Nursing 3340A: Ways of Knowing: Data Analysis  
Fall 2019

Section 001 Instructor: Dr. Stephen Lin – clin64@uwo.ca  
Section 002 Instructor: Dr. Jacqueline MacDonald – jmacdon2@uwo.ca

Class Time and Location: 8:30am – 11:30am, HSB 240 (section 001) & HSB 35 (section 002) 
Office: Nursing Building Room 3315 (By Appointment Only)

Teaching Assistants:  
Section 001: Jennifer Howard (jcolli42@uwo.ca)  
Section 002: Sally Ashby (sashby2@uwo.ca)

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University, London, Ontario N6A 3K7 or Fanshawe College, Health Sciences Division, 1001 
Fanshawe Blvd., P.O. Box 7005, London, Ontario N5Y 5R6.

N3340: Ways of Knowing: Data Analysis

Calendar Description: This course will introduce students to basic concepts and techniques 
used to analyze both quantitative and qualitative data. This will include descriptive and 
inferential statistics and common methods for qualitative analysis and interpretation.

Expanded Description: The ability to interpret data analysis, critically analyze research 
results and implications enables nurses to engage in evidence informed practice. The course 
is an extension of the content covered in the research course (N2250) and will provide you 
with a basic foundation in the methods of quantitative and qualitative data analysis commonly 
encountered in published research.

In this course, you will focus on interpreting data output and study findings of published 
research articles that will be presented in the lectures and covered in the group assignments. 
Although this is not a course to equip you with the knowledge to independently perform 
sophisticated analyses of complex healthcare datasets, the course will include some basic 
analytic methods as well as underlying assumptions. While the main emphasis will be on
developing the ability to critically interpret published research articles, the course will also use
data analysis techniques in lectures, in class activities, assignments, tests, and the final exam.

**Attendance**
Due to the significance of theoretical and practice knowledge in developing professional
competence, students are expected to demonstrate professional responsibility through regular
attendance at, and, participation in all scheduled learning activities. Much of the learning that
takes place is a result of preparation and engagement with the course material and active
dialogue with colleagues and faculty.

**Pre-requisite: N2250**

**Year 3 Goals:**

1) Practice nursing and justify clinical judgments using beginning research skills, evidence-based
practice, ethical principles, multiple ways of knowing, and critical and creative thinking.
2) Implement reflective critical thinking strategies to enhance self-understanding, foster personal
knowing, and refine one’s nursing practice.
3) Practice as a member of an interprofessional team to provide culturally sensitive client-
centered care in a variety of settings.
4) Analyze, organize, and reconstruct information to effectively communicate to others and inform
practice.
5) Advocate with others for public policy that will address health and social justice locally,
nationally and internationally.
6) Propose changes to the health care and social systems that respond to societal needs, and
generate possibilities for the nursing profession in accordance with the proposed changes
7) Practice competently and ethically in accordance with professional requirements.

**Course Goals (Reflect Year 3 goals #1,2,3,4, & 7):**

1) To understand and describe the research processes of quantitative and qualitative data
analysis
2) To identify and determine the appropriateness of specific qualitative analysis methods and
quantitative analysis methods reported in published research
3) To assess the rigour of quantitative and qualitative data analysis in published research
4) To understand the results of published qualitative and quantitative studies.

**Competencies for entry-level Registered Nurse practice (CNO, 2014) addressed in the
course:**

Professional responsibility and accountability: #8, 10, 11, 18
Knowledge-based practice: #25, 26, 27, 33, 34, 35
Competent application of knowledge: #45, 55
Ethical practice: #81, 86

National Interprofessional Competencies (CIHC, 2010) addressed in the course:
http://www.cihc.ca/files/CIHC_IPCompetencies_Feb1210.pdf

- Interprofessional communication
- Role clarification
- Team functioning

Nursing Informatics Competencies (CASN, 2012) addressed in the course:

- Uses relevant information and knowledge to support the delivery of evidence-informed patient care
- Uses ICTs in accordance with professional and regulatory standards and workplace policies
- Uses information and communication technologies in the delivery of patient/client care

How this course will contribute to your development as a professional nurse:

Many of you may question why nurses at the baccalaureate level need to understand the basics of data analysis. This is an excellent question and is partially addressed by the recognition of nursing as a health sciences profession. Inherent in many definitions of a profession is the notion that professionals fulfill a distinctive function in society and that the function that is fulfilled is based on evidence that has a foundation in scientific inquiry. The health care system is in a constant state of evolution, and inquiry based on sound data analysis can help nursing to engage in evidence-informed decision making to enhance nursing practice, promote quality patient care and improve health. As evidence informed practices become the norm in health care, the number of nurses who are conducting and using research in practice will continue to increase.

