



**UNIVERSITY OF ALBERTA
COLLABORATIVE BACCALAUREATE
NURSING PROGRAM**

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

**NURSING 3690
Evidence-Based Research
COURSE OUTLINE
2008-2009
Sept/Oct/Jan/Feb
Group A**

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Approved: May 2008

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Nursing 3690 Course Outline

NOTE: Foundational research concepts (approximately 8 hours) offered in Years One and Two are important prerequisites to NURS 3690 (*see the Concept Map for Research & Statistics for the foundational research concepts to be included in the First and Second Years*). NURS 3690 is integrated with the NS 3900 and NS 3940 Learning Packages.

CALENDAR STATEMENT:

NURS 3690 *6 (both terms 0-6-0.5 in 14 weeks).

Nursing Research & Statistics I (Fall Term)

Introduction to the process of research through critical appraisals of selected quantitative and qualitative studies. Emphasis is on understanding the research process and knowing how to critically read, analyze, and begin to apply the knowledge gained from research in practice. Focus is on the planning phase of the research process and descriptive statistics. Corequisite: NURS 3900.

Nursing Research & Statistics II (Winter Term)

Students continue to develop their skills to critically read, analyze and begin to use knowledge gained from research in their practice, building on the knowledge from fall term. This course focuses on understanding the implementation phase of research and inferential statistics. Students also examine trends and issues in developing evidence-based practice for the profession of nursing. Corequisite: NURS 3940.

Note: (NS 3690), and (NS 3010 and STAT [*3]) may not both be taken for credit.

COURSE HOURS: 3 hours/week research. 3 hours/week statistics. Two, three hour labs in 7 weeks.

COURSE DESCRIPTION:

Fall Term:

Introduction to the process of 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 the planning phase of the research process which includes: research problem and purpose, literature review, theoretical/conceptual frameworks, variables, research questions and hypotheses, ethics of research, research designs, and population and samples. Also included are descriptive statistics.

Winter Term:

Students will continue to develop their skills to critically read, analyze and begin to use knowledge gained from research in their practice. The focus of this course is on the implementing phase (data collection, data analysis, interpretation of findings). Students will also examine trends and issues in developing evidenced-based practice for the profession of nursing. Also included in this course are inferential statistics.

REQUIRED TEXTS:

Loiselle, C. & Profetto-McGrath, J. (2007). Polit and Beck. *Canadian essentials of nursing research*. (2nd ed.). Philadelphia: Lippincott.

COURSE OBJECTIVES:**Fall Term:**

1. Describe the purpose and importance of research in nursing.
2. Describe how theory, practice and research are related.
3. Identify a question from nursing practice that can be answered by research.
4. Describe the role of nurses in research.
5. Apply critiquing criteria for the critical analysis of the following sections of a research report: research problem and purpose, literature review, theoretical/conceptual framework, variables, research questions and hypotheses, research design, ethical components, population, sample, and sampling procedures.
6. Compare the major characteristics, strengths and limitations of quantitative and qualitative research.
7. Explain the meaning of internal and external validity of research.
8. Develop a systematic approach for reading and critical analysis of selected components of published research.
9. Describe the four levels of measurement.
10. State the purpose of descriptive statistics.
11. Critically analyze the descriptive statistics used in published reports.

Winter Term:

1. Discuss the types, advantages, and limitations of data collection methods used in both quantitative and qualitative nursing research methods.
2. Identify 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. Identify 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 of 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 complete research report.
10. Develop a systematic approach for reading and critical appraisal of multiple published research reports in their entirety.
11. Determine the applicability of knowledge gained from research for evidence-based practice.
12. Identify 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

LEARNING ACTIVITIES:

Students will participate in a number of activities to assist in meeting the objectives of the course:

1. **Class Attendance**

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

2. **Small Group Work (Research)**

The purpose of this activity is to provide students with an opportunity each week to critique selected aspects of a published research study using the critiquing criteria. Each week the instructor(s) will select a research report related to Nursing 3900 or Nursing 3940. It is anticipated that the research reports students are to critique will be relevant to the scenarios being covered in the learning packages. Students are expected to read each assigned research report and answer the critiquing questions included in the course outline **prior to attending the class**. *For example*, prior to the class on the planning phase of the research process, students will be expected to critique the research problem /questions, literature review, theoretical framework and hypothesis in the assigned article.

