

HINF 381 (A01): EPIDEMIOLOGY, POPULATION HEALTH AND PUBLIC HEALTH CRN: 11904	
TERM	FALL 2023
CLASS TIMES	TUESDAYS AND WEDNESDAYS, 1:00PM-2:20PM PACIFIC
CLASS LOCATION	ELLIOTT BUILDING 061
INSTRUCTOR	ERDEM YAZGANOGLU
OFFICE HOURS	TUESDAYS AND WEDNESDAYS, 2:30 - 3:0 PM PACIFIC - REQUIRES CONFIRMATION OF ATTENDANCE
TELEPHONE	CELL: 250 812 1513
E-MAIL	yazganog@uvic.ca
LEARNING TECHNICAL SUPPORT	UVic COMPUTER HELP DESK EMAIL helpdesk@uvic.ca FOR ZOOM, BRIGHTSPACE, AND OTHER TECHNOLOGIES TELEPHONE: 250-721-7687 OR TOLL-FREE 1-844-721-7687 <ul style="list-style-type: none"> • 8AM TO 11PM (PACIFIC) ON MONDAY-FRIDAY • 10AM TO 10PM (PACIFIC) ON SATURDAY & SUNDAY • 10AM TO 6PM (PACIFIC) ON STATUTORY HOLIDAYS FOR OTHER ISSUES CONTACT itsisupport@uvic.ca
ONLINE LEARNING TOOLS	LEARN ANYWHERE ONLINE RESOURCES GET TO KNOW YOUR ONLINE TOOLS ZOOM ORIENTATION GUIDE
TERRITORY AKNOWLEDGEMENT	
First Peoples House We acknowledge and respect the ləkʷəŋən peoples on whose traditional territory the university stands and the Songhees, Esquimalt and W̱SÁNEĆ peoples whose historical relationships with the land continue to this day.	
OVERVIEW	
The objective of this course is to provide the student with an introduction to the study of the distribution and determinants of disease and injury in human populations, including measures of disease occurrence, research designs, and causation criteria. You will learn about epidemiologic approach to disease and intervention, using epidemiology to identify the causes of disease and applying epidemiology to evaluation and policy.	
COURSE DESCRIPTION	

Health informaticians have an important role in helping to coordinate and communicate health information to support consumer and health professional: information supporting learning, decision-making, and practice at the point-of-care. Epidemiology is “the study of the distribution and determinants of health-related states or events in specified populations and the application of this study to control health problems” (Gordis, 2008, p.3). In order to find these causes and risk factors, data collected from various sources needs to be translated into information and provided to the decision makers in an understandable and meaningful manner. This requires the knowledge of epidemiologic concepts.

COURSE AND LEARNING OBJECTIVES

Course Goals specific to Students:

- Explain the role of epidemiology in healthcare
- Discuss the role of health informatics in epidemiology
- Calculate different epidemiological measures for occurrence of diseases and screening tests
- Design a study to evaluate the association or causation of a factor with a disease
- Evaluate the presence of the bias, confounding and interactions in a conducted study
- Analyze a screening program and formulate a health policy
- Identify the ethical and professional issues in epidemiology

PREREQUISITES

- Complete all of the following
 - 1.5 units of STAT courses
 - admission to BSc in Health Information Science or Combined BSc in Health Information Science and Computer Science
- or permission of the school

READINGS

Specific learning objectives, deliverables and material that will be used in each session are presented session by session in the Brightspace site. Students are expected to have read the chapters prior to the session. For particular sessions, additional articles will be posted.

Please follow Brightspace for announcements and additional course materials.

Required Material:

Books: Gordis, Leon. 2019. Gordis Epidemiology; Sixth Edition, Saunders Elsevier. (earlier editions are also acceptable - ISBN-13: 978 0 323 55229-5

FORMAT

Each 80-minute session is dedicated to chapter of the book. Information related to topic will be reviewed through question-answer, videos, discussion, and case studies.

