

**SPPH504 (Section 001)**  
**APPLICATION OF EPIDEMIOLOGICAL METHODS**

<b>TIME AND PLACE:</b>	Term 1, Tuesdays, 9 am – noon Tutorials, Tuesdays, noon – 1 pm Starting September 4 <sup>th</sup> , 2018	
<b>LOCATION:</b>	Room B108 School of Population and Public Health 2206 East Mall	
<b>INSTRUCTOR:</b>	Mieke Koehoorn Room 293, 2206 East Mall School of Population and Public Health University of British Columbia 604-822-5756 <a href="mailto:mieke.koehoorn@ubc.ca">mieke.koehoorn@ubc.ca</a>	
<b>OFFICE HOURS:</b>	By Appointment	
<b>TEACHING ASSISTANT:</b>	Ashleigh Rich SPPH PhD Candidate and Graduate Research Assistant School of Population and Public Health, UBC ajrich@mail.ubc.ca	
<b>PRE-REQUISITES:</b>	SPPH400	Statistics for Health Research, and
	SPPH500	Analytical Methods in Epidemiological Research, and
	SPPH502	Epidemiological Methods I, and one of
	SPPH503	Epidemiological Methods II, or
	SPPH506	Quantitative Research Methods, or
	SPPH519	Qualitative Methods for Health Research Design, or
	SPPH530	Epidemiology of Occupational and Environmental Health

**COURSE OVERVIEW:**

The purpose of this course is to apply core epidemiological concepts in the field of population health; and to develop practical skills in research design, data management, data analysis/ building an epidemiologic model, interpretation of analytic output and study biases, and presentation and write-up of research findings suitable for a population health conference and academic journal. The course is intended to build confidence and experience applying epidemiological methods so that you become better population health researchers and practitioners.

**COURSE ACTIVITIES:**

- To use Statistics Canada health survey data files and associated resources and data documentation for population health research;
- To develop a research protocol that includes formulating an epidemiological/population health research question (i.e. the relationship between a risk factor and a health outcome), including the identification of confounders; the identification of a study sample and the development of an analysis plan;
- To carry out the research protocol using the Statistics Canada survey data, including the application of skills in the areas of statistical software, data management, descriptive analysis, analytical modeling, and interpretation of analytic output (coefficients, odds or risk ratios, 95% confidence intervals, confounding, model errors and model fit);
- To present preliminary descriptive and bi-variable results as part of an in-class 'lightning talk' presentation suitable for a population health, academic conference;
- To write a paper suitable for publication in a health-related journal based on findings from your analysis, including writing an Abstract, Introduction, Methods, Results, Discussion and Reference sections; and presenting findings in tables and figures;
- To participate in class discussion and problem solving around the application of epidemiological methods throughout the term.

## IMPORTANT NOTES

### Late Assignments

Each written assignment is to be uploaded via CANVAS on time and on the designated due date. Typically, no late assignments will be accepted. Extensions of the due date for the written assignments will be considered pending extenuating circumstances with the approval of the instructor. The instructor will require documentation of extenuating circumstances (medical certificates, etc.). Assignments submitted later than the due date will be penalized 10% of the possible grade for each day past due (i.e. one minute past the due date/time is considered a day late).

### Academic Integrity

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating may result in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred to the President's Advisory Committee on Student Discipline. Careful records are kept in order to monitor and prevent recurrences. A more detailed description of academic integrity, including the University's policies and procedures, may be found in the Academic Calendar at <http://calendar.ubc.ca/vancouver/index.cfm?tree=3,54,111,0>.

### Accommodations

Students with disabilities who have registered with Access and Diversity (Student Services) <http://www.students.ubc.ca/mura/access/>, including Diversity Services, should notify the instructor.

**SUMMARY OF STUDENT EVALUATION:**

Paper Proposal for your population health journal article	P/F
Introduction section of journal article	10%
Methods section of journal article	20%
Results section of journal article	25%
Lightning Talk presentation of study with descriptive/bi-variable findings	5%
Final article suitable for submission to a scientific health journal	40%
Sex and gender bases analyses (SGBA) – on-line training module certificate	P/F

**GRADING** (from the UBC Department of Educational Studies, Graduate Course Grading Policy, D. Pratt):

**A Level (80% to 100%)**

**A+ is from 90% to 100%:** It is reserved for exceptional work that greatly exceeds course expectations. In addition, achievement must satisfy all the conditions below.

**A is from 85% to 89%:** A mark of this order suggests a very high level of performance on all criteria used for evaluation. Contributions deserving an A are distinguished in virtually every aspect. They show that the individual (or group) significantly shows initiative, creativity, insight, and probing analysis where appropriate. Further, the achievement must show careful attention to course requirements as established by the instructor.

