

LAKEHEAD UNIVERSITY

DEPARTMENT OF SOCIOLOGY

SOCI 3311 WAO
Research Techniques and Data Analysis

January 6 to April 3, 2020

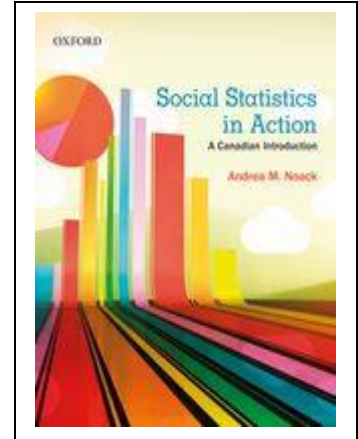
Course Facilitator: **Dr. Kevin Willison**, B.A., M.A., Ph.D.

Instructor's e-mail address: kdwillis@lakeheadu.ca

Credit Weight: 0.5

Room: OA 2010 (500 University Av., Simcoe Hall Building, Orillia campus)

Time: **Mondays and Wednesdays: 5:30 to 6:50 PM**



Instructor's Office Hours: by appointment (mutually arranged in class and/or by e-mail). Note: it is best not to wait until near the end of term to visit your course instructor.

- Refer to the Instructor's e-mail address above and Dr. Willison's teaching schedule, as posted in D2L for this course.
- Note: for this course there are no bonus assignments nor added tests (for such purposes as enhancing grades).
- This course is cumulative in nature. Regular class attendance is strongly urged.

Course Description:

Sociology 3311 WAO is designed to provide students with an introduction towards understanding the skills and knowledge required to carry out basic quantitative data analysis. This course addresses such topics as: the organization and presentation of data; levels of measurement; measures of central tendency; reliability and validity; measures of variability; percentiles and z-scores; the student's *t* test; normal distribution, standard deviation; random sampling distributions; differences between parametric and non-parametric statistical procedures; probability, and statistical inference and, correlation.

Students are expected to understand simple mathematical procedures and to use / own a calculator that has the capacity to perform square roots. Avoid using a complex / scientific calculator. A calculator, writing materials and your required textbook should be brought to all classes.

Key Learning Objectives:

By the end of the course, students will be expected to know:

- [i] How to decide which statistical procedures is most suitable, and for which purpose.
- [ii] Be able to conduct simple statistical solutions both by hand as well as through the use of a calculator.
- [iii] How to interpret statistical results.
- [iv] Better understand the potential and limitations of parameter and statistical analysis.

Courses requirements:

Class Participation

This course is cumulative therefore regular attendance is highly recommended. Your active participation is also highly recommended. This includes: completion of assigned homework questions; asking questions, answering questions, and thinking about / reflecting upon what your data is conveying. It is important to come to class prepared. For every one hour of lecture time it is recommended that students take at least one hour to review material on your own. In real estate the golden rule is: location, location, location. For statistics, it is practice, practice, practice. This will entail working with your class colleagues, solving problems.

Required Text:

Noack, Andrea M. (Editor). Social Statistics in Action. A Canadian Introduction. Oxford University Press. 2018 - ISBN: 978-019-901521-4

- See picture of required text at the top of page one of this outline.
- The required text is available at the Orillia campus bookstore (near cafeteria).
- Be sure to obtain the Canadian edition of your required text.

SOCI 3311 WAO - Evaluation Strategy:

(Jan. - April 2020)	Grading:	Held:
Test One	15 percent	Jan. 27
Test Two	20 percent	Feb. 10
Test Three	20 percent	March 2
Test Four	20 percent	March 23
April 2020 Exam (date/time set by Registrar)	25 percent	TBD
Total:	100 %	100 %

TBD = To Be Determined

TERM - Important Dates: WINTER TERM

- Note: As dates may change. please check yourself on the LU website.

