



INSTITUTE FOR
INTERNATIONAL
MEDICINE

Epidemiology Course Syllabus

Course Faculty:

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Learning Support:

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Overview:

Epidemiology is the most fundamental of the health sciences. This course will address introduction to epidemiology, measuring health and disease, epidemiology studies, basic biostatistical concepts, causation in epidemiology, epidemiology of non-communicable diseases, epidemiology of communicable diseases, clinical epidemiology, environmental and occupational epidemiology, and health policy and planning.

Competency Objectives:

At the completion of the INMED Epidemiology Course learners will be able to demonstrate using case-studies and simulation:

- Vision and achievements of epidemiology
- Primary measures of health and disease
- Types of epidemiology studies and their application
- Basic concepts of biostatistics and their application to research interpretation
- Establishing the cause of a disease
- Application of primary, secondary, and tertiary prevention
- Surveillance of and response to infectious diseases
- Analysis of natural history, prognosis, and treatment of disease
- Leading issues in environmental, occupational, and injury epidemiology
- Role of policy, health planning, and the planning cycle

Timeframes:

This intensive course includes 8 weeks of structured learning, and **required** assignments due each Sunday night by midnight Central Time US. Each week includes a *required* virtual class with the faculty for discussions, simulations, case studies and final exams. Except for exceptional circumstances (in which case contact the course director) this weekly virtual class is **required** and may last up to 60 minutes.

Academic Credit:

Completion of this course and its requirements earns **six** credit hours of academic credit.

Enrollment Qualifications:

This course is open to all healthcare professionals and healthcare profession students, as well as non-healthcare professionals. Epidemiology is a fundamental basic in applied science to all healthcare professions.

Computing Requirements:

The following are the minimum computing requirements for participating in this course. Students must have ready access to and be functionally proficient with:

- A personal computer with an up-to-date operating system and ample memory for downloads. A rectangular monitor (desktop or tablet) is highly preferable for course navigation.
- A web browser, preferably the most up-to-date version of Chrome, Internet Explorer, Firefox, or Safari
- Applications capable of opening and editing Microsoft Word documents and of viewing PDFs
- An Internet connection, preferably high speed. Note: a Zoom call-in option is available for those with unreliable internet connections. Lack of internet connectivity will not be accepted as a reason for non-participation in the weekly class call.
- Capability of viewing YouTube and Vimeo videos

Educational Methods:

Learners will achieve the course competency objectives through the following educational methods:

- Assigned book and article readings

- Critical analysis
- Group discussions

Textbook Download:

World Health Organization: [Basic Epidemiology](#) (2nd ed) by R. Bonita, R. Beaglehole, T. Kjellström, and WHO; 2006.

Weekly Assignments:

Required weekly virtual class with course faculty for up to 60 minutes to discuss assigned lessons, chapters, articles, forum discussions and questions.

Week One: Introduction to Epidemiology

Learning Content:

Lesson 1 What Is Epidemiology?

Lesson 2 Epidemiology and Public Health

Lesson 3 Achievements in Epidemiology

Blog post on week 1 reading assignment

Assignments to be completed by 11:55 pm, on Sunday

- Complete the Introduction to Epidemiology Pre-test
- Participate in the Introduction to Epidemiology Lessons 1-3
- Complete Introduction to Epidemiology Post-test
- Read the assigned journal article(s)
- Complete the Discussion Board Assignments: Self-introductory post and post responses to the questions posed regarding this week's journal article(s)

Week Two: Measuring Health and Disease

Learning Content:

Lesson 1 Defining Health and Disease

Lesson 2 Using Available Information

Lesson 3 Morbidity and Disability

Assignments to be completed by 11:55 pm, CT on Sunday

- Complete Measuring Health and Disease Pretest
- Participate in the Measuring Health and Disease content, Lessons 1-3
- Complete Measuring Health and Disease Post-test
- Read the assigned journal article(s)

