

**City University of Hong Kong  
Course Syllabus**

**offered by Department of Infectious Diseases and Public Health  
with effect from Semester B of 2023 / 24**

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**Part I Course Overview**

**Course Title:** Infectious Disease Epidemiology

**Course Code:** PH8002 / PH6202

**Course Duration:** One semester

**Credit Units:** 3 credits

**Level:** R8

**Medium of Instruction:** English

**Medium of Assessment:** English

**Prerequisites:**  
*(Course Code and Title)* Nil

**Precursors:**  
*(Course Code and Title)* Nil

**Equivalent Courses:**  
*(Course Code and Title)* Nil

**Exclusive Courses:**  
*(Course Code and Title)* Nil

## Part II Course Details

### 1. Abstract

The emergence of infectious diseases affecting animals and humans is one of the most important and increasing threats for modern society, and that increase is strongly associated with economic development, globalisation and urbanisation. This course aims to provide postgraduate students with an introduction to the principles of infectious disease epidemiology, spatial analysis and mathematical modelling of infectious diseases.

### 2. Course Intended Learning Outcomes (CILOs)

No.	CILOs	Weighting	Discovery-enriched curriculum related learning outcomes		
			A1	A2	A3
1.	Demonstrate an understanding of the key epidemiological concepts associated with the spread of infectious diseases		✓	✓	
2.	Develop simple mathematical models of infectious disease spread		✓	✓	✓
3.	Perform descriptive and exploratory spatial analyses of infectious disease occurrence		✓	✓	✓
		100%			

A1: *Attitude*

*Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.*

A2: *Ability*

*Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to self-life problems.*

A3: *Accomplishments*

*Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.*

### 3. Teaching and Learning Activities (TLAs)

TLA	Brief Description	CILO No.				Hours/week
		1	2	3	4	
Lectures	Lectures will provide fundamental concepts and principles of infectious disease epidemiology, mathematical modelling and spatial analysis	✓	✓	✓	✓	
Hands-on practical tasks	Hands-on problem-based group activities will be conducted to facilitate conceptual understanding. These will be combined with take-home assignments.		✓	✓	✓	
Take-home assignments and reports	Students will be provided with take home assignments in conjunction with the in-class practical projects.		✓	✓	✓	Out of classroom

#### 4. Assessment Tasks/Activities (ATs)

Assessment Tasks/Activities	CILO No.				Weighting	Remarks
	1	2	3	4		
Continuous Assessment: 70%						
Classroom assessment	✓	✓	✓	✓	40%	This assessment will be based on the student's class participation
Assignments and reports		✓	✓	✓	40%	Tasks are designed to evaluate the understanding of different concepts learned in this course and the ability of applying them to realistic veterinary infectious disease problems.
Group Presentation		✓	✓	✓	20%	The tasks are designed to evaluate the students' ability to understand relevant research papers on infectious disease epidemiology.
					100%	

## 5. Assessment Rubrics

Applicable to students admitted in Semester A 2022/23 and thereafter

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B)	Marginal (B-, C+, C)	Failure (F)
1. Classroom assessment	The comprehension of the contents in both the theoretical and practical parts.	High	Significant	Basic	Not reaching basic levels
2. Assignments	The ability to apply the techniques/tools learned/recommended in this course.	High	Significant	Basic	Not reaching basic levels
3. Group Presentation	The ability to understand relevant research papers on infectious disease epidemiology.	High	Significant	Basic	Not reaching basic levels

Applicable to students admitted before Semester A 2022/23

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
1. Classroom assessment	The comprehension of the contents in both the theoretical and practical parts.	High	Significant	Moderate	Basic	Not reaching basic levels
2. Assignments	The ability to apply the techniques/tools learned/recommended in this course.	High	Significant	Moderate	Basic	Not reaching basic levels
3. Group Presentation	The ability to understand relevant research papers on infectious disease epidemiology.	High	Significant	Moderate	Basic	Not reaching basic levels

## Part III Other Information

### 1. Keyword Syllabus

epidemiology; dynamic disease modelling; mathematical modelling; infectious disease epidemiology; descriptive spatial analysis; exploratory spatial analysis