MARK BREAKDOWN

All major tests and assignments must be completed to pass the course.

I reserve the right to use plagiarism detection software or other platforms to assess the integrity of student work.

Laboratory (25%) is the hands-on-sessions for epidemiologic analysis. Laboratory consists the 25% of the course mark. Laboratory sessions will be provided by Cher Ghafari and has a separate Coursespaces site. **Laboratory is mandatory for all students.**

Quizzes (15%): There is one quiz per book chapter. The quizzes are three tries basis. They will be open one day prior to the session and will close one day after the session. Uncomplete quizzes will be given a mark of "0". The average of all quizzes will contribute to the 15% of total course mark.

Assignment 1 (15%): Disease status description: This assignment is due on **October 10, 2021**. Please note the disease that students work on is **Breast Cancer**. This assignment can be completed in groups of 2 or 3. Groups are not mandatory. The recommended assignment length is 4 single spaced pages (figures, graphs and appendices are not included within page count) and written with type face of Calibri 11 or equivalent. The objective of the assignment is to describe the status of a selected disease using the course material.

Assignment 2 (15%): Evidence review: This assignment is due on **November 17, 2021**. This assignment can be completed in groups of 2 or 3. Groups are not mandatory. The recommended assignment length is 4 single spaced pages (figures, graphs and appendices are not included within page count) and written with type face of Calibri 11 or equivalent. The objective of the assignment is to review and analyze given studies for their quality of evidence. Three different studies (a randomized control study, a cohort study and a case control study) will be provided for the assignment.

Term Paper (30%):

Term paper will be a reflection of all learnings in the Course. It will cover all learning objectives and integrated with the Laboratory. Students will work in groups. Expected group size is 5 or less individuals. A sample study is presented demonstrating what can be done with the given data.

Term Paper is due on **December 11, 2023**

The assignment does not have a page restriction and written with type face of Calibri 11 or equivalent. The assignment does not have a page restriction and written with type face of Calibri 11 or equivalent. Appendices is can include data analysis results (#4 below), literature analysis (#5 below), and screening tool analysis (#6 below) and any other information that is necessary for the term project but not critical to put into the report body.

Data for the analysis is the Canadian Community Health Survey which provides information regarding social determinants of health as well as health status of the population.

You will have opportunities (in class and out of class) ask questions and receive guidance to prepare your term paper. These opportunities will be integrated into your class schedule.

Grading rubric is presented as Appendix - 2

SCHEDULE AT A GLANCE

PRESENTED IN APPENDIX - 1

COURSE EXPERIENCE SURVEY

I value your feedback on this course. Towards the end of term you will have the opportunity to complete a confidential course experience survey (CES) regarding your learning experience. The survey is vital to providing feedback to me regarding the course and my teaching, as well as to help the department improve the overall program for students in the future. When it is time for you to complete the survey, you will receive an email inviting you to do so. If you do not receive an email invitation, you can go directly to your CES dashboard at ces.uvic.ca. You will need to use your UVic NetLink ID to access the survey, which can be done on your laptop, tablet or mobile device. I will remind you nearer the time but please be thinking about this important activity, especially the following three questions, during the course.

1. What strengths did your **instructor** demonstrate that helped you learn in this course?
2. Please provide specific suggestions as to how the **instructor** could have helped you learn more effectively.
3. Please provide specific suggestions as to how this **course** could be improved.

RESOURCES

1. [Academic Year Important Dates](#)
2. [Computer Help Desk](#)
3. [Equity and Human Rights Office](#)
4. [HINF Library](#)
5. [HSD Indigenous Student Support](#)
6. [Indigenous Academic & Community Engagement](#)
7. [Learning and Teaching Support and Innovation](#)
8. [Math and Stats Assistance Centre](#)
9. [Office of the Ombudsperson](#)
10. [Office of Student Life](#)
11. [Sexualized Violence Prevention & Support](#)
12. [Student Mental Health](#)
13. [UVic Libraries](#)
14. [Well-being](#)

ONLINE LEARNING TECHNOLOGIES

Instructors use a variety of educational technology in courses including internet-based technologies or web-based applications, cloud services and social media. The use of technology is part of your engagement at the University. Some of these learning tools may collect, use and/or disclose your personal information and store or access that information outside of Canada.

