

**University of Jordan**  
**Faculty of Nursing**  
**Research Methodology in Nursing (0743721); 2 CR**  
**2013/2014 1st Semester**

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**Course Description**

This course provides an overview of research methods, including various research designs appropriate for studying health care phenomena. The course will focus on utilizing nursing research in the development of nursing knowledge. The student will be introduced to quantitative and qualitative methods of nursing research and will have the chance to develop a research proposal in his/her own area of specialty.

**Aims of the course**

1. The course aims at introducing the students to the advanced research concepts and process in nursing and the health profession. The steps of the research process will be discussed and reviewed with special emphasis in building the nursing students abilities in utilizing the results of nursing research in developing the area of education, practice, and building the body of nursing knowledge.
2. This course provides a foundation for reading, interpreting, and understanding survey research in nursing. Students will be given adequate training to develop a research proposal, gain an appreciation for the scientific method, and the principles of research design as applied to health problem.
3. Health surveys provide an important source of information about health problems, including lifestyle-related illnesses and access to care for underprivileged populations. Students will experience the logical rigor required in data collection, analysis, and reporting. Each student in this class must plan and design a research proposal.
4. Students will become familiar with large scale health surveys, such as the Health Interview Survey. Students will learn to utilize available sources of survey data. They will also learn cost-effective means for conducting health survey.

**Course Objectives**

- Upon successful completion of this course, students will be able to:
- ❖ Demonstrate knowledge of the historical evolution and future direction in nursing research
  - ❖ Understand the components of the research process including problem definition, data collection, data analysis and communication of findings.
  - ❖ Describe the qualitative and quantitative approaches to research

- ❖ Use the principles of conducting a research study in order to analyze and evaluate reported nursing research studies, with emphasis on the role of research in the development of nursing knowledge and the improvement of nursing practice.
- ❖ Understand the principles and methods of research proposal development.
- ❖ Analyze and synthesize nursing research articles for applicability of findings to clinical practice.
- ❖ Analyze ethical issues involved in nursing research.

### Intended Learning Outcomes (ILOs)

Successful completion of the course should lead to the following learning outcomes:

- ***Knowledge and Understanding***
  - Define basic research terminology.
  - Identify sources of nursing knowledge.
  - Describe scientific research.
  - Discuss four major goals for conducting research.
  - Recall some of the historic events in the development of nursing research.
  - Determine priority areas for nursing research.
  - Discuss some of the unethical studies that have been documented in the literature.
  - Identify the ethical considerations in scientific research.
  - Identify the elements of informed consent.
  - Identify sources of nursing research problem.
  - List the major steps in the research process.
  - Explain the major steps in the research process.
  - Analyze central features of each research design.
  - Compare and contrast methods appropriate for use in quantitative and qualitative research.
  - Critique published quantitative and qualitative research.
- ***Cognitive and Intellectual Skills***
  - Compare two broad purposes for conducting research.
  - Compare qualitative and quantitative research.
  - Trace the development of ethical codes and guidelines.
  - Appreciate the role of institutional review boards in conducting nursing research.
  - Analyze the steps of the research process both quantitative and qualitative research
- ***Subject Specific Skills***
  - Demonstrate knowledge of the historical evolution and future direction in nursing research.
  - Recognize the importance of nursing research.
  - Write a research in nursing utilizing the major steps of the research process.
- ***Transferable Skills***
  - Apply the major steps of the research process to conduct a research in nursing.

- Critique research reports according to the major steps of the scientific research.
- Perform the role of master prepared nurse in conducting research.
- Recognize unethical nursing research.
- Act as a patient advocate during research investigation.
- Critique the ethical aspects of a research study.

### Required Readings

Polit, D. & Beck, C. (2012). *Nursing Research: Generating and Assessing Evidence for Nursing Practice* (9<sup>th</sup> Edition). Lippincott Williams and Wilkins. Philadelphia.

Polit, D.F., & Beck, C. T. (2010). *Nursing research: Principles and methods* (8<sup>th</sup> ed.). Philadelphia: Lippincott.

✚ *Publication manual of the American Psychological Association* (6<sup>th</sup> Ed.). (2010). Washington, DC.

### Suggested Readings

Burns, N., & Grove, S. (2005). *Practice of Nursing Research Conduct, Critique and Utilization* (4<sup>th</sup> Ed.). Philadelphia: W. B. Saunders.

