PH6202: INFECTIOUS DISEASE EPIDEMIOLOGY

Effective Term
Semester B 2025/26

Part I Course Overview

Course Title
Infectious Disease Epidemiology

Subject Code
PH - Infectious Diseases and Public Health
Course Number
6202

Academic Unit
Infectious Diseases and Public Health (PH)

College/School
Jockey Club College of Veterinary Medicine and Life Sciences (VM)

Course Duration
One Semester

Credit Units
3

Level
P5, P6 - Postgraduate Degree

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
Nil

Part II Course Details

Abstract
Students will be introduced to the principles of infectious disease epidemiology, spatial analysis, and mathematical modelling of infectious diseases in this course. The emergence of infectious diseases affecting animals and humans is one

of the most important and growing threat for modern society, strongly associated with economic development, globalisation and urbanisation.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Demonstrate an understanding of the key epidemiological concepts associated with the spread of infectious diseases		x	x	
2	Develop simple mathematical models of infectious disease spread		x	x	x
3	Perform descriptive and exploratory spatial analyses of infectious disease occurrence		x	x	x

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 real-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.

Learning and Teaching Activities (LTAs)

	LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures	Students will be introduced to the fundamental concepts and principles of infectious disease epidemiology, mathematical modelling, and spatial analysis through lectures.	1, 2, 3	
2	Hands-on practical tasks	Students will participate in hands-on, problem-based group activities to facilitate their conceptual understanding, which will be combined with individual tasks.	2, 3	
3	Self-Directed Projects and Synthesized Submissions	Students will be provided with individual tasks in conjunction with the in-class practical projects.	2, 3	Out of classroom

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Classroom assessment	1, 2, 3	40	Students will be assessed based on their class participation.	Yes
2	Assignments and reports	2, 3	40	Students will complete tasks designed to evaluate their mastery of the different concepts learned in this course and their ability to apply them to realistic veterinary infectious disease problems.	Yes
3	Group Presentation	2, 3	20	Students will complete tasks designed to evaluate their mastery of relevant research papers on infectious disease epidemiology.	Yes

Continuous Assessment (%)

100

Assessment Rubrics (AR)

Assessment Task

Classroom assessment (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

The assessment of the contents in both the theoretical and practical parts.

Excellent

(A+, A, A-) High

Good

(B+, B, B-) Significant

Fair

(C+, C, C-) Moderate

Marginal

(D) Basic

Failure

(F) Not reaching basic levels

Assessment Task
Assignments (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion
The application of the techniques/tools learned/recommended in this course.

Excellent
(A+, A, A-) High

Good
(B+, B, B-) Significant

Fair
(C+, C, C-) Moderate

Marginal
(D) Basic

Failure
(F) Not reaching basic levels

Assessment Task
Group Presentation (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion
The demonstration of the principles of infectious disease epidemiology.

Excellent
(A+, A, A-) High

Good
(B+, B, B-) Significant

Fair
(C+, C, C-) Moderate

Marginal
(D) Basic

Failure
(F) Not reaching basic levels

Assessment Task
Classroom assessment (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion
The assessment of the contents in both the theoretical and practical parts.

Excellent
(A+, A, A-) High

Good

(B+, B) Significant

Marginal
(B-, C+, C) Basic

Failure
(F) Not reaching basic levels

Assessment Task
Assignments (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion
The application of the techniques/tools learned/recommended in this course.

Excellent
(A+, A, A-) High

Good
(B+, B) Significant

Marginal
(B-, C+, C) Basic

Failure
(F) Not reaching basic levels

Assessment Task
Group Presentation (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion
The demonstration of the principles of infectious disease epidemiology.

Excellent
(A+, A, A-) High

Good
(B+, B) Significant

Marginal
(B-, C+, C) Basic

Failure
(F) Not reaching basic levels

Part III Other Information

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

Reading List

Compulsory Readings

	Title
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 here) https://www.researchgate.net/publication/305279557_Introduction_to_Veterinary_Epidemiology?channel=doi&linkId=5786613d08aef321de2c66c6&showFulltext=true Or https://ebookcentral.proquest.com/lib/cityuhk/detail.action?docID=707905
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 https://projects.upei.ca/mer/)
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 https://projects.upei.ca/mer/)
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 https://projects.upei.ca/mer/)
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 https://projects.upei.ca/mer/)

Additional Readings

	Title
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 here) https://www.researchgate.net/publication/305279557_Introduction_to_Veterinary_Epidemiology?channel=doi&linkId=5786613d08aef321de2c66c6&showFulltext=true Or https://ebookcentral.proquest.com/lib/cityuhk/detail.action?docID=707905
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. (http://www.oxfordscholarship.com/view/10.1093/acprof:oso/9780198509882.001.0001/acprof-978019 8509882)