Students are encouraged to work in pairs or small groups to complete their critique (answer the criteria questions) of the aspects of the assigned study for discussion in the weekly FRS. During class, students will be asked to present their evaluation of the selected aspects of the research report. Opportunities for discussion, debate and consensus will be provided in both this course and the nursing tutorial. Critical thinking should be emphasized throughout the process.

3. **Appraising Findings from Multiple Studies**

The importance of appraising findings from multiple studies related to a nursing practice issue for guiding practice will be the focus of this activity. In addition to the article selected in N3690 for critique, students are expected to brainstorm research questions in each NS 3900 and NS 3940.

Important Policies

Important Dates:

Information on the last day to change registrations dropping full-year courses is available on the GPRC website.

Nursing Program Policies

Please refer to the *Grande Prairie Regional College* calendar and the *University of Alberta Collaborative Baccalaureate Nursing Program with Grande Prairie Regional College Student Handbook* 2008-2009 for specific nursing program policies that may pertain to this course.

Assignment Policy:

Research assignments are due at the date and time they are due in the front office and must be verified (stamped with date and time) by Nursing Office Personnel. 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. Extensions will not be granted the day the assignment is due.

A penalty of one letter grade per day will be deducted from the final grade of a late assignment. For example, a paper graded at a C would receive an adjusted grade of C- if handed in one day late.

It is the responsibility of the student to ensure electronically submitted papers and assignments are delivered and retrievable to the instructor (i.e. emailing assignments). If the instructor is unable to open documents or if documents are sent in error via electronically, the assignment will be considered late and the student will have one letter grade deducted from the final grade. It is highly recommended that students ensure their assignments have been retrieved by the tutor prior to the due date and time.

In the statistics portion of the course, assignments will be handed out at the beginning of class and handed into the instructor at the end of that same class.

Plagiarism and Cheating:

Please refer to your rights and responsibilities in the Grande Prairie Regional College 2008/2009 Calendar.

We expect honesty from our students. This demands that the contribution of others be acknowledged (GPRC Calendar, 2008/2009). Penalties will be given according to the degree of the plagiarism or cheating. If you are unsure whether an action is plagiarism or not, please consult your tutor. Cheating refers to dishonest conduct such as speaking in an exam, bringing written material not authorized by the tutor, tampering with grades, or consciously aiding another student to cheat).

Grading System

A grade will be assigned for each assignment using grading criteria and then based on the grade descriptors (excellent, good, satisfactory, poor). Rationale will be given as to the assigned grade.

| <i>Alpha 4-point equivalence</i> | | <i>Descriptor</i> |
|--------------------------------------|-----|-------------------------|
| A+ | 4.0 | <i>Excellent</i> |
| A | 4.0 | |
| A- | 3.7 | First Class Standing |
| B+ | 3.3 | |
| B | 3.0 | Good |
| B- | 2.7 | |
| C+ | 2.3 | Satisfactory |
| C | 2.0 | |
| C- | 1.7 | |

These are considered passing grades in Nursing courses

| | | |
|----|-----|--------------|
| D+ | 1.3 | Poor |
| D | 1.0 | Minimal Pass |
| F | 0.0 | Failure |

These are NOT considered passing grades in Nursing courses.

Students **may** receive a grade of D or D+ in an assignment or component of a course, but must have an overall grade of C- to achieve a passing grade in a nursing course.

