



**UNIVERSITY OF ALBERTA
COLLABORATIVE BACCALAUREATE
NURSING PROGRAM**

Grande Prairie Regional College
Grant MacEwan College
Keyano College
Red Deer College
University of Alberta

**NURSING 4960
Nursing Research and Statistics
Course Outline
Fall 2003/Winter 2004**

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NURSING 4960 Nursing Research and Statistics 6(0-6-0.5).

Introduction to the process of research through a comparative analysis of selected studies exemplifying different theoretical, methodological and analytical approaches. Emphasis will be on the communicability of research, the needs of the research consumer, and the development of skills of critical appraisal. Also included are introduction to descriptive and inferential statistics and the application of statistical methods to nursing problems.

***Note: In lieu of taking NS 4960, NS 3010 and a 3 credit UT statistics course may be used but credit cannot be granted to NS 4960 if credit is obtained for NS 3010 and/or the statistics course.**

Course Description:

The course introduces students to the process of nursing research through critical appraisals of selected quantitative and qualitative studies. Emphasis will be on understanding the research process and in knowing how to critically read, analyze, and begin to apply the knowledge gained from research in practice. The focus of this course will be on the planning and implementation phases of the research process which includes: the research problem and purpose, the literature review, theoretical /conceptual frameworks, variables and hypotheses if applicable, research questions, ethical considerations, research designs, study populations, data collection and analysis, and the interpretation of findings. Additionally, students will also examine trends and issues in developing evidence based practice for the nursing profession.

The course also introduces students to the descriptive and inferential statistical concepts required to understand and critique quantitative research designs.

Course Objectives:

At the completion of this course, the student will:

1. Discuss the types, advantages, and limitations of data collection methods used in both quantitative and qualitative nursing research methods.
2. Discuss the criteria for determining the validity and reliability of measurement tools.
3. Discuss the criteria for determining confirmability of findings in a qualitative study.
4. Discuss appropriate data collection methods for various qualitative and quantitative designs.
5. Differentiate data analysis methods for both quantitative and qualitative research.
6. Identify the purpose and appropriateness of commonly used inferential statistics.
7. Distinguish between type I and type II errors and their effects on findings.
8. Differentiate between the meanings of statistical significance and clinical significance.

9. Apply critiquing criteria for an analysis of a published research report.
10. Develop and use a systematic approach for reading and critical appraisal of multiple published research reports on a selected topic.
11. Determine the applicability of knowledge gained from research for evidence-based practice.
12. Discuss the role of a nurse in promoting research activities and using knowledge from research in the practice settings.
13. Discuss issues including barriers and facilitating factors influencing the advancement of nursing research and evidence-based practice.

Course Hours:

Fall 2003: Two hours of structured seminar time for nursing research approaches, two hours of structured seminar time for statistics content, and two hours of independent small group work will be scheduled each week over a seven week period. There will also be 6 hours of laboratory time scheduled during the seven weeks for application of selected research and statistical concepts.

Winter 2004: Two hours of structured seminar time for nursing research approaches, two hours of structured seminar time for statistics content, and two hours of independent small group work will be scheduled each week over a seven week period. There will also be 6 hours of laboratory time scheduled during the seven weeks for application of selected research and statistical concepts.

Co-requisite: Nursing 3900

Withdraw Deadline: Feb 13, 2004

Grading Criteria for Nursing Courses:

Alpha Grade	4 Point Equivalent	Descriptor
A+	4.0	Excellent
A	4.0	Excellent
A-	3.7	First Class Standing*
B+	3.3	First Class Standing*
B	3.0	Good
B-	2.7	Good
C+	2.3	Satisfactory
C	2.0	Satisfactory
C-	1.7	Satisfactory

Passing Grades in Nursing Courses

Failing Grades in Nursing Courses

Alpha Grade	4 Point Equivalent	Descriptor
D+	1.3	Poor/Minimal Pass
D	1.0	Poor/Minimal Pass
F	0.0	Failure

Students must obtain a final grade of “C” in NS 4960 in order to receive transfer credit for NURS 496 to the University of Alberta.

* Very Good/Above Average is an alternate descriptor for First Class Standing.

Texts:

Gillis, A., and Jackson, W. (2002). *Research for nurses: Methods and interpretation*. Philadelphia, PA: F.A. Davis

Mayan, M.J. (2001). *An introduction to qualitative methods: A training module for students and professionals*. Edmonton, AB: International Institute for Qualitative Methodology.

Polit, D.F. (1996). *Data analysis & statistics for nursing research*. Stamford, CT: Appleton & Lange.

Whenever possible Nursing 4960 utilizes research studies pertaining to the scenarios in NS 3900 and 3940. However, it may be necessary to use additional studies to exemplify certain research concepts and principles.

Attendance at Structured Seminars:

The purpose of the seminars is to highlight primary concepts of the research process and to develop the student's ability to understand and critique published research through discussion and critique of essential concepts related to nursing research and statistics. Additionally, students will have the opportunity to discuss group critiques of selected articles to assist in understanding the concepts.

Small Group Work:

The purpose of this activity is to provide students with an opportunity to critique selected aspects of a published research study using the critiquing criteria. **Students will be assigned to groups of three or four for independent, small group work.** Each week, beginning in Week #2, a research report, selected by the instructor, will be reviewed. It is anticipated it will be relevant to the scenarios being covered. In their small groups, students are expected to read each assigned research report and begin to critique it, using the outlines in the course texts, prior to discussing the report in Seminar.

