

**City University of Hong Kong
Course Syllabus**

**Offered by the Department of Infectious Diseases and Public
Health with effect from Semester A 2020/2021**

Part I Course Overview

Course Title: Host, Agent and Defence

Course Code: VM 4000

Course Duration: 1 semester

Credit Units: 18 credits

Level: B4

Arts and Humanities

Proposed Area: Study of Societies, Social and Business Organizations

(for GE courses only)

Science and Technology

Medium of Instruction: English

Medium of Assessment: English

Prerequisites:
(Course Code and Title) Completion of Year 3 courses with C grade or above

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

(A 150-word description about the course)

This course teaches the interactions between the agents of infectious diseases and their hosts. It will provide an overview of the major bacteria, fungi, parasites and viruses that infect animals and give a summary of the diseases that these pathogens cause. It will cover the concept of health, mechanisms of normal and abnormal host defenses, environmental factors that affect the host agent relationship and the methods and procedures used to diagnose and control infectious disease. It is presented through lectures that cover the major bacterial, fungal, parasitic and viral pathogens of animals, and tutorial cases that guide integrated learning of concepts and facts in multiple disciplines. The disciplines that are presented in this course are immunology, epidemiology, microbiology including virology, bacteriology, mycology, parasitology, pathology, clinical pathology, laboratory medicine, and therapeutics. Learning is supported by laboratories, computer modules and group discussions. Students will acquire a competent, integrated understanding of events and interactions that cause infectious disease in individuals and populations; methods and procedures that are used to recognize and diagnose infectious disease; and preventative veterinary medicine including monitoring. The primary focus will be on cattle, horses, sheep, pigs, poultry, dogs, and cats..

2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs [#]	Weighting* (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	A2	A3
1.	Formulate hypotheses for a given clinical presentation of an infectious disease based on available information and similarity to diseases studied in various components of the course		✓	✓	
2.	Design and justify a diagnostic plan that includes appropriate tests and procedures in a rational sequence.		✓	✓	

	Explain the relationship between these test results and host/agent interactions				
3.	Design and justify a treatment plan using antimicrobial/anti-parasitic drugs, immunologic modulation, and supportive care.		✓	✓	✓
4.	Design and justify a plan for disease prevention and control that includes, as appropriate, immunization, antimicrobial/anti-parasitic drugs, and changes in husbandry practice.		✓	✓	✓
5.	Explain the pathogenesis of diseases, accounting for the biologic characteristics of the agent; environmental factors; and the events, interactions, and effects of the host inflammatory and immune responses		✓	✓	
6.	Determine and prioritize the pertinent facts of a case, Suggest and explain mechanisms that could account for or explain each fact or clinical sign.		✓	✓	
7.	Recognize and investigate disease outbreaks through analysis and interpretation of provided data.		✓	✓	
8.	Predict and interpret laboratory tests encountered in tutorial cases. Describe the principles and procedures of laboratory tests used to diagnose infectious disease and the source and handling of samples for the tests.		✓	✓	
9.	Recognize in smears and sections of tissue the components of an inflammatory exudate, classify the exudate, and relate the morphologic characteristics to probable duration and type of pathogen		✓	✓	
10.	Recognize organisms by their morphologic characteristics as presented in laboratories		✓	✓	
11.	Evaluate the importance of different host/agent interactions in relation to injury sustained by the host, and use this knowledge to predict the outcome of the interaction		✓	✓	
12.	Summarize a clinical case, in under 300 words or 5 minutes, including the pertinent facts, clinical signs, competing pathophysiological hypotheses, diagnostic strategy and rationale, and conclusions		✓	✓	
		100%			

** If weighting is assigned to CILOs, they should add up to 100%.*

Please specify the alignment of CILOs to the Gateway Education Programme Intended Learning outcomes

(PILOs) in Section A of Annex.

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)

(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No. 1 – 12	Hours/week (if applicable)
Lectures	Teaching and learning will be based on lectures of immunology, epidemiology, bacteriology, virology, parasitology, clinical pathology, systemic pathology, laboratory medicine and clinical pharmacology. Introducing and explaining effects of bacteria, parasites, fungi, and viruses infections in each organ system while comparatively analyzing individual host organ systems affected by pathogens. Introducing epidemiology, and clinical pharmacology theories and practices.	✓ (CILO No. 1 – 12)	3 hrs/wk
Problem-based learning Cases	PBL group sessions bring together, synthesize and delineate the major components of a specific infection case. Sessions integrate knowledge of the various disciplines to reach a differential diagnostic and a treatment plan.	✓ (CILO No. 1 – 12)	3 hrs/wk
Laboratories	Computer and actual diagnostic cases present the clinical features, gross and histologic lesions and pathogenetic mechanisms of diseases related to major cases. Laboratory wrap-up sessions summarize the important concepts covered in the laboratory and allows students a chance to ask questions. Learning exercises that are designed to complement lectures and tutorial case studies and reinforce learning of facts and concepts through hands-on performance of procedures, analysis of data, and interactive computer cases.	✓ (CILO No. 1 – 12)	2 hrs/wk
Minor Cases	Six interactive cases presented as computer modules. Cases present selected diseases in a format similar to that of tutorial cases. The topic of the minor case in a given week relates to ongoing or preceding major themes.	✓ (CILO No. 1 – 12)	3 hrs/wk
Infectious Disease Rounds	Each IDR is a large group discussion, as an integrated multidisciplinary exploration of the clinical aspects and biological mechanisms of a clinical case, complementary to the preceding tutorial case.	✓ (CILO No. 1 – 12)	2 hrs/wk
Clinical Lectures	Lecture series that gives students a clinical perspective on a disease or condition covered in lectures, tutorial and minor cases.	✓ (CILO No. 1 – 12)	2 hrs/wk
Study Tips	Optional lecture to give guidance on ways that can help the student organize, manage and integrate the information they are asked to learn.	✓ (CILO No. 1 – 12)	1 hr/wk (Optional)