****Note: Refer to the 2008-2009 GPRC calendar for further details regarding the grading policy and p. 119 regarding Progression Criteria in the Bachelor of Science in Nursing program.**

PLEASE NOTE: The student must pass each of the statistics portion and the nursing research methods portion of the course with a minimum Grade of “C-” to receive credit for this course. If a student fails either of the stats or research portion, they will receive an “F” in NS 3690.

Seminar Topics (may be subject to change)
Fall 2008

| Dates | Nursing Research | Statistics |
|--|---|---|
| September 4-5 | Orientation to course | Orientation |
| September 8-12 Jennifer Hardy | Overview of nursing research; review of Nurses' role in research; methods of inquiry; frameworks for critique of research reports and ethical principles. Chapters 1, 2, 4, 5 | What is Statistics? Random Samples Introduction to Experimental Design |
| September 15-19 Katherine Wilde | The research question, problem, hypothesis, theoretical framework, and literature review. Chapters 6-8 | Bar Graphs, Circle Graphs, and Time-Series Graphs Frequency Distributions, Histograms, and Related Topics Stem and Leaf Displays |
| September 22-26 Katherine Wilde cont... | The research question, problem, theoretical framework, and literature review. Chapter 6-8 | Measures of Central Tendency: Mode, Median, and Mean Measures of Variation Mean and Standard Deviation of Grouped Data |
| Sept 29 – Oct 3 Nursing Organizations | Quantitative and Qualitative research designs Chapter 9 | What is Probability? Some Probability Rules—Compound Events Trees and Counting Techniques |
| October 6-10 Thomas | Qualitative and Qualitative research designs Chapter 10 | Introduction to Random Variables and Probability Distributions Binomial Probabilities Additional Properties of Binomial distribution |
| October 13-17 Carl and Mae | Population and Sampling Chapter 12 | Graphs of Normal Probability Distributions Standard Units and Areas Under the Standard Normal Distribution Areas Under Any Normal Curve |
| October 20-24 | Review for mid-term exam Midterm Exam | |

LABS
FALL 2008
(6.0 hrs)
Dates and Times of Labs TBA

The focus of these labs is:

Statistics (3.0): 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.

Nursing Research (3.0): A nursing clinical situation related to one of the scenarios in NS 3900 will be provided. Students will describe the research phenomena, develop a research question, identify a population to study, and develop a quantitative research method to examine the research question.

Seminar Topics*
Winter 2009

| Dates | Nursing Research | Statistics |
|--|--|---|
| January 6-9 Carrie and Scott MacKenzie | Data collection – Qualitative Rigor in Qualitative Research Design Data Collection, eg. Interviewer as Instrument Trustworthiness Chapter 13 | Sampling Distributions The Central Limit Theorem |
| January 12-16 Carrie and Scott MacKenzie | Data Collection - Quantitative Rigor in Quantitative Research Designs: Reliability and Validity of Instruments; Levels of Measurements Chapter 14 | Estimating μ When σ Is Known Estimating μ When σ Is Unknown |
| January 19-23 Johnny Worthington | Analysis of Data, focus on Quantitative Data Chapter 15 | Introduction to statistical Tests Testing the Mean μ Tests Involving Paired Differences (Dependent Samples) Testing The Difference of Two Means |
| January 26-30 The Smiths | Analysis of Data, focus on Qualitative Data Chapter 16 | Scatter Diagrams and Linear Correlation Linear Regression and the Coefficient of Determination Inferences for Correlation and Regression Multiple Regression |
| February 2-6 The Smiths | Critique of Results, Interpretation of Qualitative and Quantitative findings Chapter 17 | Inferences Using the Chi-Square Distribution: Overview of the Chi- Square Distribution Chi-Square: Tests of Independence Chi-Square: Goodness of Fit Testing and Estimating a Single Variance or Standard Deviation |
| February 9-Feb13 Home Care | Research utilization Chapter 18 | Inferences Using the F Distribution Testing Two Variances One-way ANOVA: Comparing Several Sample Means Introduction to Two-Way ANOVA |
| February 23-27 | Review and Final exam | Review and Final Examination: Time and Place TBA |

