



University of Salahaddin – Hawler
College of Engineering
Architectural Engineering Department

Course Book of
Research Methodology
1st semester

For
Post Graduate Students (M.Sc.)
Two hours per week
Two units

Asst. Prof. Dr. Faris Ali Mustafa

B.Sc., M.Sc., and PhD. in Architecture

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Course Description

The course was divided into two parts, the first part covering concerns and issues related to the fundamentals of research, and addressing different research methods (such as qualitative, quantitative, hybrid, etc.), the research types, research process, research problem, research questions, research objectives, hypothesis, and literature review; the second part will focus on the subjects and detailed issues regarding the research methodology in practical steps such as research design, sampling design, data collection, processing, analysing, and interpretation of data. In addition, writing ethical issues in research, research communication (academic writing, presentations...etc). The presentation skills would be systematically developed through lectures, homework assignments and term project. The students will get an opportunity not only to learn about each other's research work, but also to provide and receive feedback. The course will foster an environment of academic exchange in the multi-disciplinary field of in general and architecture in specific.

Objectives

1. To gain insights into how scientific research is conducted.
2. To help in critical review of literature and assessing the research trends, quality and extension potential of research and equip students to undertake research.
3. To learn and understand the basic statistics involved in data presentation.
4. To identify the influencing factor or determinants of research parameters.
5. To test the significance, validity and reliability of the research results.
6. To help in documentation of research results.

Expected Outcome

1. Ability to critically evaluate current research and propose possible alternate directions for further work
2. Ability to develop hypothesis and methodology for research design.
3. Ability to comprehend and deal with complex research issues in order to communicate their scientific results clearly for writing papers and theses.

Exam & Grading

Quizzes: %
Course exam: %
Course annual effort: 50%
Final exam: 50%

Syllabus

- **Research...General Introduction** week 1
- **Types of Research** week 2

- **Research Process** week 3
 Basic Overview
 Formulation of the Research Problem
 Defining the Research Problem
- **Research Problem Statement** week 4
 How to Write and Formulate Research Problem
- **Literature Review** week 5
 Literature review
 Review concepts and theories
 Objectives formulating
- **Research Hypothesis** week 6
 Hypothesis Formulation
 Sources of Hypothesis
 Characteristics of Hypothesis
 Role of Hypothesis
 Types of Hypothesis
 Test of Hypothesis
- **Research Hypothesis** week 7
- **Research Design** week 8
- **Sampling Design** week 9
- **Data Collection** week 10
 Observation Method
 Interview Method
 Questionnaires
 Case Study Method
- **Processing and Analysis of Data** week 11
 Processing Operations
 Statistics in Research
 Descriptive Statistics
 Inferential Statistics
 Elements / Types of Analysis
 Interpretation of Data
- **Writing** week 12,13
 Article
 Essay
 Research Paper
 Research Project

Legislation Drafting
Judgment Writing
Thesis
Dissertation
Book
Reviews - Book Review; Case Review

- Criteria of Good Research week 14
Research Ethics
Validity and Reliability
Citation Rules

- Citation Methods week 15
Foot Note
Text Note
End Note
Bibliography & Referencing

Related References

- Groat, L. N., Wang, D. (2013). *Architectural Research Methods*, 2nd Ed., John Wiley & Sons, Inc., Hoboken, New Jersey.
- Fellows R. and Liu A. (2008), *Research Methods for Construction*, 3rd Ed., Wiley-Blackwell, Oxford, UK.
- Leedy, Paul D. & Ormrod, Jeanne E., (2010). *Practical Research: Planning and Design*, 9th Ed. Boston: Pearson Education, Inc.
- Dawson, Catherine, 2002, *Practical Research Methods*, New Delhi, UBS Publishers' Distributors.
- Kothari, C.R.,1985, *Research Methodology: Methods and Techniques*, New Delhi,Wiley Eastern Limited.
- Kumar, Ranjit, 2005, *Research Methodology-A Step-by-Step Guide for Beginners*, 2nd Ed., Singapore, Pearson Education.