

MMI 133A: MEDICAL MICROBIOLOGY FOR NURSES

3 credits, 3 hours lecture per week

Course description: An introductory course in microbiology designed specifically for students in the BScN Program. The course begins with basic information on microorganisms, the immune system, hospital hygiene, transmission of infection, infections, antimicrobials, disinfection and sterilization. The later part of the course concentrates on pathogenic organisms related to organ systems and how they cause disease.

Instructor

Dr. Blaine Legaree

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Office Hours

| | |
|-----------------|---------------|
| Mon/Wed/Fridays | 3:00–4:00 pm |
| Tues/Thursdays | 9:30–10:30 am |

Hours of Instruction

| | | |
|----------------|------------------|--------|
| Tues/Thursdays | 10:30 – 11:50 am | Rm 273 |
|----------------|------------------|--------|

Required Resources

1. **Microbiology: A Clinical Approach, 2nd Ed.**, 2015, Strelkauskas *et al.*, ISBN: 9780815345138

Available at the bookstore and as an ebook download at coursesmart.com, store.vitalsource.com & amazon.ca.

Other medical microbiology texts may also be applicable, but please consult your instructor.

The text is meant as a reference to supplement what will be covered in lecture. It is highly recommended you read the textbook prior to coming to class. A complete list of the terms and concepts you are required to know can be found at the end of each set of lecture notes.

2. **Moodle**

The course outline, lecture notes and other electronic resources will be available on Moodle (<http://ilearn.keyano.ca>). ***Download or print the lecture notes before coming to each class.

Course Outcomes

Upon successful completion of this course, the student will be able to:

- Describe different types of infectious agents including bacteria, viruses, protists, fungi and multicellular parasites.
- Understand how we can grow, study, control and kill microbes in clinical and laboratory settings.
- Explain how microbes cause disease in individuals & populations.
- Recognize mechanisms of the immune system.
- Discuss the biological mechanisms of a number of clinically relevant infections of the human body.

Evaluation

| | | |
|------------------------|-----|--|
| Quiz | 5% | Thurs, Sept 12 |
| Midterm Examination I | 20% | Tues, Oct 8 |
| Midterm Examination II | 20% | Tues, Nov 5 |
| Assignment | 15% | Thurs, Nov 14 (due date) |
| Final Examination | 40% | <i>Date to be set by the Registrar</i> |

A grade of C- is required for progression or transfer.

Examinations

Exams are based on material covered in lectures and will consist of multiple choice and written questions. The final exam is cumulative and must be written to complete the course.

Assignment

The assignment and grading scheme will be handed out in the second week of classes.

You must complete the online Plagiarism Certificate (see page 4 for details) and submit a copy to your instructor for your assignment to be graded.

Late assignments will be penalized 10% per day late and will not be accepted more than 5 days late without extenuating circumstances.

Grading System

| Descriptor | Alpha Grade | 4.0 Scale | Percent | Rubric for Letter Grades |
|------------------------------------|-------------|-----------|-----------|--|
| Excellent | A+ | 4.0 | > 92.9 | Work shows in-depth and critical analysis, well developed ideas, creativity, excellent writing, clarity and proper format. |
| | A | 4.0 | 85 – 92.9 | |
| | A- | 3.7 | 80 – 84.9 | |
| Good | B+ | 3.3 | 77 – 79.9 | Work is generally of high quality, well developed, well written, has clarity, and uses proper format. |
| | B | 3.0 | 74 – 76.9 | |
| | B- | 2.7 | 70 – 73.9 | |
| Satisfactory Progression | C+ | 2.3 | 67 – 69.9 | Work has some developed ideas but needs more attention to clarity, style and formatting. |
| | C | 2.0 | 64 – 66.9 | |
| | C- | 1.7 | 60 – 63.9 | |
| Poor Minimum Pass | D+ | 1.3 | 55 – 59.9 | Work is completed in a general way with minimal support, or is poorly written or did not use proper format. |
| | D | 1.0 | 50 – 54.9 | |
| Failure | F | 0.0 | < 50 | Responses fail to demonstrate appropriate understanding or are fundamentally incomplete. |

