

Luther College is a federated college at the University of Regina. Grounded in the liberal arts tradition, Luther College is committed to personalized education in a community of scholars who value excellent teaching and engaged learning. Luther courses are student-centered and open to students from all faculties and federated colleges at the University of Regina.

Luther College respectfully acknowledges that it is situated on Treaty Four lands and also the home of the Métis people. Our College considers this shared history to be especially significant as we seek truth and reconciliation. We are reminded that we are all treaty people and are aware of the responsibility we have to one another.

**Course Number:** BIOL 303-L01

**Course Title:** Medical Microbiology

**Term/Year:** Winter 2026

**Lectures:** LC 215; TR 10:00-11:15 AM

**Instructor Name and Title:** Dr. Nicole Hansmeier

**Office Location:** LC 222

**Email:** nicole.hansmeier@uregina.ca

**Bio:** LCUR or UR website “Hansmeier”

**Office Hours:** T after lectures or other times by appointment (scheduled via UR Courses email)

Any student with a disability who may need accommodations should discuss these with the course instructor, and contact the Coordinator of the Centre for Student Accessibility at 306.585.4631 or visit <http://www.uregina.ca/arts/student-resources/new/special-needs.html>.

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**Course Description:** The intent of this course is to provide an advanced introduction to pathogens and the concept of diseases. This course will showcase the nature of host-pathogen interactions, the intricate nature of pathomechanisms as well as the ongoing arms race between pathogens and their hosts. At the end of this course you will be familiar with pathogenic strategies to evade or overpower the human immune system, emergent diseases and their epidemiology.

**Learning Objectives:** By the end of this course, students will be able to: A. Explain fundamental concepts in infectious disease biology, including pathogen types, transmission modes, disease classification, and epidemiology. B. Describe and compare key bacterial and viral pathogens, focusing on their evolution, virulence mechanisms, and strategies for immune evasion. C. Interpret disease manifestations and symptoms, identify appropriate diagnostic and surveillance approaches, and evaluate current treatment and public health interventions. D. Communicate scientific findings clearly through presentations and discussions, using primary and review literature to support arguments. E. Apply interdisciplinary knowledge of microbial pathogenesis and public health to contemporary challenges such as antimicrobial resistance, emerging infectious diseases, and wastewater-based surveillance. Further details please see below.

**Meta-skills and/or Capabilities:**

- Scientific literacy and conceptual integration: demonstrate the ability to synthesize and apply cross-disciplinary concepts from microbiology, immunology, epidemiology, molecular biology, and public health to form a coherent understanding of infectious disease and host-pathogen interactions
- Inquiry-based problem solving: engage in hypothesis-driven exploration of pathogenic mechanisms and outbreak scenarios, fostering critical thinking and independent learning in the context of emerging and re-emerging infectious diseases

- Pathogen evaluation and evolutionary analysis: analyze the biology and life cycles of diverse pathogens; compare evolutionary adaptations across taxa to explain variation in virulence, host specificity, and resistance patterns
- Systems-level disease analysis and public health framing: evaluate infectious diseases across molecular, cellular, organismal, and population levels, connecting mechanistic insights to public health impact, surveillance, and policy
- Diagnostic and therapeutic reasoning: assess the rationale, effectiveness, and limitations of diagnostic approaches, treatment strategies, and preventative interventions, informed by mechanisms of pathogenesis and host immunity.
- Scientific communication and peer engagement: Develop and deliver structured, evidence-based group presentations on infectious diseases. Demonstrate the ability to interpret complex research and present key findings clearly to a scientific audience.

### Textbooks (Optional)

Basics can be covered by:

- *Microbiology* from OpenStax: this is an Open Source Textbook, available for download for free at <https://openstax.org/details/books/microbiology>
- *Microbiology – The human experience*: John W. Foster, Zarrintaj Aliabadi, Joan L. Slonczewski
- *Fundamentals of Microbiology*: Jeffrey C. Pommerville (11<sup>th</sup> edition)

Primary literature will be used to cover specifics.

### Electronic Resources:

Our UR Courses site will be continually updated with lecture notes and supplementary materials, study guides, announcements, etc.

To access, log in at <http://urcourses.uregina.ca/login/index.php>, using your uregina.ca username and password.

