

PUBLIC HEALTH SCIENCES

All courses are 3.0 credit units, except EPID 899 and 999 which are 6.0 credit units.

Mandatory M.Sc. Courses offered by the Department

EPID 801 Introduction to Epidemiology

This course provides foundational knowledge on how human evidence relevant to public health is created, assessed, and used, with a focus on epidemiologic methods. Topics include measures of health status; risk factors and associations with health outcomes; study design including descriptive, analytical, and intervention approaches; validity issues; critical appraisal; assessment of causation; ethics; and application of epidemiologic evidence in public health decisions. Three term-hours. Fall, every year. K. Aronson.

EPID 804 Intermediate Epidemiology

This course deals with advanced methods and issues in the design, conduct, analysis and interpretation of epidemiologic studies. The content focuses on observational study design and analysis and builds on epidemiologic principles presented in EPID 801. Data analysis will emphasize the application and interpretation of statistical concepts in epidemiologic research. Three term-hours, Winter, every year W. King.

PREREQUISITE: EPID 801.

EPID 821 Essentials of Biostatistics

This course provides an overview of basic statistical concepts, principles, and techniques essential for public health and epidemiologic research. This course covers both descriptive and inferential statistics. Topics covered include measures of association, t-tests, regression, chi-square tests, analysis of variance, and some nonparametric methods. Emphasis is on understanding and interpreting fundamental statistical analyses from health research. Three term-hours, Fall, every year Z. Lu. SAS Lab, Fall, A. Day/P. Norman

EPID 822 Applied Regression Analysis

This course deals with the commonly used regression methods proven useful in health services research and the epidemiologic analysis of the relationship between traits, exposures or treatments, and diseases or other medical outcomes. The course emphasizes the statistical modeling approach with topics including multiple regression, analysis of variance and covariance, reliability of measurements, analysis of categorical data, logistic regression, Poisson regression and survival analysis. This course includes a compulsory SAS Programming component. Three term-hours, Winter, every year Z. Lu , C. O'Callaghan, P. Peng. SAS Lab Winter, A. Day/P. Norman

PREREQUISITE: EPID 821 (or permission of instructor for Biostatistics students).

EPID 899 Master's Thesis Research

Mandatory M.Sc. Collaborative Biostatistics Courses

- EPID 801
- EPID 804
- MATH 896 (for students registered in Mathematics and Statistics)
- STAT 853 (for students registered in Public Health Sciences)
- STAT 862 or EPID 822 (for students registered in Public Health Sciences)
- STAT 886
- AND

EPID 823 Advanced Methods in Biostatistics

An advanced course in the theoretical issues and analytical practices in epidemiology, and biostatistics. Topics may vary but major topics include analysis of longitudinal and survival data using various regression models; Techniques and strategies for regression modeling; Novel analytic approaches in epidemiology; multivariate analysis methods including discriminant analysis, principal components and factor analysis. Three term-hours Winter every year. D. Tu / K. Ding/ W. Tu.

PREREQUISITE: EPID 821 + knowledge of basic statistical modeling techniques deemed adequate by the Instructors.

EPID 888 Master's Practicum

Under the guidance of the supervisor, students will carry out a practicum project in a health research group/site and practice bio statistical methods and data analysis or conduct methodology research in a bio statistical project. Students will summarize the results of the project in a written report that will be reviewed and orally defended.

Mandatory M.P.H. Courses Offered by the Department

IMPORTANT: Please NOTE EPID 801, EPID 802, EPID 803, EPID 805, EPID 806 and EPID 821 are all core courses for the 12-month accelerated program.

- EPID 801
- EPID 821, AND



EPID 802 Foundations in Public Health

This course provides an overview of theoretical and conceptual foundations of public health. It examines the social determinants of health and population health approaches to promote and protect health. It instils in students an understanding of the historical achievements, core values and ethical frameworks that guide public health action. Three term-hours. Fall every year. D. Hunter.