### 2. Reading List

#### 2.1 Compulsory Readings

1.	Pfeiffer,D.U. (2010): Ch. 1 Introduction and Ch. 2 General epidemiological concepts. In Pfeiffer, D.U.: Introduction to Veterinary Epidemiology. Wiley-Blackwell. 13-32. (out of print but copyright has been returned to the author and the text is therefore now available for free download <a href="https://www.researchgate.net/publication/305279557_Introduction_to_Veterinary_Epidemiology?channel=doi&amp;linkId=5786613d08aef321de2c66c6&amp;showFulltext=true">here</a> ) <a href="https://www.researchgate.net/publication/305279557_Introduction_to_Veterinary_Epidemiology?channel=doi&amp;linkId=5786613d08aef321de2c66c6&amp;showFulltext=true">https://www.researchgate.net/publication/305279557_Introduction_to_Veterinary_Epidemiology?channel=doi&amp;linkId=5786613d08aef321de2c66c6&amp;showFulltext=true</a> Or <a href="https://ebookcentral.proquest.com/lib/cityuhk/detail.action?docID=707905">https://ebookcentral.proquest.com/lib/cityuhk/detail.action?docID=707905</a>
2.	Dohoo, W. Martin and H. Stryhn (2012): Introduction and causal concepts. Chapter 1. In I.R. Dohoo, W. Martin and H. Stryhn (eds): Methods in epidemiologic research. AVC Inc., Charlottetown, Prince Edward Island, Canada. 1-34 (PDF file can be downloaded from <a href="https://projects.upei.ca/mer/">https://projects.upei.ca/mer/</a> )
3.	Medley,G. and Dohoo,I. (2012): Concepts of infectious disease epidemiology. Chapter 25. In I.R. Dohoo, W. Martin and H. Stryhn (eds): Methods in epidemiologic research. AVC Inc., Charlottetown, Prince Edward Island, Canada. 753-778 (PDF file can be downloaded from <a href="https://projects.upei.ca/mer/">https://projects.upei.ca/mer/</a> )
4.	Sanchez,J. (2012): Analysis of spatial data. Introduction and visualization. Chapter 25. In I.R. Dohoo, W. Martin and H. Stryhn (eds): Methods in epidemiologic research. AVC Inc., Charlottetown, Prince Edward Island, Canada. 701-716 (PDF file can be downloaded from <a href="https://projects.upei.ca/mer/">https://projects.upei.ca/mer/</a> )
5.	Pfeiffer,D.U. (2012): Analysis of spatial data. Chapter 26. In I.R. Dohoo, W. Martin and H. Stryhn (eds): Methods in epidemiologic research. AVC Inc., Charlottetown, Prince Edward Island, Canada. 717-752 (PDF file can be downloaded from <a href="https://projects.upei.ca/mer/">https://projects.upei.ca/mer/</a> )

#### 2.2 Additional Readings

1.	Pfeiffer,D.U. (2010): Introduction to Veterinary Epidemiology. Wiley-Blackwell. 132pp. (out of print but copyright has been returned to the author and the text is therefore now available for free download <a href="https://www.researchgate.net/publication/305279557_Introduction_to_Veterinary_Epidemiology?channel=doi&amp;linkId=5786613d08aef321de2c66c6&amp;showFulltext=true">here</a> ) <a href="https://www.researchgate.net/publication/305279557_Introduction_to_Veterinary_Epidemiology?channel=doi&amp;linkId=5786613d08aef321de2c66c6&amp;showFulltext=true">https://www.researchgate.net/publication/305279557_Introduction_to_Veterinary_Epidemiology?channel=doi&amp;linkId=5786613d08aef321de2c66c6&amp;showFulltext=true</a> Or <a href="https://ebookcentral.proquest.com/lib/cityuhk/detail.action?docID=707905">https://ebookcentral.proquest.com/lib/cityuhk/detail.action?docID=707905</a>
2.	Pfeiffer,D.U., Robinson,T.P., Stevenson,M., Stevens,K.B., Clements,A.C.A. and Rogers,D. (2008): Chapters 1 to 3 in Spatial analysis in epidemiology. Oxford University Press, Oxford, UK, 208pp. ( <a href="http://www.oxfordscholarship.com/view/10.1093/acprof:oso/9780198509882.001.0001/acprof-9780198509882">http://www.oxfordscholarship.com/view/10.1093/acprof:oso/9780198509882.001.0001/acprof-9780198509882</a> )