

September 7th 2022

Micb 407/Path 437 – Viral Infections in Humans
Course Outline and Objectives.

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Course times: September – December; Wednesdays and Fridays 11:00 am – 12:30 pm

Place: FNH 40

Summary:

This course is an introduction to problem or case-based learning. The cases will cover both the pathogenesis and clinical features of selected viral diseases. Some of the cases will focus on viral persistence and latency, viral interaction with the immune system, oncogenesis or perinatal viral infections. Others will provide a clinical perspective of human viral disease including diagnosis, prevention and treatment. The course is designed to bridge the gap between molecular and medical virology. For students considering a career in medicine or in medical research involving viruses, it will provide a strong background on the nature of viruses and how they interact with the human host.

Goals:

1. To teach the basic concepts of viral pathogenesis, including routes of transmission, viral persistence and latency, viral interaction with the immune system, oncogenesis and perinatal infections.
2. To provide an introduction to selected human viral diseases, including their clinical presentations and methods of diagnosis, prevention and treatment.

Objectives:

By the successful completion of Micb 407/Path 437, students will be able to describe pathogenic mechanisms for acute, latent and persistent viral infections. In addition, they will be familiar with the clinical symptoms of numerous human viral diseases and will also be able to list diagnostic methods, preventive approaches and treatment modalities.

Approach:

There are two 90 min sessions per week – in general (as per the schedule) during the first session on each topic (the Friday session), there will be a 90 min didactic lecture covering the background information on the topic. A “case” or “scenario” will then be handed out together with a set of questions. We will discuss this homework during the next scheduled lecture.

Each student will then be expected to return on the second day (the following Wednesday) having prepared a short, written answer to each of the questions and ready to discuss the topic. Students will be expected to participate enthusiastically in the discussion and “solving” the case.

Part of the grade assessment is student participation, so attendance during the class time will be essential.

The lecturer may provide handouts for the lectures or refer to published papers. In addition, the students’ written answers to the questions on each topic are expected to serve as study notes. The students will be provided with a few references/ book chapters as a starting point for their research on each topic but are expected to find additional references on their own.

Assessment:

Students will be evaluated in three ways:

1. They will be assessed for their written answers to the weekly cases(homework) (10 marks each) as well as their participation in the group discussions (50% of the mark) –attendance during the live Zoom class meeting will be essential.
2. Student Presentations will be held, where each student gets an opportunity to present a virological topic of their own choosing (and approved by either lead instructor by October 28th). Students will present orally (10 minutes) followed by a 5-minute discussion. These talks will run over the last 7 lecture times (25% of the mark).
3. Final examination: a take-home written examination consisting of 4-6 questions in a format similar to the weekly sessions, namely a case presentation and a deductive short answer based on the case. Exams will be passed out by the last day of class, December 7th and are due by December 19th (25% of the mark).

Teaching Aids and Texts

There is no course textbook but the students may wish to use the following textbooks as references.

- Human Virology (4th edition, paperback) Leslie Collier, John Oxford and Paul Kellam. Oxford University press 2011
- Principles of Virology (3rd edition): By S. J. Flint, L. W. Enquist, V. R. Racaniello, and A. M. Skalka, ASM 2009
- Principles of Molecular Virology, 4th edition by A.J. Cann, Academic Press, 2005
- Understanding Viruses by Teri Shors. Jones and Bartlett Publishers 2008
- Introduction to Modern Virology 6th ed by N.J. Dimmock, A. Easton, K. Leppard.. Wiley-Blackwell 2007
- Field's Virology. 6th edition David M. Knipe, PhD; Peter M. Howley, MD; Diane E. Griffin, MD, PhD; Robert A. Lamb, PhD, ScD; Malcolm A. Martin, MD; Bernard Roizman, ScD; Stephen E. Straus, MD Raven Press 2007
- Principles and Practice of Clinical Virology (6th edition) A.J. Zuckerman (au) and editors J.E. Banatvala, P. Griffiths, B. Schoub, P. Mortimer. Wiley 2009
- Clinical and Diagnostic Virology by G. Kudesia and T.Wreghitt (Cambridge Clinical Guides) 2009
- How Pathogenic Viruses Work by L. Sompayrac. Published by Jones and Bartlett 2002.