Access the periodicals online within the Campus net: <http://e-library.ju.edu.jo>

Links for writing: <http://www.nvctc.commmnet.edu/writcent.htm>

### Topics:

#### **1- Introduction to Nursing Research**

Objectives: Upon completion of this session, the student will be able to:

- Understand the course requirements
- Recognize the importance of research to the profession of nursing
- Trace the historical development of nursing research
- Discuss the future of nursing research
- Articulate the steps in the research process

#### **2- Selecting and Defining a Research Problem**

Objectives: Upon completion of this session, the student will be able to:

- Understand the purpose statement in research
- Recognize potential sources for research problems
- Recognize a researchable problem

- Begin to develop research problem

Required Activities:

1. Bring to class a preliminary idea from which to organize a problem statement related to your research.
2. Bring your problem statement to class.

### **3- Hypothesis, Questions, and Objectives**

Objectives: Upon completion of this session, the student will be able to:

- Understand the process of selecting a question, a hypothesis, and an objective to direct a study
- Define variables differentiating demographic, dependent, independent, extraneous and confounding variables
- Understand process of defining significant terms, both operations and conceptual

### **4- Literature Review**

Objectives: Upon completion of this session, the student will be able to:

- Understand the importance of the review of literature
- Identify appropriate sources for own literature search
- Understand rationale for identifying parameters of the literature search

Required Activities:

1. Be prepared to discuss directions in which to go for your literature search.
2. Be prepared to discuss problem statement and literature review from the articles listed in the syllabus and or emailed to you.

### **5- Developing a conceptual context**

Objectives: Upon completion of this session, the student will be able to:

- Define the essential terms
- Identify the steps of constructing a study design
- Critique frameworks

## **6- Research Designs**

Objectives: Upon completion of this session, the student will be able to:

- Differentiate experimental and non-experimental research
- Differentiate between quantitative and qualitative research
- Discuss advantages and disadvantages of a variety of research designs
- Apply the techniques of research control to extraneous variables
- Differentiate internal and external validity
- Select a research design for use in own research proposal

## **7- Sampling Designs**

Objectives: Upon completion of this session, the student will be able to:

- Define terminology frequently used in the discussion of subject selection
- Assess the adequacy of a sampling procedure used in a selected research study
- Differentiate probability and non-probability sampling methods
- Select a sampling method most appropriate to his/her own research study
- Recognize the impact of sampling methodology on the interpretability and generalizability of the research study

## **8- Principles of Measurement and enhancing rigor in Research**

Objectives: Upon completion of this session, the student will be able to:

- Define terms used in assessing measuring tools: errors of measurement, reliability and validity
- Discuss factors which contribute to errors of measurement
- Discuss reliability of measuring tool in terms of stability, internal consistency, and equivalence
- Discuss validity, comparing and contrasting different types of validity
- Describe the relationship between reliability and validity
- Recognize the existence of a number of other criteria by which measuring tools can be assessed

## **9- Data Collection**

Objectives: Upon completion of this session, the student will be able to:

- Discuss a variety of data collection tools available for use in nursing research
- Recognize the advantages and disadvantages of each of a variety of data collection tools
- Select an appropriate tool for use in own research study

## **10- Qualitative Research**

Objectives: Upon completion of this session, the student will be able to:

1. Discuss the inductive-interpretive paradigm
2. Discuss the strength, weaknesses of the qualitative paradigm
3. Discuss significance, forms, and clarity of qualitative research questions. Recognize importance of qualitative research in nursing knowledge development
4. Discriminate between various types of qualitative research
5. Identify components of data collection in a qualitative study
6. Begin to understand issues of trustworthiness in qualitative studies

### 11 - Human Subjects/Informed Consent

Objectives: Upon completion of this session, the student will be able to:

- Define informed consent
- Discuss the key elements of a human subjects consent form for a research study
- Discuss ethical dilemma related to procedural consideration and human rights in the conduct of scientific study
- Enumerate "at risk" or "vulnerable" populations which may be targeted for research study

Links for ethical principles: <http://www.apa.org/ethics/code2002.html>

### 12- Statistics & Data analysis (2 sessions)

- Identify the statistical methods used in data analysis
- Introduced to the software that used in statistical analysis (SPSS)
- Link data analysis to the different steps in research

### 13- Presentation of the projects

#### Assignments, Evaluation, and Grading Scale

The student's course grade will be primarily determined by a combination of midterm examination, class participation and attendance, critique logs, final research paper and a timed, in-school, closed book, essay style final examination. The final examination will incorporate principles and materials from the required readings and from classroom discussions and lectures.

| Requirement  | Due date             | % of final grade<br>(Must sum to 100%) |
|--------------|----------------------|--|
| Midterm Exam | Week 6 <sup>th</sup> | 20%                                    |

|                                      |                        |     |
|--------------------------------------|------------------------|-----|
| Critique Paper                       | Week 13                | 10% |
| Class participation & attendance     | All through the Course | 10% |
| Final proposal report & presentation |                        | 20% |
| Final Exam                           | To be Announced        | 40% |

### Instructions for Assignments

**Critique An Article.** Each student will prepare a 3 page analysis/discussion of his/her designated article. The following format will guide your critique of the assigned quantitative research articles.