EPID 803 The Canadian Health System

The aim of this introductory course is to describe how health services are organized and delivered in Canada. Students who take the course will: 1) understand the inputs, delivery and outputs of the Canadian health system; 2) recognize and explain the factors that influence change in this system; and 3) consider current health policy issues in Canada. Three term-hours. Winter every year. S. Buttemer

EPID 805 Leading Evidence Informed Action

This course applies health promotion theories to the analysis and development of evidence based public health actions. Approaches to leading change are applied at the levels of individuals, organizations, community, society. Examples are drawn from programmatic and functional areas of public health practice to exemplify development of a multilevel and "health in all policies" approach to complex problems. Three term -hours. Fall every year. S. Buttemer

EPID 806 Applied Research Methods for Program Planning and Evaluation

This course provides an overview of social research methods and tools to assist students to complete the "evidence to action" program planning and evaluation cycle. Topics covered include defining the issue, using surveillance data, engaging the community, conducting a stakeholder analysis, survey methods, handling qualitative data, building logic models, choosing indicators, communicating the results, taking action. Three term-hours. Winter. Instructor TBD

EPID 886 Public Health Professional Development

This course assists students to lay the foundation for continuing professional development in public health practice. Students are introduced to the personal learning portfolio and coached to chart their progress in developing skills and competencies through a combination of workshops, seminars, and online learning modules. 1.5 term hours per week. Fall and Winter terms. B. Melles

EPID 887 Practicum Placement

The 400 – hour practicum placement provides MPH students with an opportunity to work in the public health field and contribute to evidence-informed public health practice. Through the practicum students demonstrate and enhance

the knowledge, skills and attitudes they have learned from course work as well as reflect on and advance their career development. Placement activities and roles will vary according to the needs and interests of both host organization and the student. This course is graded on a PASS/FALL basis. Spring /Summer term. Coordinator: E. Weir.

PREREQUISITES: EPID 801, EPID 802, EPID 803, EPID 806, EPID 821, and EPID 886 (16-month students only), or approval from the Practicum Coordinator

Elective Courses offered by the Department

(NOTE THAT a course listed as core in one of the Department's three Master's programs may be taken as an elective in another of the programs if the student meets the course prerequisites.)

EPID 823

AND

EPID 807 Economic Evaluation of Healthcare Programs

This course is designed to allow students to become familiar with different types of economic evaluations in healthcare and when to employ particular types of economic evaluation. Topics covered will include; cost-effectiveness, cost-utility, cost-benefit, budget impact analyses, and policy decision-making. No prior economics background is required. Three term hours. Fall every year. A. Johnson.

EPID 810 Controlled Clinical Trials

This course will cover material relevant to the design and conduct of controlled clinical trials. Design topics will include methods used to achieve unbiased results with improved precision, such as adequate sample size, randomization, blinding, pre- and post-stratification, cross-over designs, placebos and the counting of relevant events. Attention will be given to the problems of conducting multi-centre clinical trials. Topics covered will include drafting of protocols, design of data forms, logistics of data flow, methods of follow-up, data management and quality control, periodic reporting, final data analysis and the production of final reports. Ethical issues and the role of randomized trials in clinical investigation will be discussed. Three term hours. Fall every year. H. Richardson.

EPID 815 Independent Study

EPID 817 Foundations of Cancer Control

This course is intended for graduate students, clinical fellows and postdoctoral fellows who are engaged or interested in cancer research. The course will focus on concepts and methodological issues central to the conduct of epidemiologic studies of cancer etiology and control. Topics

will include: an introduction to basic epidemiologic concepts; biologic and clinical concepts central to the investigation of cancer; study design; clinical epidemiology; molecular epidemiology; and cancer control and prevention. Not offered 2021-22.

EPID 819 Introduction to Clinical Epidemiology

This course will demonstrate the way in which epidemiological principles guide the practice of medicine and the design of clinical research. Topics will include how to select the correct design for a study that addresses a clinical question, how to evaluate the quality of clinical publications and research proposals, and how to prepare a clinical research proposal. Three term hours Winter every year. TBD
 PREREQUISITE EPID 804 or permission of instructor

EPID 828 Infectious Diseases

This course provides a foundation in infectious disease epidemiology. Principles and methods related to infectious disease biology, outbreak detection and investigation, and the methodological, analytical, and diagnostic tools are covered. Specific infectious diseases that pose contemporary challenges in public health and/or have national or global public health impact are discussed. Three term hours. Winter every year. S. Brogly.
 PREREQUISITE: EPID 801 or permission of the instructor.