**A- is from 80% to 84%:** It is awarded for generally high quality of performance, no problems of any significance, and fulfillment of all course requirements.

**B Level (68% to 79%)**

This category of achievement is typified by adequate but unexceptional performance when the criteria of assessment are considered. It is distinguished from A level work by problems such as: One of more significant errors in understanding, superficial representation or analysis of key concepts, absence of any special initiatives, or lack of coherent organization or explanation of ideas. The level of B work is judged in accordance with the severity of the difficulties demonstrated. B+ is from 76% to 79%, B is from 72% to 75%, and B- is from 68% to 71%

**C Level (55% to 67%)**

Although a C+, C, or C- grade may be given in a graduate course, the Faculty of Graduate Studies considers 68% as a minimum passing grade for doctoral graduate students.

**SOME SUGGESTED RESOURCES/TEXTS:**

Rothman KJ. (2012) *Epidemiology: An Introduction*. Oxford University Press: New York, New York.

Cody RP and Smith JK. *Applied Statistics and the SAS Programming Language (5<sup>th</sup> Edition)*. Pearson Prentice Hall Publishers; ISBN 0131465325

Heard SB (2016). *The Scientist's Guide to Writing: How to Write More Easily and Effectively throughout Your Scientific Career*. Princeton University Press. ISBN 9781400881147

Messenger WE et al. *The Canadian Writer's Handbook (4<sup>th</sup> Edition)*. Oxford University Press. Ontario CA.

UBC Learning Commons – Centre for Scholarly Writing and Communication:

<http://learningcommons.ubc.ca/improve-your-writing/>

Garrard J. (2004). *Health Sciences Literature Review Made Easy – The Matrix Method*. Jones and Bartlett Publishers: Boston. ISBN 0-7637-2673-7.

**COURSE SUMMARY**

Course lectures will be supplemented with on-site tutorials/problem solving sessions (Tues 12-1 pm) and each class will include time for Q&A and problem solving.

<b>Week</b>	<b>Topic(s)</b>
<b>Week1 Sept4</b>	<ul style="list-style-type: none"> <li>• Introduction to course activities, assignments, expectations, evaluation</li> <li>• Introduction to StatsCan health survey data via Research Data Centre and Google Drive</li> <li>• Introduction to statistical learning environment (via SAS)</li> </ul>
<b>Week2 Sept11</b>	<ul style="list-style-type: none"> <li>• Working with health data (documentation, sampling, coding, data checking)</li> <li>• Creating analytic datasets (sub-setting to analytic sample/variables, new variables)</li> <li>• Discussion on developing research questions using StatsCan data</li> </ul>
<b>Week3 Sept18</b>	<ul style="list-style-type: none"> <li>• Class discussion of research proposals, including peer review and problem solving</li> <li>• Working with health data and creating analytic datasets, <i>continued</i></li> <li>• Key elements of a scientific paper – Introduction section</li> <li>• Directed Acyclic Graphs (DAGS) for identification of confounders</li> </ul>
<b>Week4 Sept25</b>	<ul style="list-style-type: none"> <li>• Using survey sampling weights</li> <li>• Working with health data continued, descriptive and bivariate analyses</li> <li>• DAGS <i>continued</i> (over-adjustment bias)</li> </ul>
<b>Week5 Oct2</b>	<ul style="list-style-type: none"> <li>• Peer review of draft Introduction section</li> <li>• Key elements of a scientific paper - format requirements, choosing a journal, authorship</li> <li>• Key elements of a scientific paper - Methods section</li> <li>• Descriptive statistics continued and Introduction to bivariable analyses</li> </ul>
<b>Week6 Oct9</b>	<ul style="list-style-type: none"> <li>• Bivariable analyses <i>continued</i> and introduction to multivariable analyses</li> <li>• Survey sampling weights <i>continued</i></li> <li>• Writing tips and techniques; writing a better paragraph, common grammatical errors</li> </ul>
<b>Week7 Oct16</b>	<ul style="list-style-type: none"> <li>• Bivariable analyses and multivariable analyses <i>continued</i>, including effect modification</li> <li>• Peer review of Methods section</li> <li>• Tips and techniques for presentation of research findings – tables, figures, slides</li> <li>• Key elements of a scientific paper - Results section</li> </ul>
<b>Week8 Oct23</b>	<ul style="list-style-type: none"> <li>• Multivariable analyses <i>continued</i>, including discussion of confounding effects</li> <li>• Discussion of p values versus confidence intervals, interpretation of ORs</li> </ul>
<b>Week9 Oct30</b>	<ul style="list-style-type: none"> <li>• Student in-class 'lightning talk'—presentation of key descriptive/bivariable findings <b>only</b></li> <li>• <b>B108, B136, B138</b></li> </ul>
<b>Week10 Nov6</b>	<ul style="list-style-type: none"> <li>• Multivariable analyses <i>continued</i></li> </ul>
<b>Week11 Nov13</b>	<ul style="list-style-type: none"> <li>• Peer review of Results section</li> <li>• Key elements of a scientific paper - Discussion section</li> <li>• Multivariable analyses <i>continued</i></li> </ul>
<b>Week12 Nov20</b>	<ul style="list-style-type: none"> <li>• Communications Lecture</li> <li>• Journal article reviews and responding to reviewers' comments</li> </ul>
<b>Week13 Nov27</b>	<ul style="list-style-type: none"> <li>• Problem solving session and Q&amp;A on topics/issues suggested by students</li> <li>• Pursing publication and authorship discussion</li> <li>• Statistics Canada Research Data Centres - process/bootstrapping</li> <li>• Course evaluation – UBC Course Evaluation Form plus in-class recommendations</li> </ul>