Structured Seminar Topics Fall 2003

Week/Dates	Nursing Research	Statistics
1	Overview of nursing research; review of Nurses' role in nursing research; methods of inquiry; frameworks for critique	Introduction to data analysis, variables, etc.
2.	The research question, problem, and the literature review.	Univariate statistics: Tabulating and displaying data
3	Quantitative research designs: descriptive, correlational, quasi-experimental, experimental	Univariate statistics: Central Tendency and variability
4	Qualitative research designs: ethnography, grounded theory, phenomenology, historical, action research	Bivariate Description
5	Population and Sampling	Statistical Inference
6	Beginning to Critique Research Reports	Testing the difference between two means: the two sample <i>t</i> -Test.
7.	Critiquing Research Reports Take Home Examination Handed Out Due October 29 , 2003 at 0900 hrs.	Exam: Date, Time, Format TBA

LABS for Fall 2003: (6.0 hrs)

The focus of these labs is on 1) understanding the purpose, use, and interpretation of descriptive statistics (*frequency distributions, measures of central tendency and variability, standard scores, levels of measurement, reading descriptive tables and graphs*) for quantitative nursing research; and 2) examining appropriate research phenomena, questions, and populations to study using quantitative research methods. *Also included are levels of measurement and reading descriptive tables and graphs.* Two nursing research articles, chosen by the instructors, will be used for the interpretations.

EVALUATION for Fall 2003:**1. Critique of a Research Report: Value: 10% of Final Grade**

An article discussing a quantitative research study, from a refereed source, will be provided by the instructor. All components of the report are to be examined, however, emphasis is to be placed on areas covered to date in seminars. The criteria outlined in the Gillis and Jackson (2002) text and utilized in seminars and small group sessions will be used. APA and scholarly writing formats are to be used. The length of this paper is not to exceed 1200 words.

Due: October 20, 2003 at 1600 hours.

2. Weekly Statistics Assignments: Value: 10% of Final Grade

These assignments, in a worksheet format, will be completed weekly, marked within 48 hours and returned.

3. Mid-Term Examination: Value: 15% of Final Grade

Part I: Statistical Concepts:

Part II: Nursing Research Concepts:

A Take Home Examination will be handed out at the end of class on Oct 22, 2003. It will be due **October 29, 2003 at 0900 hours.**

**Structured Seminar Topics
Winter 2004**

Week/Dates	Nursing Research	Statistics
1.	Ethics in research	Application of Two Sample <i>t</i> -Tests
2.	Rigor in Quantitative Research Designs Sampling, and Data Collection Reliability and Validity of Instruments Levels of Measurements Applicability	Analysis of Variance, Covariance, Multivariate ANOVA
3.	Rigor in Qualitative Research Design Data Collection, eg. Interviewer as Instrument Methods of data collection Trustworthiness	Chi -Square
4.	Critique of Results, Interpretation of Qualitative findings	Correlations and Simple Regressions
5.	Critique of Results, Interpretation of Quantitative findings	Multiple Regression Analysis
6.	Interpretation of Epidemiological studies.	Factor Analysis
7.	Issues in nursing research (funding, barriers, research utilization), Review Course Evaluation, Hand out Take Home Examination	Final Examination

Labs for Winter 2004 (6.0 hr)

Nursing Research Lab: Qualitative Analysis (3.0)

1. Students will review a transcript of a tape recorded interview, provided by the instructor.
2. Students will perform a content analysis on data in the transcript provided and begin to thematically analyze it.

Statistics Labs: Inferential Statistics (3.0)

The focus is understanding the purpose, use, and interpretation of inferential statistics (*t*-Tests, ANOV, Chi Square, Regression Analysis, Factor Analysis) for quantitative nursing research;

EVALUATION:**1. Critique of a Research Report: Value: 15% of Final Grade**

An article discussing a qualitative research study, from a refereed source, will be provided by the instructor. All components of the report are to be critiqued. The criteria outlined in the Gillis and Jackson (2002) and Mayan (2001) texts and utilized in seminars and small group sessions will be used. APA and scholarly writing formats are to be used. The length of this paper is not to exceed 1500 words.

Due: Feb 13, 2004 at 1600 hours.

2. Weekly Statistics Assignments: Value: 10% of Final Grade.

These assignments, in a worksheet format, will be completed weekly, marked within 48 hours and returned

3. Final Examination: Value: 40% of Final Grade.

A two part final examination will be written. Part I will test all statistical concepts studied throughout the course. Part II will evaluate learning related to nursing research concepts.

PLEASE NOTE: The student must pass the statistics portion of the course with a minimum Grade of "C-" to receive credit for this course.

ASSIGNMENT POLICY:

All assignments are to be passed in at the time and place they are due. Extensions on assignments may be granted and must be negotiated with the instructor prior to the due date and with a date specified for late submissions.

A penalty of one Grade for each working day an assignment is submitted after the due date will be deducted from the final mark. For example, a paper scored at a B+ would receive an adjusted grade of B if handed in one day late. Late assignments are due by 1600 hrs and must be verified (stamped with date and time) by nursing office personnel.

NOTE: This policy is under review and may change. It so a revised copy will be distributed at the first class.