. Ethics in Science Education, Research and Governance Edited by Kambadur Muralidhar, Amit Ghosh Ashok Kumar Singhvi. Indian National Science Academy, 2019. ISBN: 978-81-939482-1-7.
8. Anderson B.H., Dursaton, and Poole M.: Thesis and assignment writing, Wiley Eastern, 1997.
9. Bjorn Gustavii: How to write and illustrate scientific papers? Cambridge University Press.
10. Bordens K.S. and Abbott, B.b.: Research Design and Methods, Mc Graw Hill, 2008.
11. National Academy of Sciences, National Academy of Engineering and Institute of Medicine. (2009). On Being Scientist: A Guide to Responsible Conduct in Research: Third Edition. National Academies Press.
12. Resnik, D. B. (2011). What is ethics in research & why is it Important. National Institute of Environmental Health Sciences, 1-10. Retrieved from.
13. Graziano, A., M., and Raulin, M.,L.: Research Methods – A Process of Inquiry, Sixth Edition, Pearson, 2007.

ii. Reference Books:

1. The Ethics of Teaching and Scientific Research By Miro Todorovich; Paul Kurtz; Sidney Hook.
2. Research Ethics: A Psychological Approach By Barbara H. Stanley; Joan E. Sieber; Gary B.Melton
3. Research Methods in Applied Settings: An Integrated Approach to Design and Analysis By Jeffrey A. Gliner; George A. Morgan Lawrence Erlbaum Associates, 2000
4. Ethics and Values in Industrial-Organizational Psychology By Joel Lefkowitz Lawrence Erlbaum Associates, 2003.

iii. Online resources:

1. https://www.enago.co.kr/academy/wp-content/uploads/2018/05/Research_Ethics.pub_V2.pdf
2. <https://www.frontiersin.org/about/policies-and-publication-ethics>
3. https://www.researchgate.net/publication/340807930_RESEARCH_AND_PUBLICATION_ETHICS
4. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5508450/>
5. <https://www.iieta.org/Journals/IJSDP/Publication%20Ethics%20and%20Malpractice%20Statement>
6. <http://ignca.gov.in/short-term-certification-course/research-and-publication-ethics/>