As a consumer of research you will need to understand how research results are generated in order to critically appraise their implications for clinical practice. As well, the same analytic approaches are often used to evaluate healthcare programs and projects to meet accreditation and other standards. Although you may not conduct full research studies at the baccalaureate level of education, you will likely participate in program and service evaluations as part of practice. This course will prepare you for these various roles in practice.

How this course will contribute to your development as an interprofessional team member:

This course will provide students with the basis from which to expand conceptualizations related to how knowledge is generated within the healthcare sector. Subsequently, other
healthcare team members' contributions in research process will be described and explored from an interprofessional perspective. Insights will be provided as to how nursing can become further involved in inter-professional research through the use of various exemplar case studies, analysis strategies, and other learning material related to knowledge translation for professional practice.

**How we will work together in this course:**

Teaching and learning in this course is considered to be a *shared* responsibility between students and faculty. Therefore, it is the professor’s role to guide, facilitate, and support student learning; subsequently, it is your responsibility as a student to actively engage in dialogue, reflection, and critical analysis of the material explored. The course has been designed to provide small group learning opportunities through the use of data analysis and research article critique activities, and other data analysis learning opportunities conducted in teams.

The various learning activities planned throughout the course will help you refine your insights related to research data analysis, and the value of the research process for professional practice. Therefore, active participation and regular class attendance is expected in order to promote student success.

**Required course textbooks:**


**Course Schedule and Readings:**

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic/Assignment</th>
<th>Assigned Readings</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Sept 6</td>
<td>Introduction to the Course</td>
<td>Lo-Biondo-Wood et al. Ch. 7 &amp; 9 (Review)</td>
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<tr>
<td></td>
<td></td>
<td>Quantitative and Qualitative Data Analysis</td>
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<tr>
<td>Date</td>
<td>Day</td>
<td>Activity</td>
<td>Notes</td>
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<tr>
<td>Oct 4</td>
<td>5</td>
<td><strong>Test #1</strong> Qualitative rigour</td>
<td>Noble &amp; Smith (2015)</td>
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<tr>
<td>Oct 11</td>
<td>6</td>
<td>Foundations of Quantitative Data Analysis</td>
<td>Heavey – Ch. 2</td>
</tr>
<tr>
<td>Oct 18</td>
<td>7</td>
<td>Common Quantitative Data Analysis</td>
<td>Heavey – Ch. 3 &amp; 6</td>
</tr>
<tr>
<td>Oct 25</td>
<td>8</td>
<td>Comparing Means of Two Groups</td>
<td>Heavey – Ch. 8 &amp; 9</td>
</tr>
<tr>
<td>Nov 1</td>
<td>9</td>
<td><strong>Test #2</strong> Making Comparisons (Two or More Groups)</td>
<td>Heavey – Ch. 10</td>
</tr>
<tr>
<td>Nov 8</td>
<td>10</td>
<td>Reading Week (No Class)</td>
<td>No Reading</td>
</tr>
<tr>
<td>Nov 15</td>
<td>11</td>
<td>Elaboration Model</td>
<td>Singleton &amp; Straits (2010)</td>
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<td>Nov 22</td>
<td>12</td>
<td>Examining Relationships</td>
<td>Heavey – Ch. 11</td>
</tr>
<tr>
<td>Nov 29</td>
<td>13</td>
<td>Review &amp; Conclusion Group Data Analysis Paper Due (4:00pm)</td>
<td>No Reading</td>
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**Policies**

All policies related to assignments are in the Undergraduate BScN Programs Manual on the Western web site at [owl.uwo.ca](http://owl.uwo.ca) and on the Fanshawe College web site in the Program manual located in the Virtual Home Room at [www.fanshaweonline.ca](http://www.fanshaweonline.ca)