**COURSE ASSIGNMENTS AND DUE DATE – All assignments to be submitted electronically via CANVAS by the due dates/times. Late penalties apply as per course policy on page 3 above.**

<b>Dates</b>	<b>Activity</b>
<b>ASSIGNMENT#1a and #1b</b>	
1a. Monday, Sept 17 <sup>th</sup> (6:00 pm)	Draft one-page research proposal for peer review (see attached template) – Assignment#1a (P/F)
1b. Tuesday Sept 18 <sup>th</sup> (11:59 pm)	Revised one-page research proposal for instructor evaluation – Assignment #1b (P/F)
<b>ASSIGNMENT#2a and #2b</b>	
2a. Monday, Oct 1 <sup>st</sup> (6:00 pm)	Introduction assignment for peer review – Assignment#2a (P/F)
2b. Tuesday Oct 2 <sup>nd</sup> (11:59 pm)	Revised Introduction assignment for instructor evaluation – Assignment #2b (10%)
<b>ASSIGNMENT#3a and #3b</b>	
3a. Monday Oct 15 <sup>th</sup> (6:00 pm)	Methods assignment for peer review-Assignment#3a (P/F)
3b. Tuesday, Oct 16 <sup>th</sup> (11:59 pm)	Revised Methods assignment for instructor evaluation– Assignment#3b (20%)
<b>ASSIGNMENT#4a and #4b</b>	
4a. Monday, Oct 29 <sup>th</sup> (6:00 pm)	Copy of slides (pdf) for in-class study ‘Lightning’ presentation – Assignment #4a
4b. Tuesday, Oct 30 <sup>th</sup> (9 am-noon)	In-class ‘Lightning-talk presentations– Assignment#4b (5%)
<b>ASSIGNMENT#5a and #5b</b>	
5a. Monday Nov 19 <sup>th</sup> (6:00 pm)	Results assignment for peer review – Assignment #5a (P/F)
5b. Tuesday Nov 20 <sup>th</sup> (11:59 pm)	Revised Results assignment for instructor evaluation – Assignment #5b (25%)
<b>ASSIGNMENT#6</b>	
6. Tuesday, Dec 11 <sup>th</sup> (11:59 pm)	Final journal article (Abstract, Introduction, Methods, Results plus Discussion, including References and Figures, Tables) (40%)
<b>ASSIGNMENT#7</b>	
7. SGBA Certificate – submitted by Nov 27 <sup>th</sup> (11:59 pm)	On-line training module and certificate – integrating sex and gender in health research (successful completion of one of three CIHR modules) (P/F)

## DESCRIPTION OF ASSIGNMENTS

Your paper will evolve over the course of the term using the following assignments as inputs, and you are expected to revise/update sections of your paper to incorporate instructor/peer feedback as well as new learning over the term into the final version (i.e. an organized whole that is more than the sum of its parts).

Completion of **Research Proposal (Assignments 1a and 1b)** as per the Proposal Template below; reflecting careful consideration of an appropriate population health research question, study sample, key study variables (one explanatory and one outcome variable), potential confounders and analytic approach. This is a Pass/Fail assignment - you must submit a proposal to proceed with course. Students with a Failing grade will be asked to submit a revised proposal incorporating instructor feedback.

Completion of an **Introduction assignment for your population health journal article (Assignments 2a and 2b)**. The Introduction must include three paragraphs documenting 1) an introduction to the issue with statistics describing the 'problem' of relevance to population health research, 2) a summary of previous key studies/findings (i.e. the background) that informs your research question/hypothesis, and 3) a summary of key issue(s)/gap(s)/problem(s) leading to the rationale for your study and research question. This assignment must not exceed 500 words, excluding reference list.