Term TWO at LU - Start Date	Monday January 6, 2020
Family Day (No classes)	Monday February 17, 2020
Break	No classes Feb. 18-21, 2020
Winter Term – Final Class at LU	Friday April 3, 2020

Accommodations / Special Needs:

Lakehead University is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all academic activities. If you think you may need accommodations, you are strongly encouraged to contact Student Accessibility Services (SAS) first. Register

as early as possible. For more information, please visit:
<http://studentaccessibility.lakeheadu.ca>

Your instructor - Dr. Kevin Willison - has received (on-going) specialized training in AODA (the Accessibility for Ontarians with Disabilities Training Act).

Emergency? Know the Number to Call

In case of emergency Security can be reached through any phone on campus, through emergency intercoms in Simcoe Hall and, also in the parking lot. Their direct extension is 2009.

Paramedics, firefighters and police officers do not always know where to find certain buildings or locations on our campuses. By calling ext. 2009 Lakehead Security will quickly dispatch a security guard to your location and contact 911 services. Lakehead Security will then meet and escort emergency services to your location to save valuable time.

Parking: There is a flat fee/day for parking in the Lakehead Orillia lot, \$5/day (there is a kiosk at the entrance of the parking lot in which you would pay (by cash or a credit card) to get a day pass. Parking spaces are on a first come/first served basis, and the lot is monitored by security throughout the day (they do ticket!) Parking is free in the evenings (from 5 PM through to 8 AM).

IT Issues – LU E-mail Accounts and Accessing “Desire2Learn” – D2L

IT (at Lakehead this is called TSC) can be reached through any campus phone by pushing the Helpdesk button. Should TSC related problems arise you may also contact “Help Desk” at **ext. 7777** (on campus) – or tel. 705-330-4008 (then the extension). Only **Help Desk** can assist you with your specific TSC issues and concerns.

General E-mail and Classroom Conduct Guidelines:

[1] Within all e-mail correspondence (not just for this course) it is advisable to follow “the ten commandments of *e-mail netiquette*.”

Please review: <http://www.studygs.net/netiquette.htm>

[2] All e-mail communication sent from students to the instructor for this class **must** originate from the student’s own Lakehead University e-mail account. This policy protects confidentiality and confirms the identity of the student. It is the student’s responsibility to ensure that communication is sent to the university from a Lakehead University account. If an instructor becomes aware that a communication has come from an alternate address, the instructor may not reply.

[3] Please be sure to identify yourself in your e-mail (not only your name but also what course you are in, as your Instructor teaches more than one course, and has many students). This will help speed up a response. Thank you in advance.

[4] The course instructor may best be reached at: kdwillis@lakeheadu.ca. I will do my best to respond to your e-mail **within 8 hours** (or less) of receipt (based on e-mails received between 9am – 5 pm, Monday to Friday). Due to teaching, meetings and research related activities please do not expect your instructor to provide an instant / immediate response. * Note: Dr. Kevin Willison’s course teaching schedule is posted in your course D2L.

[5] Please be advised that you will may *not* get a response e-mailing the Instructor the night before a test or exam. Please plan ahead.

[6] Please do not expect a quick e-mail response if sending an e-mail to an Instructor on a Saturday or Sunday. On weekends your Instructor may have other obligations.

[7] As per LU policy, your specific grades/marks will not be discussed over the internet / e-mail. Please talk to your instructor directly on such matters. Individual course marks (when ready) can be accessed using your unique course D2L account.

[8] Please refrain from sending e-mails / texting / watching movies etc. during class time. Make use of your class time and computer wisely. Not only is it best to focus on the course material during class, texting or viewing inappropriate material on your computer may bother / disturb others around you, particularly those sitting behind you and/or beside you.

[9] Unless in a group work session, please refrain from talking to others when the instructor is talking, as others around you may have difficulty hearing and/or be disturbed. **Have a question? Please raise your hand until I see you and I will try to respond quickly.**

Missed Tests and/or Exams:

Make-up examinations will only be given with written documentation from a healthcare practitioner using the official Student Health Certificate, available at: <http://registrar.lakeheadu.ca/uploads/docs/F.HealthCertificate.pdf>.

Religious Observance Policy: If you require religious accommodation(s), you must make your request to the instructor preferably within the first two weeks of class.