*** The Schedule May be Subject to Change**

LABS
Winter 2009
(6.0 hrs)

Dates and Times of Labs TBA January 2009

Statistics Labs: Inferential Statistics (3.0)

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

Nursing Research Lab: Qualitative Analysis (3.0)

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

EVALUATION FOR NS 3690**FALL 2008****1. Part I: Critique of the Research Value: 10% of Final Grade**

Students will critique one instructor chosen research report (qualitative or quantitative) using the criteria outlined in the text and information from seminars/lectures. You can choose the research report from the selection on blackboard. Please refer to Chapter 17 in Loisele & Profetto-McGrath, 2007 for guiding questions to use when critiquing a research article. APA and scholarly writing formats are to be used.

The critique will focus on the following topics:

1. The Research Problem
2. The Research Question or Hypotheses
3. The Literature Review
4. The Theoretical Framework if applicable
5. The Research Design

Total length of the critiques will be a maximum of 1000 words.

Grading Guide is located at the back of the course outline

Due Date: October 15th at 1600 hours.

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

These assignments, in a worksheet format, will be completed weekly.

The raw scores for each assignment will be added and given a total percentage and grade determined.

3. Mid-Term Examination: Value: 30% of Final Grade

Questions will arise from labs, seminars/lectures and the textbook. **Please refer to the Examination Policies located in your Student Handbook.** The Instructor will discuss the composition of the exam closer to the exam date with the students (i.e. how many questions, is it multiple choice, short answer, etc.

Part I: Statistical Concepts:**(Value 15% of Final Grade)****Date: October 23rd****Time: in class time****Place: J228****Part II: Nursing Research Concepts:****(Value 15% of Final Grade)**

This exam will be composed of multiple choice and short answer questions.

Date: October 24th, 2008**Time: in class time****Place: D208**

EVALUATION FOR NS 3690**Winter 2009****1. Critique of Research Report Part II: Value: 10% of Final Grade**

Students will critique the same research report (qualitative or quantitative) from the fall semester using the criteria outlined in the text and information from seminars/lectures. Please refer to Chapter 17 in Loisel and Profetto-McGrath, 2007 for guiding questions to use when critiquing a research article. APA and scholarly writing formats are to be used.

Students will critique the following topics:

1. Population and Sampling (including rigor)
2. Data Collection
3. Evidence Ethical Review of the Study and Protection of Human Rights
4. Data Analysis, Rigor in Data Analysis
5. Reliability and Validity, Trustworthiness of Study
6. Interpretation and Discussion of Findings (include implications for nursing practice)

Total length of both critiques combined will be 1000 words.

Grading Guide is located at the back of the course outline

Due: February 13th, 2009 at 1600

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

These assignments, in a worksheet format, will be completed weekly,

The raw scores for each assignment will be added and given a total percentage and a grade determined.

3. Final Examination: Value: 30% of Final Grade.

Questions will arise from labs, seminars/lectures and the textbook. **Please refer to the Examination Policies located in your Student Handbook.** The Instructor will discuss the composition of the exam closer to the exam date with the students (i.e. how many questions, is it multiple choice, short answer, etc).

Part I: Statistical Concepts: (Value 15% of Final Grade)**Date: February 26th, 2009****Time: During class****Place: J228****Part II: Nursing Research Concepts: (Value 15% of Final Grade)****Date: February 27th, 2009****Time: During Class****Place: D208**

| <i>Evaluation</i> | <i>Date and Time</i> | <i>Percentage of Total Mark</i> |
|---------------------------------|--------------------------------------|--|
| Fall, 2008 | | |
| Critique Part I | October 15 th , 1600 | 10% |
| Weekly Stats Assignment Part I | Weekly | 10% |
| Research Midterm Exam | October 24th | 15% |
| Statistics Midterm Exam | October 23rd | 15% |
| Winter, 2009 | | |
| Critique Part II | February 13 th , 0900 | 10% |
| Weekly Stats Assignment Part II | Weekly | 10% |
| Research Final Exam | February 27 th (in class) | 15% |
| Statistics Final Exam | TBA | 15% |
| Total | | 100% |