Completion of a **Methods assignment for your population health journal article (Assignment 3a and 3b)**. The Methods must include four paragraphs that describe 1) the study design, 2) the study sample with inclusion/exclusion criteria where relevant and a flowchart (Figure 1) demonstrating how you went from the survey sample to your analytic sample with numbers, 3) definitions for the outcome and explanatory variable, plus potential confounders, and 4) the analysis plan. This assignment must not exceed 750 words, excluding Figure 1 and reference list.

Students are responsible for delivering an academic-style, '**Lightning Talk**' presentation on their study, suitable for a population health conference (**Assignment 4a-Slides and 4b-Presentation**). See the following link for a description of a 'Lightning Talk': [https://en.wikipedia.org/wiki/Lightning\\_talk](https://en.wikipedia.org/wiki/Lightning_talk). Lightning Talks will be five-minutes maximum per student and limited to five slides per presentation. A copy of the slides is due via UBC CANVAS on the Monday before the Tuesday presentation (pdf version to avoid formatting issues) and cannot be modified after submission. The presentation during Tuesday class must provide the audience with an overview of the study (rationale, research question, key methodological components), findings to-date (key descriptive findings on the sample and key bi-variable findings on the relationship between the main explanatory and outcome variables), plus a discussion of key study limitations/biases.

Completion of a **Results assignment for your population health journal article (Assignment 5a and 5b)**. Results must include three paragraphs that provide 1) descriptive characteristics of the study sample, 2) descriptive statistics (i.e. mean, median, range, %) for the outcome and explanatory variables, and 3) the bivariable (unadjusted) and multivariable (adjusted) relationships between the outcome and explanatory variable, and the bivariable and multi-variable relationships between the outcome and the potential confounders. The results section must include a Table 1 with the descriptive (n plus distribution statistics) for the study sample. Table 1 may also include the bivariable and multivariable statistical model results, although one additional Table 2 is permissible as needed for the presentation of findings. This assignment must not exceed 750 words, excluding the table (s) and reference list.

## FINAL Class Paper - Academic Journal Article (ASSIGNMENT 6)

The final class paper is a scientific article suitable for publication in a health-related journal. Your paper will evolve over the course of the term using the section assignments as inputs, and you are expected to revise/update sections of your paper to incorporate instructor/peer feedback, as well as new learning over the term, into the final version (i.e. an organized whole that is more than the sum of its parts). The final course paper has 6 sections (adhering to journal guidelines): 1) Title Page (title of article and full author name), 2) Introduction, 3) Methods (with Study Sample Flowchart/Figure 1), 4) Results (with Table 1, plus Table 2 and/or Figure 2 only if needed), 5) Discussion and 6) References (Vancouver Style).

The **Introduction** section must include **three paragraphs**: 1) a description of the health 'problem' illustrating the importance of the population health issue, 2) a summary of previous key studies/findings (i.e. the background) that informed the rationale for your study, and 3) a summary of key issue(s)/gap(s)/problem(s) leading to your stated research question.

The **Methods** section must include **four paragraphs** that describe: 1) the study design; 2) the study sample with inclusion and exclusion criteria and a flowchart/Figure 1 (from survey sample to your analytic sample), 3) definitions for the outcome and explanatory variable, plus potential confounders (and interaction terms, effect modifiers if appropriate), and 4) the analysis plan.

The **Results** section must include **four paragraphs** that provide: 1) descriptive statistics of the study sample, 2) descriptive statistics (e.g. %, mean, median, range) for the outcome and explanatory variables, 3) the bivariable (unadjusted) and multivariable (adjusted) relationship between the outcome and explanatory variable, and between the outcome and the confounders, and **4) one additional paragraph with findings as they relate to a) issues of confounding, or b) interaction effects or c) sensitivity analyses (e.g. varying definition of explanatory variable)**. The results section must include a Table 1 with the descriptive (n plus distribution statistics) for the study sample. Table 1 may also include the bivariable and multivariable statistical model results, although one additional Table 2 is permissible as needed for the presentation of findings. A maximum of 2 tables and 1 figure can be used in the entire paper (study sample flowchart/Figure 1 in Methods, Table 1 in Results, plus one additional Table in the Results section, **as needed/at your discretion**).

The **Discussion** section must include **four sections**: 1) a summary of key finding(s) relative to the research question; 2) a discussion of similarities and differences between the current findings and previous research and explanations why did you observed what you observed); 3) a discussion of the strengths and limitations of the study, including the potential influence of key biases on the results/findings; and 4) conclusions on how the current findings influence our knowledge, practices, or understanding of the health problem, plus recommendations for future studies.