**Article Citation: Critique the problem statement, purpose/aims, background and significance, theoretical framework, the research questions or hypotheses, and the design of the study.**

1. **Problem statement, Purpose/aims:** Is the problem to be studied clearly stated? Are the purpose and aims of the study clearly stated? Restate the purpose. Compare your version with the authors.
2. **Background and significance:** Is the review of previous research appropriate and sufficient? Have the reported studies been critically reviewed? Have relevant studies been cited and discussed? What is the gap in knowledge? Is the significance of the problem being addressed and of the study clearly supported by a logical and scientifically sound explanation?
3. **Theoretical framework:** Identify the conceptual or theoretical framework for the study. Is it clear that the study is guided by a theory or theories? Are the variables being measured congruent with the theoretical framework? Diagram the theoretical framework used in the study. Can you suggest another theory or a theory that would support this study?
4. **Research question(s) or hypotheses.** Are the research questions or hypotheses clear and appropriate in terms of current knowledge and the chosen design? Why or why not? How would you change them? Critique the author=s choice of variables studied. Is the choice of variables logical and innovative? Are there other variables that you would add for the proposed theory?
5. **Design:** Identify the general classification of the design: descriptive, survey, observational, quasi-experimental or experimental, etc. Name the design precisely. What are the strengths and weaknesses of the design from a classical perspective? Has the design fully supported the collection of data? Has the design supported the analysis of data to answer the research questions or hypotheses? Examine how the elements of purpose/aims, research questions/hypotheses, theoretical framework/variables/measures interface; explain congruence or lack of congruence. If you are critiquing a quasi-experimental or experimental study, address each of the elements of internal validity (testing, history, instrumentation, etc); has the researcher controlled for these threats to internal validity? How would you redesign the study to better control for threats to internal validity? Describe an alternate design. Compare the strengths and weakness of the alternative design to the one used by the authors.
6. Critique the research methods used.
  - a. **Sample:** Is the population from which the sample is drawn appropriate to answer the research questions? Identify the sampling method used. Does sample selection introduce bias? What are the sources of error introduced by the selection of subjects? Is the size of the sample consistent with the type

- of research questions asked? Consistent with the degree of precision necessary? Consistent with sampling procedures and the demands of statistical analysis? How was attrition prevented? Are threats to internal and external validity identified and controlled? Was IRB/obtaining informed consent addressed?
- b. **Instrumentation:** Identify the measures used. Discuss their reliability and validity. What is the basis for reliability and validity in the chosen population? Name at least two other measures that could have been used. Considering design and sample, are the instruments that you have suggested or cited more or less useful?
  - c. **Data Collection Protocol:** Was the method clearly described? How were data collected? Was the setting well defined? Are environmental influences taken into consideration? Is enough information available to replicate the study? How were the data recorded? Were procedures standardized? How was the ordering of scales or subject error or investigator bias accounted for? Does the data collection protocol minimize error? Does it uphold confidentiality? How were data managed (e.g., coded, entered)?
  - d. **Data Analysis:** Is the analysis appropriate for the design, sample, hypotheses, questions, level of data? Why or why not? Was alpha set a priori? Suggest at least one other method of analysis.
7. **Critique the results and discussion sections of the paper:**
- a. **Results:** Are the results clearly described in the abstract, body of the paper, and tables/figures? What would you change? Are the results congruent with the stated theoretical frame? Are the research questions or hypotheses answered/confirmed or rejected. If any results are statistically significant but weak, is this clearly articulated? Are the tables well organized and easy to read/understand?
  - b. **Discussion:** Are the results accurately applied to the discussion? Are the conclusions based on the results? Does the author relate the findings to the purpose, research questions/hypotheses, theoretical framework, and current state of knowledge of the phenomena being studied? Are the conclusions appropriate for the reported findings? How does the author treat issues of external validity or generalizability, i.e. are the limitations of sample, setting or time at which the research occurred accounted for? Explain your answer. How could the study have been designed to increase external validity? Are the limitations of the study clearly defined? Are specific implications discussed? Are these reasonable or logical in light of the limitations of the findings? Consider what implications may not be stated.

