Course Outline

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 covers 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

Office: S209D
Phone: 780.792.5616
Email: blaine.legaree@keyano.ca

Office Hours

Mon: 2:00–4:00 pm
Tues: 10:00–11:00 am
Wed: 12:00–1:00 pm
Thurs: 10:00–11:00 am

Hours of Instruction

Wed/Fri: 1:00–2:50 pm   Rm CC273

Required Resources

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

   Available at the bookstore and electronically at the Keyano Bookstore, Vitalsource.com & Amazon.ca.

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

2. **Moodle (http://ilearn.keyano.ca)**. Login to access course materials and to submit assignments.

Course Outcomes

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

- Describe different types of infectious agents that can cause human diseases, including bacteria, viruses, prions, protists, fungi and multicellular parasites.
- Explain the principles of pathology, epidemiology and control of infection.
- Understand how we can grow, study, control and kill microbes in clinical and laboratory settings.
- Discuss the various mechanisms of the immune system and the principles of vaccines.
- Discuss the biological mechanisms of a number of clinically relevant infections of the human body.

Evaluation

Quiz	5%	Wed, Sept 7
Midterm Examination 1	20%	Wed, Oct 5
Midterm Examination 2	20%	Wed, Nov 2
Assignment	15%	Wed, Nov 16 (due date)
Final Examination	40%	*Date to be set by the Registrar*

NOTE: A grade of C+ is required for progression in the BSc Nursing program.

Examinations

Exams are based on material covered in lectures and will consist of multiple choice, matching 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.

Late assignments are subject to a penalty of 10% per day late and will not be accepted if more than one week late.

All students are required to complete the Understanding Plagiarism Tutorial prior to handing in the assignment for this course. Any acts of plagiarism and academic misconduct are subject to penalties detailed in the Keyano Academic Integrity Policy.

Grading System

Descriptor	Alpha Grade	4.0 Scale	Percent	Rubric for Letter Grades
	A+	4.0	> 92.9	Work shows in-depth and critical analysis, well developed ideas, creativity, excellent writing, clarity and proper format.
Excellent	A	4.0	85 – 92.9	
	A-	3.7	80 – 84.9	
	B+	3.3	77 – 79.9	Work is generally of high quality, well developed, well written, has clarity, and uses proper format.
Good	B	3.0	74 – 76.9	
	B-	2.7	70 – 73.9	
Progression	C+	2.3	67 – 69.9	Work has some developed ideas but needs more attention to clarity, style and formatting.
Satisfactory	C	2.0	64 – 66.9	
	C-	1.7	60 – 63.9	
Poor	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.
Minimum Pass	D	1.0	50 – 54.9	
Failure	F	0.0	< 50	Responses fail to demonstrate appropriate understanding or are fundamentally incomplete.

Lecture 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 Mechanisms of Disease	5, 7, 13

13.	The Body's Defenses
	    i. Innate Immunity
	    ii. Adaptive Immunity and Vaccines
	    iii. Immune Disorders and AIDS
		
		15
		13, 16
		17

14.	Infections of the Human Body
	    i. Infections of the Body's Surface
	    ii. Infections of the Respiratory System
	    iii. Infections of the Digestive System
	    iv. Infections of the Urogenital System
	    v. Infections of the Nervous System
	    vi. Infections of the Circulatory System & Systemic Infections
		
		26
		21
		22
		23
		24
		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 and Student Services

Student Responsibilities

As a student, it is your responsibility to contact the Office of the Registrar to complete the required forms, including the Withdraw Course or Program or a Change of Registration form. Please refer to the important dates listed in the Academic Schedule in the Keyano College credit calendar. The Keyano College credit calendar also has information about Student Rights and the Code of Conduct. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and the Code of Conduct Policies.

Student Attendance

Class attendance is helpful for two reasons: First, class attendance maximizes a student's learning experience. Second, attending class is an excellent way to keep informed of matters relating to the course administration (e.g., the timing of assignments and exams).

Ultimately, you are responsible for your learning and performance in this course. It is the responsibility of each student to be prepared for all classes. Absent students are responsible for the material covered in those classes, and students must ensure they are ready for their next class, including completing any missed assignments and notes.

Academic Misconduct

Students are considered 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 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 Code of Conduct Policies. To ensure your understanding of plagiarism, you may be required to complete the online Understanding Plagiarism tutorial and submit the certificate of completion.

Online Learning

Technology and internet connectivity will impact your online learning experience. You may be required to watch online videos, take online quizzes, or participate in live online classes. Live/virtual courses will be hosted in Microsoft Teams or Zoom. For all course delivery types, you will access your course resources on Keyano's learning management system: Moodle (iLearn). Login in using your [Keyano username and password](). Keyano College operates in a Windows-based environment, and having access to the correct tools for online learning is essential. Here's a list of recommended system requirements.

Internet Speed

Minimum download and upload speeds of 10 Mbps. Recommended download speeds of 25 Mbps and upload speeds of 10 Mbps (if you are sharing your internet at home). You can check your internet speed with [Speedtest by Ookla]().