The **maximum word count** for the **final paper** (Introduction, Methods, Results, Discussion sections, **excluding** Title Page, References and Tables/Figures/Graphs) is **3000 words**. Usually the Discussion section is the longest (approximately 1,000 words) and the Introduction the shortest (approximately 500 words). Approximately one-half of the paper is for the Methods and Results Sections (750 words each). There are no word limits for the Title Page, References or Tables/Figures.

**ASSIGNMENT 1A and 1B - Research Proposal – SPPH504 (P/F)**

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Research Question (relationship and direction of relationship between **one** key explanatory factor and **one** health outcome of relevance to population health):

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Data Source/Survey and Data Years:

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Description/Definition of Study Sample with exclusion criteria (if any): and estimated n (based on survey documentation):

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Description/Definition of Study Outcome (dependent variable). Include the survey variable name(s) and estimated number of respondents from the survey documentation:

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Description/Definition of Explanatory Variable (independent variable). Include the survey variable name(s) and estimated number of respondents from the survey documentation:

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List Potential Confounders. Include the survey variable name(s) from the survey documentation:

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Proposed Analytic Model. Based on the type of outcome measure and how you want to analyze the data to answer your research question

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## SPPH504 Academic Journal Article– Marking Rubric for Class Assignments 2B, 3B, 5B

ASSIGNMENT 2B - INTRODUCTION – 10% of Final Grade				
Expression	Components	Interpretation	Overall Assessment	Marking
<ul style="list-style-type: none"> <li>• Good paragraph construction</li> <li>• Sections well integrated</li> <li>• No errors in expression (e.g. slang, spelling, grammar)</li> <li>• Demonstrates clear organization and logical development of ideas</li> <li>• Language is clear and concise</li> </ul>	<ul style="list-style-type: none"> <li>• Addresses all components and requirements of section (problem statement, literature context, research gap or study need, research question)</li> <li>• Purposeful selection of key readings</li> </ul>	<ul style="list-style-type: none"> <li>• Cogent rationale and research question</li> <li>• Proper interpretation of previous research</li> <li>• Correct identification of research gaps/needs</li> </ul>	<ul style="list-style-type: none"> <li>• Reader has a clear understanding of why the study is warranted, how it builds upon previous key studies and what specific epidemiological/ population health research question is addressed by the study.</li> </ul>	<p><b>Outstanding (9-10)</b></p>
<ul style="list-style-type: none"> <li>• Mostly correct, clear and concise, some errors in items listed above</li> </ul>	<ul style="list-style-type: none"> <li>• Addresses most components/requirements, but some missing elements</li> </ul>	<ul style="list-style-type: none"> <li>• Interprets most components correctly, but some errors in interpretation or some omissions</li> </ul>	<ul style="list-style-type: none"> <li>• Addresses most of the elements as described above but missing some elements for the reader</li> <li>• Some errors in interpretation of literature, rationale for the study and research question</li> </ul>	<p><b>Competent (7 - 8)</b></p>
<ul style="list-style-type: none"> <li>• Challenging to read re expression, flow, paragraph construction, conciseness, organization</li> <li>• Errors of expression (e.g., slang, misspelling, grammatical errors)</li> </ul>	<ul style="list-style-type: none"> <li>• Mostly does not address the section components/requirements; incorrectly addresses most elements</li> </ul>	<ul style="list-style-type: none"> <li>• Major errors in interpretation of literature</li> <li>• Rational for study and the research question are not cogent</li> </ul>	<ul style="list-style-type: none"> <li>• Mostly does not address the objectives for this section (i.e. not clear why the study is warranted, does not appear to add to the existing literature)</li> <li>• Reader does not conclude the same need/rationale for the study</li> <li>• A different research question is warranted</li> </ul>	<p><b>Incomplete or incorrect (&lt;=6)</b></p>
No response	No response	No response	No response	<b>No response (0)</b>

