

IRAN UNIVERSITY OF MEDICAL SCIENCES (IUMS)
School of Advanced Technologies in Medicine

Research Methodology

Monday, 1-3 pm

COURSE INSTRUCTOR

Laila Alibiglou, PhD

COURSE MATERIALS

Required Textbooks:

Foundations of Clinical Research: Applications to Practice, 3rd Edition, by Portney LG and Watkins MP

Conducting and Reading Research in Health and Human Performance, 4th Edition, by Baumgartner TA & Hensley LD

ONLINE COURSE LINK

<https://www.skyroom.online/ch/alibiglou2007/researchmethods>

PURPOSE/COURSE OVERVIEW

This course provides an introduction to all elements of defining a research problem and designing a research project from developing a researchable question to ethical issues in research and publication. It supports PhD students in becoming critical consumers of research and provides strategies for searching literature, framework on developing and writing an appropriate research proposal, and guidelines related to research and publication ethics.

STUDENT LEARNING OUTCOMES

This course will assist students in the achievement of the following student learning outcomes:

1. Students will be able to understand a common basis for the PhD research education as well as to gain insight into the theory of science, qualitative and quantitative research methodology
2. Students will learn to select and develop a suitable and reasonable research problem and question
3. Students will know the various types and classifications of research
4. Students will be able to distinguish between a hypothesis and a theory
5. Students will be able to recognize the different types of variables in research
6. Students will be able to know when it is appropriate to apply the different methods of collecting data
7. Students will learn how to determine the characteristics of their research study sample/population
8. Students will understand different types of designs commonly used in experimental research and clinical trials
9. Students will learn about historical events leading to the development of ethical standards for research
10. Students will gain knowledge of requirements for conducting a research study with human and animal subjects
11. Students will be able to identify the general format of a published research report, understand different sections of a research report and information required within each section
12. Students will learn how to write a research proposal and/or a research article
13. Students will be able to evaluate and critique the quality of a research report/article
14. Students will learn to properly address the comments of peer reviewers on an submitted research manuscript

TEACHING METHODS AND LEARNING EXPERIENCES

The format of this class will include interactive lectures, class discussions, assignments and oral presentations. All students are expected to be active participants in all class discussions and presentations.

COURSE ASSIGNMENTS

Assignment 1: Oral presentation of research proposal topic

Assignment 2: Writing a short research proposal

Assignment 3: Oral presentation of research project proposal

ASSESSMENT

Grading for this course is on a grade basis (0-20). The course grade will be based on the accumulated score from oral and written assignments and presentations — there is no extra credit available.

Assessment	Percentage	Grading Scale
Oral presentation of research proposal topic	15%	0-3
Writing a short research proposal	50%	0-10
Oral presentation of research project proposal	25%	0-5
Participation in class discussions	10%	0-2
Total (Overall)	100%	0-20

GRADING CRITERIA

Grading for this course is on a grade basis (0-20). The determination of a grade for the class will be based upon the completion of the tasks and assignments listed above. Additional detail on the requirements for each assignment will be provided in class.

COURSE POLICIES

One of the professional responsibilities of a PhD student is to **attend every scheduled class**. Learning experiences in the curriculum are arranged sequentially, to ensure that new information, knowledge, and skills are integrated with previously introduced material.

Corrective action for unexcused absences: Attending class is expected during the entire PhD curriculum. Missing class adversely affects the learning experience and contributes to poor performance. **Two unexcused absences in a course will result in a grade of failure for that course.**

SOCIAL MEDIA

Students are expected to refrain from phone calls, text-messaging and online social networking during class sessions.

COURSE SCHEDULE

DATE	TOPIC	FACULTY	READINGS
1400/08/10	The Nature of Research, Research Problem and Research Questions	Dr. Alibiglou	Readings as assigned
1400/08/17	Specific Aims, Scientific Hypotheses, and Significance of Study	Dr. Alibiglou	Readings as assigned
1400/08/24	Writing Specific Aims and Specific Hypotheses	Dr. Alibiglou	Readings as assigned
1400/09/01	Research Design	Dr. Alibiglou	Readings as assigned
1400/09/08	An Overview of Power Analysis for Sample Size and Basic Statistics	Dr. Alibiglou	Readings as assigned

1400/09/15	Oral Presentation of Students' Research Proposal Topic (5 min each)	Dr. Alibiglou	Readings as assigned
1400/09/22	Oral Presentation of Students' Research Proposal Topic (5 min each)	Dr. Alibiglou	Readings as assigned
1400/09/29	Writing the Method Section of Scientific Research Proposal	Dr. Alibiglou	Readings as assigned
1400/10/06	Responsible Conduct of Research (RCR)	Dr. Alibiglou	Readings as assigned
1400/10/13	Research Misconduct and Responsible Authorship	Dr. Alibiglou	Readings as assigned
1400/10/20	Writing a Research Report/Article	Dr. Alibiglou	Readings as assigned
1400/10/27	Reading and Evaluating Research Reports/Articles	Dr. Alibiglou	Readings as assigned
1400/11/04	Responding to Peer Reviewer Comments on a Manuscript	Dr. Alibiglou	Readings as assigned
1400/11/11	FINAL PRESENTATION OF STUDENT RESEARCH PROPOSALS (15 minutes each) and DISCUSSION	Dr. Alibiglou	Please note: The short research proposals should be submitted by this date.
1400/11/18	FINAL PRESENTATION OF STUDENT RESEARCH PROPOSALS (15 minutes each) and DISCUSSION	Dr. Alibiglou	