EPID 829 Foundations of Global Health

Students will be exposed to various global health concepts and be trained to work through potential solutions in a public health context. The course will be taught through formal lecture, seminar and small group learning, and online modules. Topics may include health, public health, and development; Aboriginal health; health systems and policies; Canada's role in global health and social justice; and special populations. Three term hours. Fall every year. TBD

EPID 831 Chronic Disease Epidemiology

This course will provide an overview of the epidemiology of some of the leading non-infectious causes of morbidity and mortality in Canada and will highlight the key methodological considerations for the study of each disease or health problem. Three term hours. Winter every year, K. Aronson
 PREREQUISITES: EPID 801 & EPID 821 or equivalents with permission of course coordinator

EPID 832 Mental Health/Critical Inquiry

This course will provide students with in-depth substantive knowledge about the evolution of health issues that have shaped policy and mental health services. Three term hours. Winter. H. Stuart.

PREREQUISITES: EPID 801 or permission of course instructor

EPID 835 Environmental Public Health

This course provides students with a foundation for understanding, assessing and mediating environmental exposures. Methods for assessing and communicating about exposures, risks and standards in air, water, soil and food are introduced. Case studies of managing hazardous exposures are reviewed. Environmental health policy implications of global climate, energy use and disaster planning are explored. Three term hours. Fall every year. H. Richardson.
 PREREQUISITE: EPID 801, EPID 821 or equivalent, or permission of instructor.

EPID 836 Qualitative Health Research Methods

This course provides foundational instruction in qualitative research methodology for students in the public health sciences, including theoretical basis, study design, research ethics, sampling and recruitment, data collection, data analysis, and disseminating research findings. Topical areas may include ethnography, grounded theory, phenomenology, participatory research, and other areas. Winter every year. B. Stoner.

EPID 837 Health Services Research

This course introduces health services research methods as they are applied to routinely collected health data. It covers methodologic approaches for assessing healthcare effectiveness, quality, and access. The course also provides an introduction to the Ontario ICES data holdings and the conduct of health services research using those data. Three term hours. Fall every year. TBD

Mandatory Courses offered by the Department for Ph.D. Program

EPID 823

(NOTE: Ph.D. students who have already completed Advanced Methods in Biostatistics [EPID 823] as part of their M.Sc. program in Epidemiology at Queen's University may be exempt from this requirement)

AND

EPID 901 Advanced Epidemiology

This course provides in-depth integration of advanced concepts in epidemiology, with theory and examples, including causation and causal inference, study design and conduct, alternate designs, confounding, effect modification, internal and external validity, misclassification, source populations, statistical power and sample size, epidemiologic data analysis and interpretation, meta-analysis and selected specific research areas. This is an advanced course intended primarily for Ph.D. students. Sessions consist of lectures, seminars, student presentations and discussions. Three term-hours. Fall every year, W. King



PREREQUISITES: EPID 801, EPID 804, EPID 821 and EPID 822 or equivalent from other institutions.

EPID 902 Advanced Public Health Research

This course provides a conceptual and historic view of the Public Health Sciences, as well as a look at contemporary issues in Public Health research ethics, research methodology and knowledge translation. Guided each year by student interests and advanced training needs, the course delves into specific substantive public health research areas including for example: chronic disease, environmental health, infectious disease, injury and disability, maternal and child health, occupational health, humanitarian contexts, Indigenous health and/or health services research. Three term hours.

Fall every year, B. Stoner/H. Ouellette-Kuntz

Courses Offered outside the Department for M.Sc. and M.P.H. programs

Selected graduate courses from other Departments can be taken as electives upon permission of the Instructor, Program Director, Department and School of Graduate Studies.