**Midterm:** In-class exam based on class assignments/readings/discussions.

### The Research Proposal.

**Students prepare a proposal outlining the research plan (8-10 pages of text). This proposal needs to be approved by the instructor. Usually, the proposal consists of the first three chapters or sections of the report, includes references and appendices, and has the following elements:**



- ❖ **Introduction.** The purpose of the research and statement of the problem are introduced, with background information substantiating the need for the study. It is essential to state why the problem is important to nursing. Terms are defined conceptually and operationally.
- ❖ **Review of the Literature.** The literature review is related to the problem area. Relevant literatures from nursing and related fields are reviewed to show awareness of knowledge in the area, and to demonstrate that the researcher has considered a range of possibilities for investigating the problem. A theoretical framework is identified and integrated into the study. The description of the study should show clearly how the study would extend previous findings. The theoretical rationale for the hypotheses or research questions is made explicit.
- ❖ **Methods:**
  - **Sample.** Describe the study population, sample selection procedure, size and rationale, as well as any limitations. Adequate scientific reasons for choosing the sample are stated.
  - **Setting.** Describe where the study will be conducted.
  - **Design.** Describe the research design and rationale for selection. Identify the variables in your study including steps taken to control for extraneous variables. Present the nature of any treatment to be administered, if any.
  - **Instruments.** Describe the research instruments for collecting data with a view to their appropriateness to the research being conducted. Present information regarding their validity and reliability.
  - **Procedure.** Describe in detail how you will conduct the study, protect the rights of participants, and obtain informed consent. Suggest a tentative schedule for the main steps of the investigation.
  - **Plan for Data Analysis.** Describe the means by which the data will be analyzed and/or interpreted.
  - **Limitations:** At this point, you don't have any results to discuss, so just include a discussion of the study limitations (both methodological and theoretical), the plan for communications of the findings your implications for nursing for now.
  - **References.** List references cited in the text in APA format.
  - **Appendices.** Copies of questionnaires, interview guides, scoring instructions, letters of request to agencies for participation, consent form, instructions to be provided to subjects are included.

### **Format**

1. **Manuscript Preparation.** The manuscript shall be typewritten double-spaced with 1" margins on all four sides and 8-10 pages. The pages are to be numbered consecutively, beginning with the first page of text. The page number should be centred in the 1-inch margin at the bottom of each page. The font for the type should be no larger than 12 point, no smaller than 10 point, a Helvetica type font is recommended.
2. **Text Requirements.** The cover page should contain the title and author's names. The main text should begin on a separate page and be not less than 8 double-spaced pages, and no more than 10 double-spaced pages, excluding bibliographic references.

3. **Illustrations.** Each table, graph, figure, etc., to be part of the paper should be identified by an Arabic numeral, a title, and contain a legend describing abbreviations or any symbols used. Every figure and table must be cited in order of appearance. A concise heading describing the table's content should be supplied as a title. Tables should be self-explanatory and should supplement not duplicate text. Type all footnotes directly below the table and define abbreviations. Place explanatory matter in the footnotes, not in the heading. If the table, in full or in part, has been previously published, a footnote must give full credit to the original source.
4. **References.** Students are responsible for the accuracy and completeness of references. Manuscripts in preparation, personal communications, and other unpublished information should not be cited in the reference list but may be mentioned in the text in parentheses, with, when feasible, a note of approval from the source of the statement appended to the manuscript.
5. **Abbreviations, Symbols.** Use only standard abbreviations or acronyms. The full term for which an abbreviation or acronym stands should precede its first use in the text unless the abbreviation is a standard unit of measurement. Place the abbreviation or acronym in parentheses after the first mention of the full term.

### Self-Evaluation of Class Participation

Active participation in class discussion is an expectation of all students in this course. Active participation includes\*:

- Preparing for discussion by being familiar with the readings assigned.
- Consistently making relevant contributions to the flow of ideas in weekly discussion sessions.
- Demonstrating openness to new ideas and perspectives
- Demonstrating respect for the contribution of others
- Engaging in constructive analysis of the ideas of colleagues
- Giving and receiving feedback to colleagues in such a way as to further the development of ideas.
- criticize a point thoughtfully; ask about the assumptions and logic