ASSIGNMENT 3B - METHODS – 20% of Final Grade				
Expression	Components	Interpretation	Overall Assessment	Marking
<ul style="list-style-type: none"> <li>• Good paragraph construction</li> <li>• Sections well integrated</li> <li>• No errors in expression (e.g. slang, spelling, grammar)</li> <li>• Demonstrates clear organization and logical development of ideas</li> <li>• Language is clear and concise</li> </ul>	<ul style="list-style-type: none"> <li>• Addresses all components and requirements of section (study sample, outcome, explanatory variable, confounders, analytic plan)</li> </ul>	<ul style="list-style-type: none"> <li>• Cogent selection and definition of a study sample, study variables, confounders and analytic plan</li> </ul>	<ul style="list-style-type: none"> <li>• At the end of the Methods section, readers should have sufficient information that they could repeat the study.</li> </ul>	<p><b>Outstanding (17-20)</b></p>
<ul style="list-style-type: none"> <li>• Mostly correct, clear and concise, some errors in items listed above</li> </ul>	<ul style="list-style-type: none"> <li>• Addresses most components/requirements, but some missing elements</li> </ul>	<ul style="list-style-type: none"> <li>• Addresses most elements, but some elements of interpretation are missing or not clear to the reader</li> </ul>	<ul style="list-style-type: none"> <li>• Could replicate some but not all elements of the methods</li> </ul>	<p><b>Competent (14-16)</b></p>
<ul style="list-style-type: none"> <li>• Challenging to read re expression, flow, paragraph construction, conciseness, organization</li> <li>• Errors of expression (e.g., slang, misspelling, grammatical errors)</li> </ul>	<ul style="list-style-type: none"> <li>• Mostly does not address the section components/requirements; incorrectly addresses most elements</li> </ul>	<ul style="list-style-type: none"> <li>• Selection of study sample, study variables, or analytic plan not cogent or in error</li> </ul>	<ul style="list-style-type: none"> <li>• Could not replicate most elements of the study design</li> </ul>	<p><b>Incomplete or incorrect (≤13)</b></p>
<ul style="list-style-type: none"> <li>• No response</li> </ul>	<ul style="list-style-type: none"> <li>• No response</li> </ul>	<ul style="list-style-type: none"> <li>• No response</li> </ul>	<ul style="list-style-type: none"> <li>• No response</li> </ul>	<p><b>No response (0)</b></p>

ASSIGNMENT 5B - RESULTS – 25% of Final Grade				
Expression	Components	Interpretation	Overall Assessment	Marking
<ul style="list-style-type: none"> <li>• Good paragraph construction</li> <li>• Sections well integrated</li> <li>• No errors in expression (e.g. slang, spelling, grammar)</li> <li>• Demonstrates clear organization and logical development of ideas</li> <li>• Language is clear and concise</li> </ul>	<ul style="list-style-type: none"> <li>• Addresses all requirements (description of sample, bivariable and multivariable results, main findings for research question adjusted for confounders, plus tables/figure; final paper to include a sensitivity analyses (e.g. investigation of robustness of findings, or investigation of interaction)</li> </ul>	<ul style="list-style-type: none"> <li>• Correctly interprets descriptive, bivariable and multivariable results</li> <li>• Correctly interprets additional components such as confounders correlations, missing data, 'sensitivity' analyses</li> <li>• Model building decisions are cogent</li> <li>• Tables and figure are 'stand alone' and can be interpreted by the reader without the text.</li> </ul>	<ul style="list-style-type: none"> <li>• Reader understands who was included in the study sample, how the key outcome and explanatory variables were distributed in the study sample, the bivariate relationship between variables, and the final adjusted relationship in the multivariable model.</li> <li>• Reader would generally arrive at same results as the author</li> </ul>	<b>Outstanding (21-25)</b>
<ul style="list-style-type: none"> <li>• Mostly correct, clear and concise, some errors in items listed above</li> </ul>	<ul style="list-style-type: none"> <li>• Addresses most components/requirements , but some missing elements</li> </ul>	<ul style="list-style-type: none"> <li>• Correctly interprets most elements but some errors in interpretation</li> <li>• Need to refer to the text to interpret some elements of the tables/figure</li> <li>• Some errors in model decision making</li> </ul>	<ul style="list-style-type: none"> <li>• Addresses most components listed above but some gaps in understanding</li> <li>• Could replicate some but not all elements of the results</li> </ul>	<b>Competent (17-20)</b>
<ul style="list-style-type: none"> <li>• Challenging to read re expression, flow, paragraph construction, conciseness, organization</li> <li>• Errors of expression (e.g., slang, misspelling, grammatical errors)</li> </ul>	<ul style="list-style-type: none"> <li>• Mostly does not address the section components/ requirements; incorrectly addresses most elements</li> </ul>	<ul style="list-style-type: none"> <li>• Major errors in interpretation across multiple components</li> <li>• Need to refer to text to interpret for most elements of tables/figure</li> <li>• Model decision making is fatally flawed</li> </ul>	<ul style="list-style-type: none"> <li>• Mostly does not address the objectives of this section</li> <li>• Could not replicate results</li> </ul>	<b>Incomplete or incorrect (&lt;=16)</b>
<ul style="list-style-type: none"> <li>• No response</li> </ul>	<ul style="list-style-type: none"> <li>• No response</li> </ul>	<ul style="list-style-type: none"> <li>• No response</li> </ul>	<ul style="list-style-type: none"> <li>• No response</li> </ul>	<b>No response (0)</b>

**ASSIGNMENT 4a and 4b - Evaluation**

ASSIGNMENT 4A – Copy of Lightning Presentation Slides (Pdf version).