UVic cannot require students to disclose personal information to technologies or organizations which may store information on servers located outside of Canada because disclosure of personal information to vendors, systems or services storing or accessing that personal information outside of Canada is restricted by section 30.1 of BC's *Freedom of Information and Protection of Privacy Act* (FIPPA). Personal information is information about an identifiable individual; for example, your name or your email address.

As of the creation of this course, the following educational technologies, which stores or accesses your personal information outside Canada, are required for this course:

- Zoom if/when necessary
- YouTube (instructional videos)

I will make you aware if this list changes.

With respect to the technologies listed above, if you are not comfortable with your personal information being stored outside of Canada, please speak to me within the first week of class. Otherwise, by continuing in this course, you agree to the use of the educational technology in the course and the storage of personal information outside of Canada.

WELLNESS SUPPORTS FOR STUDENTS

A note to remind you to take care of yourself. Diminished mental health can interfere with optimal academic performance. Do your best to engage in self-care and maintain a healthy lifestyle this semester. This will help you achieve your goals and cope with stress. All of us benefit from support. The [UVic Student Wellness Centre](#) provides cost-free and confidential mental health services to help you manage personal challenges that impact your emotional or academic well-being.

HEALTH INFORMATION SCIENCE (HINF) AND FACULTY OF HUMAN & SOCIAL DEVELOPMENT (HSD) POLICIES

1. [HINF Undergraduate Academic Policies](#)
2. [HINF Academic Regulations](#)
3. [HSD Guidelines for Professional Conduct](#)

UNIVERSITY ACADEMIC POLICIES

1. [Academic Concessions](#)
2. [Academic Integrity including Unauthorized Use of an Editor](#) - Academic Integrity Violations include, but are not limited to: plagiarism (e.g., submitting someone else's work as your own, not citing your sources), unauthorized use of an editor, submitting the same work more than once, falsifying materials, cheating (e.g., having unauthorized materials such as a phone or notes during a test), and helping others cheat. We encourage you to review the [University's Policy on Academic Integrity](#) and we expect you to adhere to this policy in its entirety.
3. [Privacy and Access to Information Office](#)
4. [Accessible Learning](#) – The University of Victoria is committed to creating a learning experience that is as accessible as possible. If you are registered with the Centre for Accessible Learning (CAL) and anticipate or experience any barriers to learning in this course, please feel welcome to discuss your concerns with me. If you have a disability or chronic health condition, or think you may have a disability, you may also want to meet with an advisor at the Centre for Accessible Learning <https://www.uvic.ca/services/cal/>
5. [Integrity Matters](#)
6. [UVic Grading Scale & Review Process](#)

CENTRE FOR ACADEMIC COMMUNICATION

At the [Centre for Academic Communication \(CAC\)](#), we offer online one-on-one tutorials, workshops, and more. Our free services are available to all University of Victoria students. We are here to support you with reading, writing, speaking, understanding academic expectations, and other aspects of academic communication. For details see: <https://onlineacademiccommunity.uvic.ca/writingresources/>

DISCRIMINATION AND HARASSMENT

Discrimination and Harassment are prohibited at the University of Victoria. Members of the University Community have the right to work, study and participate in activities at the university in an environment free of Discrimination and Harassment. Eligible WorkSafeBC claimants also have a right to an environment free of workplace bullying or harassment as it is defined by regulations pursuant to the British Columbia Workers' Compensation Act. Please refer to University of Victoria discrimination and harassment policy at: https://www.uvic.ca/universitysecretary/assets/docs/policies/GV0205_1150_.pdf and WSBC bullying and harassment policies at: https://www.uvic.ca/ohse/assets/docs/BH_policies_Nov1_2013.pdf