**Statement on Plagiarism**

Student work is expected to be original. Plagiarism is a serious academic offence and could lead to your expulsion from the nursing program. You are plagiarizing if you insert a phrase, sentence or paragraph taken directly from another author without acknowledging that the work belongs to him/her. Similarly, you are plagiarizing if you paraphrase or summarize another author’s ideas without acknowledging that the ideas belong to someone else. All papers must be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University and the College for the detection of plagiarism. All papers submitted will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between Western University, Fanshawe College, and Turnitin.com ([www.turnitin.com](http://www.turnitin.com)). For further information, please see the BScN Program Manual for the policy on plagiarism. Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following web site: [www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf)
Opportunities to Demonstrate Learning

1. Test #1 and #2 – In Class Week 5 (Oct 4) and Week 10 (Nov 1) - (15% each)
   Students will write two tests during class time in week 5 (covering content from weeks 1-4) and week 10 (covering content from weeks 5, 7, 8 & 9). Each test provides the student with an opportunity to review course content and demonstrate application of course concepts. These tests are intended to be helpful for preparation for the final exam.

2. Group Assignment (30% of final grade) - Due date: Nov 29 by 4:00pm
   Students will work in groups of four to review two research articles. As a group, students will critically appraise one qualitative study and one quantitative study focusing specifically on the analysis. Please see separate assignment and rubric posted on OWL.

3. Final Exam (40%) – to be scheduled during the exam period by the Registrar
   Final Exam: During the exam period
   The final exam will be a written exam scheduled by the University during the final exam period. The date, time and place of the exam will be provided by the University and is not set by the course faculty. Therefore, do not make travel plans until the exam schedule has been finalized. The exam will consist of multiple choice questions. Calculators, HB pencils, erasers and student ID should be the only other things with the students during the exam.

Summary of Opportunities to Demonstrate Learning

<table>
<thead>
<tr>
<th>OPPORTUNITIES TO DEMONSTRATE LEARNING</th>
<th>COURSE GOAL(S) ADDRESSED</th>
<th>VALUE</th>
<th>DUE DATE</th>
</tr>
</thead>
</table>
| Tests (x 2)                           | 1. To understand and describe the research processes of quantitative and qualitative data analysis.  
   2. To identify and determine the appropriateness of specific qualitative analysis methods (e.g. coding) and quantitative analysis methods (e.g. descriptive and inferential statistics) reported in published studies. | 30% (15% each) | Oct 4 Nov 1 |
| Group Data Analysis Assignment        | 1. To understand and describe the research processes of quantitative and qualitative data analysis.  
   2. To identify and determine the appropriateness of specific qualitative analysis methods (e.g. coding) and quantitative analysis methods (e.g. descriptive and inferential statistics) reported in published studies. | 30%   | Nov 29 4:00pm |
Final Exam

1. To understand and describe the research processes of quantitative and qualitative data analysis.
2. To identify and determine the appropriateness of specific qualitative analysis methods (e.g. coding) and quantitative analysis methods (e.g. descriptive and inferential statistics) reported in published studies.
3. To assess the rigor of quantitative and qualitative analysis of published research.
4. To understand the results of published studies in terms of qualitative and quantitative data analysis.

<table>
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<tr>
<th>Final Exam</th>
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<tr>
<td></td>
<td>4. To understand the results of published studies in terms of qualitative and quantitative data analysis.</td>
</tr>
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**Assignments and Exams**

Please refer to the Undergraduate Programs Manual for information on penalties for late assignments, re-grading of assignments, and the protocol for missed mid-term or final exams. Western at owl.uwo.ca or Fanshawe in Virtual Home Room www.fanshaweline.ca

**Electronic Devices**

Electronic devices are useful in assisting with the teaching/learning process in both classroom and professional practice settings. In the classroom or praxis setting, devices should be used in a manner that is not distracting to others or oneself.

**Mental Health**

Students who are in emotional/mental distress should refer to the following links for a complete list of options about how to obtain help.
MentalHealth@Western http://www.uwo.ca/uwocom/mentalhealth/
Fanshawe College iCopeU http://icopeu.com/fanshawe/home.html
Counseling Services http://www.fanshawec.ca/counselling/

**Student Safety**

Please refer to the Undergraduate BScN Programs Manual section on Student Safety Concerns: Guidelines for Responding in the Practice Setting Environment and the Student Safety Flow Chart found on the Undergraduate Programs site at owl.uwo.ca, or the Virtual Home Room on Fanshawe OnLine www.fanshaweline.ca