Total 4-Point Equivalent Value is Translated to Final Grade

Grades for each assignment were translated into the 4-point equivalent, then multiplied by the percentage of total mark for each assignment. The value of those percentages are added up to make a total. That total was converted back into the grade scale to receive your final grade. If you have any questions or concerns, please see your tutor. Exams can be viewed by setting up an appointment with your tutor.

Grading Guide Critiquing a Research Report

(A) Excellent

Exceptional organization and flow. Answers questions in a brief and succinct way.

Clear and in-depth understanding of the article.

Critique is objective, comprehensive, thoughtful, and balanced in identifying both strengths and weaknesses of the study. Provides clear examples to support answers using direct references or quotes with page numbers. Avoids using generalizations in paper. Justifies criticisms and offers rational for how a limitation will affect the quality of the study, and suggests an alternative approach that could have eliminated the problem. Suggestions are practical.

Exceptional spelling, grammar and use of APA guidelines. Exceptional referencing throughout paper.

(B) Very Good

Well organized and easy to read. Answers questions in a thorough manner.

Clear understanding of the article.

Critique is objective and thorough in identifying both strengths and weaknesses of the study. Provides examples to support answers using references or quotes with page numbers. Few generalizations are made in the paper. Justifies criticisms and offers rational for how a limitation will affect the quality of the study, with some suggestions on using an alternative approach. Able to give general information as to how the alternative approach would have eliminated the problem. Suggestions are practical.

Excellent use of APA guidelines with minimal mistakes. Minimal spelling or grammatical errors. Paper is well referenced and detailed with minimal errors.

(C) Satisfactory

Generally well organized with some difficulty in the flow of answering the questions. Answers questions superficially or not concisely.

General understanding of the article with some confusion noted.

Critique is mostly objective with some generalizations made. Missing some information related to the specific components of the critique. Information identifies some strengths and weakness to the study and provides a few examples to support answers from the study. Justification of criticism given but somewhat superficial with rationale as to how the limitation affects the quality of the study. Suggestions of alternatives and how the approach would have eliminated the problem are vague and may not be practical.

Satisfactory use of APA with some corrections needed to format. Occasional spelling and grammatical errors. Able to provide referencing although not all information included.

(D) Minimal Pass

Poor organization and difficult to read. Questions answered superficially and are not complete.

Lack of understanding of the study evident. Discussion of article is confusing and vague.

Critique is not objective with many generalizations made. Missing key information related to the components of the critique. Identifies minimal strengths and weakness to the study and provides minimal examples to support answers with little or no quotes from the study. No justification of criticism given with little rational as to how limitations will affect the quality of the study. No suggestions of alternatives and how the approach would have eliminated the problem used.

Frequent spelling and grammatical errors with little use of APA format used. Poor or inadequate referencing used.

(F) Fail

Lack of organization evident. No structure or format to paper. Questions are not answered.

No understanding of the study evident in paper.

Critique is incomplete and missing key information. Little or no understanding evident related to the strengths and weaknesses of the study with no examples to support answers.

Many spelling and grammatical errors with little or no use of APA format.

Paper is plagiarized, lack of referencing.

RESOURCES:

C.A.R.N.A. (1997, June). Nursing research dissemination and utilization: A background paper. Edmonton: Author. http://nt_web/Archived%20%20Pages/researchdissem.htm.

JOURNALS:

- ♦ Canadian Journal of Nursing Research
- ♦ Clinical Nursing Research
- ♦ Western Journal of Nursing Research
- ♦ Evidence-Based Practice