Course Suggestions or Concerns? Students are asked to speak with their Instructor should there be a suggestion, problem or concern regarding the course which you feel may benefit yourself and/or the class. Feel free at any time to speak to your class Instructor (as he or she may simply be unaware). Further, you are encouraged to ask questions and be engaged (as this often helps the learning process).

Weather: The *Weather Network* is a good site:

<http://www.theweathernetwork.com/weather/caon0506>

- **It is best** to refer to the Lakehead University (Orillia) home page website to check for class cancellations. <http://www.lakeheadu.ca/>

**** As a university-level course, regular class attendance is strongly recommended.**

- **Within each section/module as described below, focus on key terms and their interconnections with other terms. For improved comprehension and memory, be sure to review your required text and/or assigned reading(s) regularly (prior to and after attending each class).**
- **Classroom discussion is encouraged, as will critical thinking and problem-based learning. Review assigned readings (made known in class) in advance.**

Section/Module	Sample Topic(s):
Module ONE	<ul style="list-style-type: none"> • Overview of Course Requirements & Course Outline. • D2L essentials. <p>Chapter One – Learning to think Statistically</p> <ul style="list-style-type: none"> • Research types (see Appendix 1) • Commonly Used Quantitative Methods (see Appendix 2) • The language of statistics - sample symbols (see Appendix 3) • Sample statistical terms (see Appendix 4) • The research process • Understanding computerized data • Levels of measurement • Differentiating between parametric and non-parametric statistics • Using descriptive and inferential statistics
Module TWO	<p>Chapter Two – Summarizing Data Using Numbers and Graphics</p> <ul style="list-style-type: none"> • Frequency distributions • Ratios and Rates • Cross-tabulations • Visualizing statistical relationships between two variables • Sample SPSS techniques
Module THREE	<p>Chapter Three – Dispersion and Categorical Variables</p> <ul style="list-style-type: none"> • Describing dispersion • Range and interquartile range • Use of box plots to help show relationships • Best practices in presenting results
Module FOUR	<p>Chapter Four – Shapes of Distributions</p> <ul style="list-style-type: none"> • The mean • The normal distribution • Skewness and Kurtosis • Standard deviation and variance • Outliers
Module FIVE	<p>Chapter Five – Probability Sampling and Weighting</p> <ul style="list-style-type: none"> • An introduction to probability • Sampling / calculating sample size(s) – (see Appendix 5) • Types of probability sampling • Estimating variation
Module SIX	<p>Chapter Six – Sampling Distributions, Standard Errors, and Confidence Intervals</p> <ul style="list-style-type: none"> • Confidence intervals • Comparing group means

	<ul style="list-style-type: none"> • Introduction to ANOVA (analysis of variance) • The Central Limit Theorem
Module SEVEN	<p>Chapters <u>Seven</u> and <u>Eight</u> – Comparing Group Means</p> <p>Review - The statistical decision tree (see Appendix 6)</p> <p>Making use of statistical tables:</p> <ul style="list-style-type: none"> • The z-score table (see Appendix 7 and 7B) • The Student's <i>t</i>-table (see Appendix 8) • The chi-square test of independence <ul style="list-style-type: none"> • Making and testing hypotheses • Assessing the magnitude of a relationship • Cohen's <i>d</i> • One tailed and two-tailed tests
Module EIGHT	<p>Chapter <u>Eleven</u> – Introduction to Linear Regression</p> <ul style="list-style-type: none"> • Basics of Linear Regression • Statistical Inference in Linear Regression • The Coefficient of Determination: <i>R-Squared</i> • Using fuzzy logic for non-linear data
Module NINE	<p>Introduction to Qualitative Data Analysis</p> <ul style="list-style-type: none"> • Analytic Induction • Content Analysis • Basic Operations in Qualitative Data Analysis • Problems with Coding • Narrative Analysis

- **Your final exam (valued at 25% of your final grade) will cover material from: (i) class lecture notes; (ii) required textbook readings; (iii) material as posted in D2L and, (iv) class handouts (including appendix material from this outline) - since Monday January 6, 2020.**