SEXUALIZED VIOLENCE PREVENTION AND RESPONSE AT UVIC

UVic takes sexualized violence seriously, and has raised the bar for what is considered acceptable behaviour. We encourage students to learn more about how the university defines sexualized violence and its overall approach by visiting www.uvic.ca/svp. If you or someone you know has been impacted by sexualized violence and needs information, advice, and/or support please contact the sexualized violence resource office in Equity

and Human Rights (EQHR). Whether or not you have been directly impacted, if you want to take part in the important prevention work taking place on campus, you can also reach out: Where: Sexualized violence resource office in EQHR, Sedgewick C119 Phone: 250.721.8021 Email: svpcordinator@uvic.ca Web: www.uvic.ca/svp

UNIVERSITY OF VICTORIA STUDENTS' SOCIETY (UVSS)

The [UVSS](http://uvss.ca) is a social justice based non-profit run by students, for students and is entirely separate from UVic. As an undergrad student, you are already a member! We work on issues affecting students such as affordability, public transit, sexualized violence, sustainability, student employment, and much more. We fund clubs and course unions, and have several advocacy groups. We also have a Food Bank and Free Store, a Peer Support Centre, and run your health and dental plan. We are here to support you, so please reach out to us at uvss.ca!

FAIR DEALING STATEMENT

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COPYRIGHT STATEMENT

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TRANSCRIPTION & CAPTIONING STATEMENT

Auto-generated transcription and captioning is enabled in this course. Please be aware that automated transcription and captioning is at best 70-90% accurate and by nature will include error. This depends on the subject matter, speaker, audio quality etc. Words prone to error include specialized terminology and proper names. Students are asked to refer to the audio feed for clarification of any errors. If you find transcription or captioning that is offensive, please contact your instructor and/or teaching assistant so that they are aware. If you require captions as part of an academic accommodation, please contact [CAL](#).

ONLINE CONDUCT STATEMENT

The University of Victoria is committed to promoting critical academic discourse while providing a respectful and supportive learning environment. All members of the

university community have the right to this experience, and the responsibility to help create, such an environment. The University will not tolerate racism, sexualized violence, or any form of discrimination, bullying or harassment. Please be advised that by logging into UVic's learning systems and interacting with online resources you are engaging in a university activity. All interactions within this environment are subject to the university expectations and policies. Any concerns about student conduct, may be reviewed and responded to in accordance with the appropriate university policy. To report concerns about online student conduct: onlineconduct@uvic.ca.

CLASS RECORDING (ECHO360)

Be aware that sessions in this course may be recorded to allow students who are not able to attend to watch later. The recording will be posted in Brightspace. Students who have privacy concerns can contact me and will have the option to limit their personal information shared in the recording. If you have other questions or concerns regarding class recording and privacy please contact privacyinfo@uvic.ca.

DISCLAIMER

The above schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances.

