

Course NDC-1000

"Scientific Research Skills and Ethics"

مهارات وأخلاقيات البحث العلمي

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Course Content

Module I

Research Methodology

- Meaning of scientific research?
(objectives, motivations, need for research, types of research, steps in conducting research, ROL)
- Defining the research problem, Selecting a research problem)
- Research design
- Sampling Design

Art of Scientific Writing

- Writing for excellence
- Principles of scientific writing (Writing research reports, thesis, technical paper)
- How To Improve Your Writing
- Referencing and Citation styles (Harvard, Vancouver, APA, AMA,....)
- Publishing
- Dealing with journal rejection
- Writing Research Proposals, Research grants)

How to Read and Evaluate a Scientific Paper?

- Evaluating electronic sources of information
- Evaluating print sources

Scientific Communication Basics

- Communication through the internet
- Constructing a good presentation
- How to prepare appropriate slides?
- PowerPoint presentations
- Effective oral presentation
- Maintaining interaction with audience and handling distractions
- Overcoming speaking anxiety in meetings and presentations
- Handling questions
- How to prepare and present a poster?

Module II

Research Ethics

- Definition

- **The Birth of Modern Research Ethics** (Nuremberg Trials, Helsinki Declaration, Belmont Report, Animal Welfare Act)

- Ethical principles

- Responsible stewardship
- Public trust

- Respect of living beings (Humans and Animal Subjects, Supervisors, Colleagues & Students)
- Objectivity of Research

- **Research Ethics Issues** (Guidelines and Case Studies))

- Authorship
- Copyright
- Conflicts of Interest
- Peer Reviewing
- Data Management
- Collaborative Science
- Confidentiality
- Misconduct (fabrication, falsification, plagiarism)
- Ethics in the Information Age
- Publishing Ethics (Journals, Conferences,

Module III
The Ethics of Animal Research

- Types of laboratory animals
- Uses of laboratory animals in biomedical research
- Cruelty to laboratory animals
- Pain and distress in laboratory animals
- Ethical principles of animal use in biomedical research
- Welfare of laboratory animals
- Environmental enrichment of laboratory animals
- Alternatives to laboratory animals and models
- Humane killing of laboratory animals
- Legislations of using laboratory animals

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