4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No.												Weighting*	Remarks
	1	2	3	4	5	6	7	8	9	10	11	12		
Continuous Assessment												55%		
Weekly Quizzes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	16%	
PBL	✓	✓				✓						✓	7%	
Midterm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	28%	
Laboratory class reports		✓						✓	✓				4%	
Examinations: Final- (6 hours)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	45%	
												100%		

* The weightings should add up to 100%.

Students must pass each examination and the continuous assessment as a whole to pass the course as a whole

5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C)	Failure (F)
1. Quizzes	Ability to explain the immunology, epidemiology, bacteriology, virology, parasitology, clinical pathology, systemic pathology, laboratory medicine and clinical pharmacology applicable to various veterinary medical conditions and disease outbreaks.	Excellent in understanding, explaining, exploring and integrating the knowledge	Good in understanding, explaining, exploring and integrating the knowledge	Basic competence in understanding, explaining, exploring and integrating the knowledge	Poor in understanding, explaining, exploring and integrating the knowledge
2. Laboratory class reports	Ability to explain the immunology, epidemiology, bacteriology, virology, parasitology, clinical pathology, systemic pathology, laboratory medicine and clinical pharmacology applicable to various veterinary medical conditions and disease outbreaks following each laboratory class.	Excellent in understanding, explaining, exploring and integrating the knowledge	Good in understanding, explaining, exploring and integrating the knowledge	Basic competence in understanding, explaining, exploring and integrating the knowledge	Poor in understanding, explaining, exploring and integrating the knowledge
2. Examination	Ability to explain the immunology, epidemiology, bacteriology, virology, parasitology, clinical pathology, systemic pathology, laboratory medicine and clinical pharmacology applicable to various veterinary medical conditions and disease outbreaks.	Excellent in understanding, explaining, and integrating the knowledge in written format	Good in understanding, explaining, and integrating the knowledge in written format	Basic competence in understanding, explaining, and integrating the knowledge in written format	Poor in understanding, explaining, and integrating the knowledge in written format

Part III Other Information (more details can be provided separately in the teaching plan)

1. Keyword Syllabus

(An indication of the key topics of the course.)

Immunology, epidemiology, virology, bacteriology, mycology, pathology, clinical pathology, laboratory medicine, clinical pharmacology, Disease outbreaks, Diagnostic investigation, Laboratory medicine,

2. Reading List

2.1 Compulsory Readings

(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)

1.	Bowman, D. (2013). <i>Georgis' Parasitology for Veterinarians</i> . 10 th ed. St. Louis, MO: Saunders.
2.	Parham, P. (2013). <i>The Immune System</i> , 3rd ed. Garland Science.
3.	McVey, D.S. et al. (2013). <i>Veterinary Microbiology</i> . 3 rd ed, Wiley-Blackwell.
4.	Tizard I. R. (2012). <i>Veterinary Immunology: An Introduction</i> 9 th ed. Elsevier.
5.	Owen, J.A. et al. (2013). <i>Kuby Immunology</i> . 7 ^h ed. W. H. Freeman.
6.	Greene C.E. (2011). <i>Infectious Diseases of the Dog and Cat</i> . 4 th ed, Elsevier.
7.	Smith B.P. (2014). <i>Large Animal Internal Medicine</i> . 5 th ed. Elsevier.
8.	Ettinger S.J. and Feldman, E.C. (2010). <i>Textbook of Veterinary Internal Medicine: Diseases of the Dog and Cat</i> . 7 th ed. Saunders Elsevier.

2.2 Additional Readings

(Additional references for students to learn to expand their knowledge about the subject.)

1.	Acha, P. N. and Szyfres, B (1987). <i>Zoonotic and Communicable Diseases Common to Man and Animals</i> . PAHO.
2.	Radostits, O. M. et al. (2007). <i>Veterinary Medicine: a Textbook of the Diseases of Cattle, Sheep, Pigs and Horses</i> , 10 th ed. Saunders.
3.	Dawson, B. and Trapp, R. G. (2004). <i>Basic and Clinical Biostatistics</i> , 4 th ed. Lange.
4.	Fletcher, R. H. et al. (2012). <i>Clinical Epidemiology: The Essentials</i> , 5 th ed. Lippincott Williams & Wilkins.
5.	Gyles, C. J., et al. (2010). <i>Pathogenesis of Bacterial Infections in Animals</i> , 4 th ed. Wiley-Blackwell.
6.	Markey, B. et al. (2013). <i>Clinical Veterinary Microbiology</i> , 2 nd ed. Mosby.

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