Queen's University
School of Kinesiology and Health Studies

Course Name: **HLTH 323/3.0** Epidemiology	**Course Instructor:** Dr. Ian Janssen	**Contact Hours:** Lectures: 1 x 1.5 hrs / 12 weeks
		Prerequisite: (KNPE 251/3.0 or STAT_Options) and HLTH 252/3.0. Level 3 or above in a HLTH or KINE plan. Limited spaces are available to students in the LISC(H) and BCHM(H) Plans level 3 or above.
		Exclusion: May not be taken with or after EPID 301/3.0.

Course Description:

The course offers epidemiological ways of understanding threats to population health. Such threats may include the history of colonialism, inequitable access to public goods, healthcare, education, housing, clean water, etc., wealth gaps, and intrapersonal, interpersonal, institutional, and systemic mechanisms that organize the distribution of power and resources differentially across lines of race, gender, class, sexual orientation, gender expression, and other dimensions of individual and group identity.

The course covers basic epidemiology principles, concepts, and procedures useful in the surveillance and investigation of people's health: methods involved in researching the distribution and determinants of health in populations, core measurement issues (e.g., rates, standardization, association), interpretation issues (e.g., bias, confounding, interaction), and epidemiological approaches to study design including descriptive, observational (cross-sectional, cohort, case-control), and experimental (randomized controlled trials, community trials). The course also introduces learners to critical epidemiology and population health research while exploring the ways to investigate structural and fundamental determinants of health using epidemiologic methods.

Course Notes:

<u>Required textbook</u>

Webb P, Bain C, Page A. Essential epidemiology: An introduction for students and health professionals (4th ed), Cambridge University Press, 2020

1.5 hours/week of lecture time is spent in active learning classroom do group activities and problem solving.

Learning Outcomes:

- Define and explain the main terms, concepts, and measures used in epidemiology
- Calculate and interpret the main measures used in descriptive and analytic studies (e.g., rates, estimates of association)
- Recognize and understand the different study designs used in epidemiology research, their strengths and

Course Evaluation:

Test #1	30%
Test #2	30%
Group work	30%
Peer evaluation	10%

weaknesses, and when they should be applied • Identify and evaluate the main sources of error related to interpreting epidemiology findings (e.g., chance, bias, confounding) • Recognize practical applications of epidemiology research and appreciate how epidemiology research is used to influence health policy and practice	

Course Outline

1. Introduction to epidemiology (what is it and what it offers to public health)	11. Outbreaks and epidemics
2. Measuring disease frequency	12. Disease prevention in public health
3. Descriptive epidemiology	13. Screening and disease detection
4. Main study designs used in epidemiological research	14. Translating epidemiological research in practice
5. Linking exposures (risk and protective factors) with health outcomes	15. Reading epidemiological papers
6. The role of chance in epidemiological research	
7. Main sources of error in epidemiological research	
8. The challenge of confounding in observational epidemiological studies	
9. Judging association and causation	
10.Collecting health-related data for public health action	