APPENDIX - 1: SCHEDULE AT A GLANCE

Schedule at Glance	
Date	Topic
September 6	Chapter 1 - Introduction to epidemiology
September 12	Chapter 2 - The dynamics of disease transmission
September 13	Chapter 3 - Measuring the occurrence of disease - Morbidity
September 19	Chapter 4 - Measuring the occurrence of disease - Mortality
September 20	Chapter 5 - Assessing the validity and reliability of diagnostic and screening tests
September 26	Chapter 6 - The natural history of disease - ways of expressing prognosis
September 27	Chapter 7 - Observational studies
October 3	Chapter 8 - Cohort Studies
October 4	Case Study for preparation for Assignment 1 - Description of Disease
October 10	Chapter 9 - Comparing Cohort and Case-Control Studies
October 11	Chapter 10 - Assessing the efficacy of preventive and therapeutic measures - Randomized trials (1)
October 17	Chapter 11 - Randomized trials: Some further issues
October 18	Chapter 12 - Estimating Risk: Is there an Association
October 24	Chapter 13 - More on risk - estimating the potential for prevention
October 25	Chapter 14 - From association to causation - deriving inferences from epidemiologic studies
October 31	Chapter 15 - More on causal inferences - bias, confounding, and interaction
November 1	Chapter 16 - Identifying the roles of genetic and environmental factors in disease causation
November 7	Discussion for Assignment 2 - Evaluation of Evidence and Discussion for Term Paper topic selection
November 8	Chapter 17 - Using Epidemiology to Evaluate Health Service
November 14	Reading Break
November 15	Reading Break
November 21	Chapter 18 - The Epidemiologic Approach to Evaluating Screening Programs
November 22	Chapter 19 - Epidemiology and Public Policy
November 28	Chapter 20 - Ethical and Professional Issues in Epidemiology
November 29	Discussion for Term Paper Preparation

APPENDIX - 2: GRADING RUBRIC

Assignment - Disease Status Description

Objective: To assess student's knowledge of the basic epidemiological concepts, such as disease, disease transmission, rates, diagnostic test assessment and interpretation and prognosis. The assignment is designed to encourage use of all these concepts in a particular disease. This year the disease to work is **Opioid Dependency and Toxic Drug Crisis**.

This assignment is due on **October 10, 2023**. This assignment can be completed in groups of 2. Groups are not mandatory. The recommended assignment length is maximum 4 single spaced pages (figures, graphs and appendices are not included within page count) and written with type face of Calibri 11 or equivalent. In broad headings the assignment will include:

1. What is the trajectory of this condition (if infection, explain transmission) What does the evidence show?
2. What are the rates of morbidity and mortality? How are they measured? What do they indicate and what are the deficiencies of measurement?
3. What is the prognosis of the disease? What are the long term effects?
4. Is there a diagnostic test? What is the reliability and validity of the diagnostic test? How was it measured? Does testing strategy align well with the reliability and validity of the test?

Marking topic	Percent of total
Disease overview: Overview of the disease and disease management (e.g. definition of concepts, primary/secondary transmission, incubation period, contact tracing, herd immunity,	15%
Disease overview: Appropriate use and interpretation of concepts of transmission, rates, indicators of morbidity, mortality and prognosis	40%
Diagnostic test overview: Appropriate interpretation of concepts of sensitivity and specificity and selection of testing strategy	20%
Deductions based on the review	15%
Structure of the paper: logical flow, headings, referencing, language, etc	10%

Assignment - Evidence Review

Objective: To assess student's knowledge of development of evidence, establishing causality, assessing strength of evidence provided and validity and reliability of a study. The assignment is designed to apply these concepts on three selected articles on a particular topic.

This assignment is due on **November 14, 2023**. This assignment can be completed in groups of 2. Groups are not mandatory. The recommended length of the assignment is 4 single spaced pages (figures, graphs and appendices are not included within page count) and written with type face of Calibri 11 or equivalent.. The due date will be announced through Brightspaces. Three different studies (a randomized control study, a cohort study and a case control study) will be provided for the assignment. In broad headings the assignment will include:

1. What primary and secondary end points are selected?
2. What are the study designs? Do the research abide by the study design principles? What are the deviations from study designs and how did the authors accommodate/resolve these deviations?
3. How did the study group selected? What types of selection bias can you observe?
4. What other biases can be identified in the study, during the execution and the analysis of data stages?
5. What confounding factors, interactions were considered? Should there be others?
6. How was the causality established? What type of causality was this? Were the indicators used clearly established a strength of association? Considering the BC population, what is the size of the opportunity for prevention?
7. What is your assessment of the effectiveness of each study in establishing causality?