ASSIGNMENT 4B – In-class Lightning Presentation (5%)

Students are responsible for delivering an academic-style, '**Lightning Talk**' presentation on their study, suitable for a population health conference (5%). See the following link for a description of a 'Lightning Talk': [https://en.wikipedia.org/wiki/Lightning\\_talk](https://en.wikipedia.org/wiki/Lightning_talk). Lightning Talks will be five minutes maximum per student and limited to five slides per presentation. A copy of the slides is due via UBC Connect on Monday October 30<sup>th</sup> by 6 pm (pdf version to avoid formatting issues) and cannot be modified after submission. The presentation must provide the audience with an overview of the study (rationale, research question, key methodological components), findings to-date (key descriptive findings on the sample and key bi-variable findings on the relationship between the main explanatory and outcome variables), plus a discussion of key study limitations/biases.

**Evaluation Criteria:**

- 0%: Did not participate in 'Lightning Talk' presentation
- 3%: Participated in 'Lightning Talk' presentation
- 4%: Participated in 'Lightning Talk' presentation and met the assignment expectations (5 slides, 5 minutes, presentation provided research question, rationale for study, key methodological components, key descriptive and bivariable findings, and key (1-3) study limitations/biases)
- 5%: Participated in 'Lightning Talk' presentation, met the assignment expectations, plus demonstrated additional initiative, insight, creativity (e.g. insightful interpretation of their results/biases, creativity in the visual or oral presentation that enhanced effective communication, evidence of presentation preparation in terms of pacing/flow/talking to point)

## ASSIGNMENT 6 – REVISED INTRODUCTION, METHODS, RESULTS SECTIONS PLUS DISCUSSION

DISCUSSION SECTION			
Expression	Components	Interpretation	Overall Assessment
<ul style="list-style-type: none"> <li>• Good paragraph construction</li> <li>• Sections well integrated</li> <li>• No errors in expression (e.g. slang, spelling, grammar)</li> <li>• Demonstrates clear organization and logical development of ideas</li> <li>• Language is clear and concise</li> </ul>	<ul style="list-style-type: none"> <li>• Addresses all components and requirements of section (summary of findings, findings in the context of existing literature, explanation of findings, limitations and understanding of limitations, explanation of findings)</li> </ul>	<ul style="list-style-type: none"> <li>• Cogent summary of key findings from the analysis</li> <li>• Cogent interpretation of results relative to other studies</li> <li>• Cogent interpretation of recommendations for future research, practice</li> <li>• Demonstrates insight, depth/breadth to discussion of findings and epidemiological research issues</li> </ul>	<ul style="list-style-type: none"> <li>• Reader understands if the results provide an answer to the research question; if the results agree with what others have shown and if not, how this study differ from others; what factors or sources of error influenced the results or what insights other researchers could learn from your work to improve future studies; and how the results of the study influence our knowledge, practice or understanding of the problem</li> </ul>
<ul style="list-style-type: none"> <li>• Mostly correct, clear and concise, some errors in items listed above</li> </ul>	<ul style="list-style-type: none"> <li>• Addresses most components/requirements, but some missing elements</li> </ul>	<ul style="list-style-type: none"> <li>• Correctly interprets most elements but some errors in interpretation and explanation</li> <li>• Provided insight, depth and breadth of response in some areas but not all; some errors in discussion of epidemiological methods</li> </ul>	<ul style="list-style-type: none"> <li>• Addresses most components listed above but some gaps</li> </ul>
<ul style="list-style-type: none"> <li>• Challenging to read re expression, flow, paragraph construction, conciseness, organization</li> <li>• Errors of expression (e.g., slang, misspelling, grammatical errors)</li> </ul>	<ul style="list-style-type: none"> <li>• Mostly does not address the section components/ requirements; incorrectly addresses most elements</li> </ul>	<ul style="list-style-type: none"> <li>• Major errors in interpretation and explanation</li> <li>• Lacking insight in epidemiological research methods; lack of depth or breadth to discussion and explanation</li> </ul>	<ul style="list-style-type: none"> <li>• Mostly does not address the objectives of this section</li> </ul>
<ul style="list-style-type: none"> <li>• No response</li> </ul>	<ul style="list-style-type: none"> <li>• No response</li> </ul>	<ul style="list-style-type: none"> <li>• No response</li> </ul>	<ul style="list-style-type: none"> <li>• No response</li> </ul>