Images used in lectures will be provided as downloadable PDF files via the Course Web Site. Images in lectures are copyright protected and reprinted with permission for the purpose of this course. **You are not permitted to modify or distribute these slides.**

## Winter 2026: Evaluation Components and Due Dates

Evaluation Component	Grade Weight	Due Date
Midterm exam	35%	Feb 26, 10:05 – 11:05 AM
Final exam	45%	Apr 16, 10:00 – 11:00 AM
Presentation	20%	Slide upload: day before presentation at 23:59 PM Presentation: March 3 – 19
<b>Total</b>	<b>100%</b>	

**\*\* It is the student's responsibility to know the correct time and date of all exams and assignment deadlines. Exams must be written at the scheduled time, and assignments must be submitted by the stated deadline. Extensions will not be granted for lateness without a valid, documented reason. Misreading or misunderstanding the schedule is not an acceptable reason for requesting a deferred exam or an extension. \*\***

**Presentation.** Each student will give a **5-minute presentation** as part of a **group presentation of up to 20 minutes per topic**, followed by a **3-minute in-class discussion**. The presentation should cover the following key areas: pathogen, virulence mechanisms, immune evasion strategies, and disease manifestation, diagnosis and treatment.

**Deadlines and requirements:**

- **Group registration:** Email the instructor your **group member full names** and **chosen topic** no later than **February 6**.
- **Literature requirements:** Each group must incorporate at **least five peer-reviewed scientific review articles** as sources for their topic. Citations should be listed on the respective slide. **Each source must be cited clearly on the slide where it is referenced** (not just at the end).
- **Slide submission:** Upload your **slides (PDF format)** including all sources (journal articles (added as pdfs, links to textbook chapters, or web resources) as a **single PDF file** to UR Courses.
  - **Deadline: 11:59 PM (local time) the day before your scheduled presentation.**
  - **Submit via the UR Courses link** or email through UR Courses to the instructor.
  - **Late submissions or missing uploads without a pre-approved extension will result in a grade of zero.**

**Presentation Dates:**

Presentations will be held between **March 3 and March 19**. A detailed **marking rubric** will be distributed in class.

**Policies:** Students **must complete the listed evaluation components and exams. Failure to comply without a granted extension** (please read section “no-penalty extension”) **from the instructor will be graded as zero**. Exams are written as scheduled unless you have a valid excuse (see section “no-penalty extension”).

**No-penalty extensions** on assignments such as presentation or exams are only granted for extreme circumstance for which a **written request for an extension** with supporting documents is provided 24 hours before the due date.

In fairness to everyone in the class, **the values of the evaluation components will not be adjusted and there are no extra assignments to make up grades for an individual student.**

**The use of generative AI tools** such as ChatGTP, QuillBot, SpinBot, Wordtune, Microsoft Co-Pilot, Bard, Rytr, Writesonic, Jasper, Grammarly is **NOT permitted!**

Please note that this course falls under the Academic Regulations of the University of Regina and the Faculty of Science (these regulations are printed in the General Calendar, available at <http://www.uregina.ca/gencal/ugcal/>).

**Winter 2026: Tentative Class Schedule (subject to change)**

This chart represents an approximate lecture schedule. Individual subjects or order of subjects may change.

Lecture	Topic
Week 1 (Jan 6/8)	Course introduction; TB and basics about infectious diseases
Week 2 (Jan 13/15)	Disease classification and epidemiology, HUS
Week 3 (Jan 20/22)	Bacterial pathogens and their weapons I + II
Week 4 (Jan 27/29)	Evolution – <i>Escherichia</i> and <i>Yersinia</i>
Week 5 (Feb 3/5)	Basic of viral pathogens; SARS-CoV-2, <i>Review for midterm</i>
Week 6 (Feb 10/12)	From wastewater-based surveillance to public health (Guest lectures: Dr. Chao, IECS and Dr. Ojiagu, RRPL)
<b>Week 7 (Feb 16/22)</b>	<b>Winter break</b>
Week 8 (Feb 24/26)	Effective Presentations; <b>Midterm (Feb 26)</b>
Week 9 (Mar 3/5)	<b>Presentations I-II</b>

Week 10 (Mar 10/12)	<b>Presentations III-IV</b>
Week 11 (Mar 17/19)	<b>Presentations V; Viral infection or something else?</b>
Week 12 (Mar 24/26)	Biofilms
Week 13 (Mar 31/ Apr 2)	Antimicrobial treatment and resistance
Week 14 (Apr 7/9)	Food-borne pathogens; <i>Review for final</i>