Schedule of Topics

| | Textbook Chapters**: |
|--|----------------------|
| 1. Introduction to Microbiology | 1 |
| 2. Classification of Infectious Organisms | 4 |
| 3. Bacteria | 3, 4, 9 |
| 4. Simple Eukaryotes (Protists and Fungi) | 14 |
| 5. Multicellular Eukaryotic Parasites | 14 |
| 6. Viruses, Prions, and Cancer | 12, 13 |
| 7. Microbial Culturing | 10 |
| 8. Microbial Identification | 4, 6 |
| 9. Sterilization and Disinfection | 18 |
| 10. Antimicrobials | 19, 20 |
| 11. Epidemiology and Disease Transmission | 6, 8 |
| 12. Microbiomes, Infections and Disease | 5, 7, 13 |
| 13. The Body's Defenses | |
| i. Innate Immunity | 15 |
| ii. Adaptive Immunity | 13, 16 |
| iii. Immune Disorders and AIDS | 17 |
| 14. Infections of the Human Body | |
| i. Infections of the Body's Surface | 26 |
| ii. Infections of the Respiratory System | 21 |
| iii. Infections of the Digestive System | 22 |
| iv. Infections of the Urogenital System | 23 |
| v. Infections of the Nervous System | 24 |
| vi. Infections of the Circulatory System & Systemic Infections | 25 |

** Detailed readings and topic outlines for each unit are provided with the lecture notes.

Please Note

To facilitate unforeseen time constraints, time allotted to each topic is subject to change.

Performance Requirements

Student Responsibilities

It is your responsibility as a student to contact the Office of the Registrar to complete the forms for Withdrawal or Change of Registration, and any other forms. Please refer to the list of important dates as noted in the Academic Schedule in the Keyano College credit calendar.

More specific details are found in the Student Rights and Student Code of Conduct section of the Keyano College credit calendar. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and Student Code of Conduct Policies.

Student Attendance

Class attendance is useful for two reasons. First, class attendance maximizes a student's learning experience. Second, attending class is a good way to keep informed of matters relating to the administration of the course (e.g., the timing of assignments and exams). Ultimately, you are responsible for your own learning and performance in this course.

It is the responsibility of each student to be prepared for all classes. Students who miss classes are responsible for the material covered in those classes and for ensuring that they are prepared for the next class, including the completion of any assignments and / or notes that may be due.

Academic Misconduct

Students are considered to be responsible adults and should adhere to principles of intellectual integrity. Intellectual dishonesty may take many forms, such as:

- Plagiarism or the submission of another person's work as one's own
- The use of unauthorized aids in assignments or examinations (cheating)
- Collusion or the unauthorized collaboration with others in preparing work
- The deliberate misrepresentation of qualifications
- The willful distortion of results or data
- Substitution in an examination by another person
- Handing in the same unchanged work as submitted for another assignment
- Breach of confidentiality.

The consequences for academic misconduct range from a verbal reprimand to expulsion from the College. More specific descriptions and details are found in the Student Rights and Student Code of Conduct section of the Keyano College credit calendar. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and Student Code of Conduct Policies.

In order to ensure your understanding of the concept of plagiarism, you must successfully complete the online Plagiarism Certificate at ilearn.keyano.ca. Then print the certificate, sign it, and show it to each of your instructors. Your course work will not be graded until you show this signed certificate. If you completed this certification previously, show evidence to your instructor.

Specialized Supports

The Student Academic Support Services (SASS) department: Accessibility Services, Skill Centre, Wellness Services and Student Life Department work together to support student success at Keyano College.

Accessibility Services (CC167) supports student success through group and individualized instruction of learning, study and test taking strategies, and adaptive technologies. Students with documented disabilities, or who suspect a disability, can meet with the Learning Strategists to discuss accommodation of the learning barriers that they may be experiencing. Students who have accessed accommodations in the past are encouraged to visit our office at their earliest opportunity to discuss the availability of accommodations in their current courses. Individual appointments can be made by calling 780-791-8934.

Skill Centre (CC119) provides a learning space where students can gather to share ideas, collaborate on projects and get new perspectives on learning from our tutorial staff. Students visiting the centre have access to one-to-one or group tutoring, facilitated study groups, and assistance in academic writing. The Skill Centre's Peer Tutor program provides paid employment opportunities for students who have demonstrated academic success and want to share what they have learned. Tutoring is available free to any students registered at Keyano College on a drop in basis, from 8:30 am to 5:00 pm Monday through Friday. Additional evening hours are subject to tutor availability and are posted in the Skill Centre.

Wellness Services (CC260) offers a caring, inclusive, and respectful environment where students can access free group and individual support to meet academic and life challenges. Mental Health Coordinators offer a safe and confidential environment to seek help with personal concerns. The Mindfulness Room in CC260 is available as a quiet space for students to relax during regular office hours. Wellness Service welcomes students to participate in any of the group sessions offered throughout the academic year addressing such topics as Mindfulness and Test Anxiety. Individual appointments can be made by calling 780-791-8934.

Student Life Department (CC210) is a place for students to go when they don't know who else can answer their questions. The staff will help students navigate barriers to success and if they don't know the answer, they will find it out. Student success is directly affected by how connected a student feels to their college. The student life department is there to help students get connected.

Please watch your Keyano email for workshop announcements from our Student Academic Support Services team.