ASSIGNMENT 6 - REFERENCES (Vancouver Style)				
Expression	Components	Interpretation	Overall Assessment	Marking
<ul style="list-style-type: none"> <li>No spelling errors</li> <li>All references are included in the reference list</li> </ul>	<ul style="list-style-type: none"> <li>Can find all references</li> <li>Follows a consistent referencing format acceptable by a health journal (<b>MUST BE Vancouver Style</b>)</li> <li>References correctly cited in the text</li> </ul>	<ul style="list-style-type: none"> <li>Correctly interprets evidence from other studies</li> <li>Correctly attributes evidence to original source</li> <li>Provides different perspectives where needed</li> </ul>	<ul style="list-style-type: none"> <li>Conveys to reader a purposeful selection of readings, but depth and breadth of evidence</li> <li>Reader able to find and check citations as easily as possible</li> </ul>	<p><b>Excellent</b> (no deductions)</p>
<ul style="list-style-type: none"> <li>Some errors or omissions</li> </ul>	<ul style="list-style-type: none"> <li>Addresses most components/requirements, but some errors</li> </ul>	<ul style="list-style-type: none"> <li>Addresses most components/requirements, but some errors</li> </ul>	<ul style="list-style-type: none"> <li>Addresses most components/requirements, but some errors</li> </ul>	<p><b>Incomplete</b> 5% deduction</p>
<ul style="list-style-type: none"> <li>Consistent spelling errors and reference omissions</li> </ul>	<ul style="list-style-type: none"> <li>Inconsistent referencing style, incorrect referencing style</li> <li>Cannot find references</li> </ul>	<ul style="list-style-type: none"> <li>Incorrectly or inappropriately attributes evidence</li> </ul>	<ul style="list-style-type: none"> <li>Major errors in referencing style, evidence attribution</li> <li>Reference list is not a resource for the reader</li> </ul>	<p><b>Incomplete and incorrect</b> 10% deduction</p>

**ASSIGNMENT 6 –FINAL SPPH504 PAPER (40%)****Evaluation Criteria**

**Adjudication of final scientific paper suitable for submission to health-related journal, including Title, Introduction, Methods (with Flowchart/Figure 1), Results (with Table 1, plus Table 2 and/or Figure 2 only if needed), Discussion, and References.** Your final paper will evolve over the course of the term using the assignments as inputs, and you are expected to revise/update sections of your paper to incorporate instructor/peer feedback as well as new learning over the term into the final version. The final version will be evaluated as an organized whole that is more than the sum of its parts.

**A Level (80% to 100%)**

**A+ is from 90% to 100%:** It is reserved for exceptional work that greatly exceeds course expectations. In addition, achievement must satisfy all the conditions outlined in the assignments and demonstrate exceptional work incorporating class/instructor feedback on work throughout the term.

**A is from 85% to 89%:** A mark of this order suggests a very high level of performance on all criteria used for evaluation. Contributions deserving an A are distinguished in virtually every aspect. They show that the individual significantly shows initiative, creativity, insight, and probing analysis where appropriate. Further, the achievement must show careful attention to course requirements as established by the instructor and careful consideration of the inclusion of class/instructor feedback on work throughout the term.

**A- is from 80% to 84%:** It is awarded for generally high quality of performance, no problems of any significance, and fulfillment of all course requirements. In addition, achievement must satisfy all the conditions outlined in the assignments and incorporate class feedback from assignments.

**B Level (68% to 79%)**

This category of achievement is typified by adequate but unexceptional performance when the criteria of assessment are considered. It is distinguished from A level work by problems such as: One or more significant errors in understanding, superficial representation or analysis of key concepts, absence of any special initiatives, lack of coherent organization or explanation of ideas, and/or failure to include instructor/peer feedback on work throughout the term. The level of B work is judged in accordance with the severity of the difficulties demonstrated. B+ is from 76% to 79%, B is from 72% to 75%, and B- is from 68% to 71%.

**C Level (55% to 67%)**

Although a C+, C, or C- grade may be given in a graduate course, the Faculty of Graduate Studies considers 68% as a minimum passing grade for doctoral graduate students.

**ASSIGNMENT 7 – SEX AND GENDER BASED ANALYSIS TRAINING CERTIFICATE (P/F)**

Students are required to complete one of three on-line training modules provided by the Canadian Institutes for Health Research's Institute for Gender and Health:

<http://www.cihr-irsc.gc.ca/e/49347.html#wb-cont>

Students can choose which training module to complete based on their research interests or needs: 1) Sex and Gender in Biomedical Research, 2) Sex and Gender in Primary Data Collection with Humans or 3) Sex and Gender in the Analysis of Data from Human Participants.

Students can complete the training module at any time during the SPPH504 course (September to December 2017), but must submit a copy of their certificate of completion via the Assignment folder for the course on the UBC Connect website in order to receive their final course grade and to successfully meet all of the requirements for SPPH504.