## Professional Conduct & Policies

### *Services for Students with Disabilities, Health Conditions, Illnesses, and Injuries*

The University of Regina wishes to support all students in achieving academic success while enjoying a full and rewarding university experience. The Centre for Student Accessibility upholds the University's commitment to a diverse and inclusive learning environment by providing services and support to enable students with disabilities, health conditions, illnesses, and injuries to approach their studies in an equal and effective manner. The Centre for Student Accessibility aims to encourage independence, self-advocacy, and equality for all students, while maintaining privacy and confidentiality. Students who need these services are encouraged to register with the Centre for Student Accessibility to discuss the possibility of academic accommodations and other supports as early as possible. The deadline to register and/or request accommodation letters for instructors coincides with the W drop deadline(s) for courses each semester. To register with the Centre for Student Accessibility, please book an appointment with an Accessibility Advisor by calling [\(306\) 585-4631](tel:3065854631) or emailing [accessibility@uregina.ca](mailto:accessibility@uregina.ca). For further information on what is required to register and receive academic accommodations, please explore the website:

<https://www.uregina.ca/student/accessibility/index.html>

### *Student Responsibilities and Course Prerequisites*

Students are responsible for understanding and following the academic regulations outlined in the University Calendar. Please see the Academic Regulations section of the 2025-26 Calendar under Responsibilities of Students. Ensure that you have the necessary prerequisite for this class. If not, you will not receive credit for it at graduation time, and you may have difficulty in completing your degree program. Please note unauthorized video or audio-recording of classes is not permitted. If you have a complaint about this course or the instructor, please contact the Academic Dean of Luther College.

### *Attendance*

Regular and punctual attendance is expected of students in their courses. When the persistent lateness or absence of a student jeopardizes the learning or the evaluation of the work of other students in the course, the student may be subject to penalty, including being dropped from the course or being barred from writing the final examination. One written warning will be provided to the student before such action is taken. (Academic Regulation section of the 2025-26 Calendar). **Please note any specific requirements for attendance in this course.**

### *University Email Accounts*

All official university and course-related correspondence is sent to your University of Regina email account. Check it regularly or have your University email forwarded to your preferred email address; see

<http://www.uregina.ca/is/student/email/>.

### *Procedures and Dates for Dropping Courses*

All changes to course registration must be made through UR Self Service. Students who are not attending but have not formally withdrawn are still considered to be registered, are liable for fees, and are assigned a failing grade of NP for failing to complete the course. **Non-attendance does not constitute withdrawal.**

Last day to drop a course and receive 100% refund	January 17, 2026
Last day to drop a course without a transcript record	January 17, 2026
Last day to withdraw from a course and receive 50% refund	January 31, 2026
<b>End of grade-of-W drop period</b>	<b>March 17, 2026</b>

### ***Academic Misconduct – Plagiarism and Cheating***

Note the definitions of plagiarism and cheating in the Student Code of Code and Right to Appeal section of the 2025-26 Calendar, as well as the potential punishments (which range from a grade of 0 on the test or essay in question up to expulsion from the University). **If you have any questions about the proper methods of citing sources, the extent to which sources (including internet resources) must be cited, or what might constitute plagiarism, please discuss your questions with your instructor before handing in work!** Please note that when you hand in assignments, it is assumed that you handed in the version you intended to hand in – the excuse that you ‘accidentally’ handed in the wrong file will not be accepted. Note that submitting the same assignment in two different classes is considered academic misconduct.

### ***Procedures for Requesting Deferrals of Final Exams or Term Work***

If you are unable to finish your final exam or term work for reasons beyond your control (e.g., illness, accident, death in the family), please contact the Assistant/Associate Dean of the Faculty or College through which you are registered as soon as possible for advice. Procedures for requesting deferral of final examinations or term work are outlined in the Academic Regulations section of the 2025-26 Calendar. If you experience any personal difficulties during the semester, for example due to illness or family issues, please discuss your situation with your instructor and/or your Assistant/Associate Dean as soon as possible.

### ***University Harassment and Discrimination Prevention Policy***

All members of the University community are entitled to a professional working and learning environment free of harassment and discrimination. See the General Information for Students section of the 2025-26 Calendar for more details.

Wishing you a successful semester!

Think deeply. Act passionately. Live faithfully.

