

**UNIVERSITY OF GUELPH
DEPARTMENT OF PATHOBIOLOGY**

MICR*4430, MEDICAL VIROLOGY
Winter Semester 2013

COORDINATOR: Dr. Sarah Wootton
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PREREQUISITE: World of Viruses (MICR*3330)

LECTURE LOCATION AND TIME: PAHL 1810
Tuesday and Thursday 8:30-9:50 am

COURSE DESCRIPTION

This course is designed to present an overview of the major viruses causing important diseases in humans and animals. The course focuses on the molecular mechanisms of viral pathogenesis, determinants of viral virulence and the host response to infections. Diagnosis of viral infections, vaccines and controls of viral infections are also discussed.

The first part of the course will cover the basic principles and concepts used in the study of viral diseases, modern diagnostic methods and recent advances in the application of molecular virology to the development of recombinant vaccines and other means to combat viral diseases. The second half of the course will include material on the individual diseases and causative viruses.

By the end of the course, the students will appreciate that viruses are not merely disease-causing agents, but are also extremely useful molecular tools in many areas of modern medicine.

REFERENCES

The following books are reserved in the library:

Fields Virology, Volumes 1 and 2: 2007. 5th edition. Eds. in Chief David M Knipe and Peter M Howley, Wolters Kluwer/Lippincott Williams and Wilkins

Principles of Virology: 2008. 3rd ed. S. J. Flint, et al. ASM Press.

Human Virology: 2011. 4th edition. Eds. L. Collier, P. Kellam, and J. Oxford, Oxford University Press

This Week in Virology (TWIV): <http://www.twiv.tv/archives/> or <http://itunes.apple.com/podcast/this-week-in-virology-mp3/id300973784>

EVALUATION

I) In order to pass the course, you must:

- a. present a paper and submit a written summary (2 pages, single spaced)
- b. write the final examination
- c. achieve an average of at least 50% overall

II) Final grades will be determined in the following manner:

Mid-term exam	35%
Paper presentation and written summary	15%
<u>Final exam</u>	<u>50%</u>
Total	100%

Students absent from classes during the term are expected to make up for the missed classes through discussions with other students and independent readings. The evaluation will be based on the midterm exam, final exam, and paper presentation. The midterm exam will be held during the scheduled class time and there will not be a make-up exam. The final grades for the course will be calculated by combining exam marks (85%) and paper presentation (15%). Students, who miss the final exam and request academic consideration, need to appeal directly to the Academic Review Subcommittee.

Presentation of papers:

During the course, small groups [13 groups of 3 and 2 groups of 2] of students are required to present a 20 min-seminar on a scientific article. A list of articles will be provided by the end of January so that students can choose a topic of interest from the list. Each group of students is required to provide other class members with a summary of the chosen paper (single space, 12 point font size, 1" margins all around, 2 pages) at least 2 days before the presentation. You must form a group for presentations and sign up by January 31. The summary and oral presentation should include:

- 1) Title, authors, institutions, source, and date of publication
- 2) Objectives
- 3) Methodology and experimentation
- 4) Results, major findings
- 5) Interpretations of the results and discussions
- 6) Critique(s) of the paper

Evaluation will be made based on the quality of the written summary (5 marks) and the oral presentation (10 marks), demonstration of understanding of the paper, and ability to put the materials in context and to fill in the background information as necessary, plus handling questions and discussion. Students of the same group will receive the same marks.

Papers will be selected to represent a wide area of topics in medical virology, such as protection of viral infection by mucosal immunization, viral vectors for foreign gene expression and gene therapy, chemotherapy for viral infection, emerging and re-emerging viruses etc.

COURSE EVALUATION

Students will be asked to complete a questionnaire about the instructors' teaching during the last two weeks of classes. This information is required by the University to evaluate faculty performance for purposes of Tenure, Promotion and Selective Increases. Administered by a third party rather than the instructors, these evaluations will be delivered to the respective instructors only after the final grades have been submitted to the Registrar's Office. This can now be done online WebCT if you want.

Only the numerical ratings from the form will be made available to the Chair for administrative purposes: the Chair will not see any comments that are written on the evaluation forms unless signed. Students are welcome to visit the Pathobiology (or Molecular and Cellular Biology) Chair's office at any time during the semester to preview the questionnaire.

If students wish comments to be considered in performance review of the faculty member, signed comments should be sent to the Department Chair. The faculty member will have the opportunity to read such comments and respond if desired to the Chair, prior to performance review.

COURSE ACCESSIBILITY STATEMENT

The University provides academic accommodations for students with disabilities in accordance with the terms of the Ontario Human Rights Code. This occurs through a collaborative process that acknowledges a collective obligation to develop an accessible learning environment that both meets the needs of students and preserves the essential academic requirements of the University's courses and programs.

IMPORTANT DATES:

First class:	January 8, Tuesday, 8:30 AM, PAHL 1810
Midterm exam:	Feb 14, Thursday, during class
No classes:	February 19, Tuesday (Winter break) February 21, Thursday (Winter break)
Last class:	April 4, Thursday
Final exam:	April 12, Friday, 8:30 - 10:30 AM, Room TBD

APPROXIMATE COURSE SCHEDULE (2013)

1. Jan 8 (Tue) Introduction to course; review of basic virology
2. Jan 10 (Thur) Infection basics
3. Jan 15 (Tue) Diagnosis of viral infection
4. Jan 17 (Thur) Host defense mechanisms and response to viral infection
5. Jan 22 (Tue) Vaccines and antiviral therapies
6. Jan 24 (Thur) Virus evolution and emerging/re-emerging viral infections
7. Jan 29 (Tues) Viral diseases of the respiratory tract
8. Jan 31 (Thur) Viral diseases of the respiratory tract
9. Feb 5 (Tue) Viral enteric diseases
10. Feb 7 (Thur) Viral reproductive and congenital infections
11. Feb 12 (Tue) Viral hepatitis
12. Feb 14 (Thur) Mid-term exam
13. Feb 21 (Tue) Winter break
14. Feb 23 (Thur) Winter break
15. Feb 26 (Tue) Viral encephalitis
16. Feb 28 (Thur) Viral skin rashes
17. Mar 5 (Tue) Viral hemorrhagic fevers
18. Mar 7 (Thur) Viral diseases of the central nervous system
19. Mar 12 (Tue) HIV pathogenesis
20. Mar 14 (Thur) Viral vectors and gene therapy
21. Mar 19 (Tue) Paper presentations (groups 1, 2, 3)
22. Mar 21 (Thur) Paper presentations (groups 4, 5, 6)
23. Mar 26 (Tue) Paper presentations (groups 7, 8, 9)
24. Mar 28 (Thur) Paper presentations (groups 10, 11, 12)
25. April 2 (Tue) Paper presentations (groups 13, 14, 15)
26. April 4 (Thur) Paper presentations (groups 16, 17, 18)