Marking topic	Percent of total
Study overviews: Prior evidence, end points, intended study designs	10%
Study design: type of study, selection of the study group, estimation of study group size, possible biases in study group selection, randomization and stratification	15%
Conducting study: data collection methods, biases and deficiencies in data collection and analysis, remedies used and effectiveness of remedies	20%
Confounding and interactions: declared and undeclared confounding and interactions. Strategies used to analyze and interpret.	20%
Assessment of causality: Type of causality, estimate of strength of causality, analysis of the characteristics of causality	20%
Discussion and conclusion	15%

Term Paper:

Term paper will be a reflection of all learnings in the Course. It will cover all learning objectives and integrated with Lab activities. Students can work in groups. Expected group size is 2 individuals.

The assignment does not have a page restriction and written with type face of Calibri 11 or equivalent.. The due date is **December 11, 2023**. Appendices includes data analysis results (#4.1 below), literature analysis (#4.2 below), and screening tool analysis (#6 below) and any other information that is necessary for the term project but not critical to put into the report body. It is mandatory to provide the query and results of the query as an appendix to the assignment. an automatic deduction of 20% will be done if the query is not provided.

The assignment will include:

1. Problem identification and problem definition: Problem identification and definition presents the topic the students selected and why they have selected this problem. Problem identification generally provides some summary from literature regarding the importance of the problem and also summarizes the current status. As this is not a research paper, this is not required to be exhaustive but the objective is to depict an understanding and the need for focusing on this topic.

2. Primary and secondary objectives: For any paper, the objectives are critical. Ideally the objectives of the paper are defined before the work started. This will allow the review of whether the objectives were achieved at the end of the work in discussions. If the objectives were to be redefined at the end of the study, this would weaken the strength of the work.

3. Methodology: A short methodology section is required. The methodology section needs to summarize the methodology used for data analysis and also literature search.

4. Findings: There are two types of findings: Data analysis findings and Literature review findings

4.1. Data analysis finding present the results of the data analysis. Generally it is a summary of the findings rather than a presentation of the whole analysis. It only includes the important tables or graphs to aid the reader in understanding the results. Graphs and tables inserted in the text are not included in the page count. The rest of the data analysis, complete findings is an appendix to the document. Data analysis is aligned with the objectives of the study.

4.2. Literature review: This section of the findings presents the findings from the literature. Literature selected must be relevant to the objectives of the study. As the volume of the literature would be quite large when a very broad topic was selected, it is advisable to focus the term paper into a better defined and more specific area. Again the objective here is not to regurgitate the literature found but provide a short and effective summary that is relevant to the objectives of the term paper. Literature review must include any screening tools relevant to the topic of investigation.

Findings must consider the type of measurement used by data analysis and the literature (e.g. incidence rate, odds, absolute risk, relative risk, attributable risk, etc.)

5. Discussion and Conclusions: Discussion includes a careful look at the internal and external validity of a study and study's ability to achieve objectives. Contrasting and comparing the objectives to findings, term paper's ability to contribute to causality discussion, discussion on any biases, possible confounding factors and interactions in data analysis. A discussion on why the findings in data analysis might be different than the findings in literature. Any screening tools used (found) must also be tested based on their ability to achieve early detection of the condition (its sensitivity and specificity). Conclusions (which is no longer than a paragraph) summarize what can be deducted from the overall analysis and what would be the next steps for improvement. In summary, the discussion and conclusions uses the analysis (data and literature) to reach a balanced conclusion.

Appendices: There is no limit as to how long the appendices are. Appendices provide the detail that is needed for readers to understand the details of the paper.

Marking topic	Percent of total
Problem definition: Research supporting the selection of the problem, description of the problem. Identification of primary and secondary endpoints.	20%
Methodology: explanation of methodology used, description of data source, and fields, statistical methods used.	20%
Finding: results of the data analysis. Relevance of literature search to the topic worked, summary of findings from the literature	20%
Discussion and conclusions: Review of internal and external validity of the term paper. Comparing and contrasting the term paper findings against the literature .	30%
Structure of the paper: logical flow, headings, referencing, language, etc	10%