Computer System Requirements:

Minimum Requirements:
• A Windows 10 or Macintosh (V10.14 and above) **computer/laptop**
• Minimum 4GB of RAM.
• 10GB available hard drive storage.
o Install the Microsoft Office 365 suite (~3GB) *
• Microphone, webcam and speakers. (All modern laptops have these three accessories built-in.)
• Windows and Macintosh have built-in anti-virus/malware software. It is essential to install system updates to keep your device secured regularly.
• *[Microsoft Office 365]() is free to Keyano students.
Recommended Requirements
• 8GB of RAM
• Regularly back up or synchronize your files, locally or with a cloud-based storage option.
o OneDrive is the cloud-based storage option free to students after the setup of KeyanoMail and Microsoft 365.
Tablets, iPads and Chromebooks are not recommended: they may not be compatible with the testing lockdown browsers and Microsoft Office 365.

Computer Software

Students have access to Microsoft Office 365 and Read&Write for free using Keyano credentials.

Recording of Lectures and Intellectual Property

Students may only record a lecture if explicit permission is provided by the instructor or Accessibility Services. Even if students have permission to record a lecture or lecture materials, students may not share, distribute, or publish any of the lectures or course materials; this includes any recordings, slides, instructor notes, etc., on any platform. Thus, no student is allowed to share, distribute, publish or sell course-related content without permission. It is important to recognize that the Canadian Copyright Act contains provisions for intellectual property. The [Academic Integrity Policy]() provides additional information on Keyano College's expectations from students as members of the intellectual community.

ITS Helpdesk

If you have issues with your student account, you can contact the ITS Helpdesk by emailing [its.helpdesk@keyano.ca]() or calling 780-791-4965.

COVID-19

We are subject to provincial, and municipal bylaws, and policies. These decisions may change pending further direction from the Alberta Chief Medical Officer, Alberta Health Services, and other provincial guidelines. To protect yourself and others, get immunized, wash your hands, wear a mask, keep your distance (2m/6 ft) and remain home when feeling unwell. For the most recent COVID-19 information, please refer to albertahealthservices.ca/COVID.

Specialized Supports

The Student Services Department is committed to Keyano students and their academic success. There is a variety of student support available at Keyano. All student services are available during Keyano business hours: Monday to Friday, 8:30 a.m. to 4:30 p.m. The College is closed on statutory holidays. If you require support outside of regular business hours, please inform the support service team, and they will do their best to accommodate your needs.

Accessibility Services provides accommodations for students living with disabilities. Students with documented disabilities or who suspect a disability can meet with an Access Strategist to discuss their current learning barriers and possible accommodations. Students who have accessed accommodations in the past are encouraged to contact the department to request accommodations for the following semester. Please note that requesting accommodations is a process and requires time to arrange. Contact the department as soon as you know you may require accommodations. For accessibility supports and disability-based funding, please book an appointment by emailing us at: accessibility.services@keyano.ca.

Accessibility Services also provides individual and group learning strategy instruction for all students and technology training and support to enhance learning. You can meet with an Access Strategist to learn studying and test-taking strategies. In addition, you can schedule an appointment with the Assistive Technology Specialist to explore technology tools for learning. Book an appointment today by emailing: accessibility.services@keyano.ca

Wellness Services 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 provide a safe and confidential environment for you to seek help with personal concerns. Our Wellness Navigator offers support with basic needs such as housing, financial and nutritional support, and outside referrals when needed. Wellness Services welcomes students to participate in group sessions that address topics including mindfulness and test anxiety throughout the academic year. Individual appointments can be made by emailing wellness.services@keyano.ca.

Library Services: provides students with research, information, and education technology supports as they engage in their studies. Library staff are available to help you online and in person throughout the semester. Librarians offer individual and small group appointments booked using the online Book A Librarian calendar. The Library also provides research and subject guides to help you with your studies. To view a subject or course-specific guide, check out the complete list of online Subject Guides. To start your research and access citation guides (APA, MLA, Chicago, or IEEE), visit the Research Help page. The Library's collections (including print and online materials) are searchable using OneSearch. The Library offers a Loanable Technology collection to support students accessing and using technology. For an up-to-date list of technology available for borrowing, visit the Library's Loanable Technology webpage. For a detailed list of library resources and services, go to www.keyano.ca/library. For all inquiries, please email askthelibrary@keyano.ca or chat with us online.

Academic Success Centre: The Academic Success Centre at Keyano College (CC-119) provides **free** academic support services to registered students, such as tutoring, writing support, facilitated study groups, workshops, and study space. Academic Content Specialists are available in Mathematics, Science, Trades, Power Engineering, Upgrading/College Prep, Human Services, English, Humanities, and more. Students are encouraged to visit the Academic Success Centre to discuss study strategies and academic concerns. For additional information, please email Academic.Success@keyano.ca.

Academic Success Coach: The Academic Success Coach is located in the Academic Success Centre and works with students to develop academic success plans, time management skills, study strategies, and homework plans. For additional information, please email Academic.Success@keyano.ca.

Authorization

This course outline has been reviewed and approved by the Program Chair.

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Blaine Legaree, Instructor

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Marie-France Jones, Chair   Date Authorized

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Sandra Efu, Dean   Date Authorized

Signed copies to be delivered to:
Instructor
Registrar's Office