- Complete the Discussion Board with responses to the questions posed regarding this week's journal article(s)

Week Three: Epidemiology Studies

Learning Content:

Lesson 1 Observational Epidemiology

Lesson 2 Experimental Epidemiology

Lesson 3 Potential Errors in Epidemiological Studies

Assignments to be completed by 11:55 pm, on Sunday

- Complete Epidemiology Studies Pre-Test
- Participate in the Epidemiology Studies content, Lessons 1-3
- Complete Epidemiology Studies Post-Test
- Read the assigned journal article(s)
- Complete the Discussion Board with responses to the questions posed regarding this week's journal article(s)

Week Four: Basic Biostatistics Concepts and Causation in Epidemiology

Learning Content:

Basic Biostatistical Concepts Content:

Lesson 1 Displaying Statistical Information

Lesson 2 Summary Numbers

Lesson 3 Statistical Inference

and

Causation in Epidemiology Content:

Lesson 1 The Concept of Cause

Lesson 2 Establishing the Cause of a Disease

Assignments to be completed by 11:55 pm, on Sunday

- Complete Basic Biostatistics Concepts Pre-Test
- Participate in the Basic Biostatistical Concepts content, Lessons 1-3
- Complete the Basic Biostatistics Concepts Post-Test
- Complete Causation in Epidemiology Pre-Test
- Participate in the Causation in Epidemiology content, Lessons 1-2
- Complete the Causation in Epidemiology Post-Test
- Read the assigned journal article(s)
- Complete the Discussion Board with responses to the questions posed regarding this week's journal article(s)

Week Five: Epidemiology of Non-Communicable Diseases

Learning Content:

Lesson 1 Scope of Prevention

Lesson 2 Levels of Prevention

Lesson 3 Screening for Disease

Assignments to be completed by 11:55 pm, on Sunday

- Complete Epidemiology of Non-Communicable Diseases Pre-Test
- Participate in the Epidemiology of Non-Communicable Diseases content, Lessons 1-3
- Complete the Epidemiology of Non-Communicable Diseases Post-Test
- Read the assigned journal article(s)
- Complete the Discussion Board with responses to the questions posed regarding this week's journal article(s)

Week Six: Epidemiology of Communicable Diseases and Clinical Epidemiology

Epidemiology of Communicable Diseases Content:

Lesson 1 Burden of Communicable Diseases

Lesson 2 Chain of Infection

Lesson 3 Investigation and Control of Epidemics

and

Clinical Epidemiology Content:

Lesson 1 Normality and Abnormality

Lesson 2 Effectiveness of Treatment

Assignments to be completed by 11:55 pm, Sunday

- Complete Epidemiology of Communicable Diseases Pre-Test
- Participate in the Epidemiology of Communicable Diseases content, Lessons 1-3
- Complete the Epidemiology of Communicable Diseases Post-Test
- Complete the Clinical Epidemiology Pre-Test
- Participate in the Clinical Epidemiology content, Lessons 1-2
- Complete the Clinical Epidemiology Post-Test
- Read the assigned journal article(s)
- Complete the Discussion Board with responses to the questions posed regarding this week's journal article(s)

Week Seven: Environmental and Occupational Epidemiology, and Health Policy and Planning

Environmental and Occupational Epidemiology Content:

Lesson 1 Environment and Health

Lesson 2 Exposure and Dose
Lesson 3 Assessing Risk
and
Health Policy and Planning Content:
Lesson 1 Health Policy in Practice
Lesson 2 Health Planning Cycle

Assignments to be completed by 11:55 pm, Sunday

- Complete for Environmental and Occupational Epidemiology Pre-Test
- Participate in the Environmental and Occupational Epidemiology content, Lessons 1-3
- Complete the Environmental and Occupational Epidemiology Post-Test
- Complete for Health Policy and Planning Pre-Test
- Participate in the Health Policy and Planning content, Lessons 1-2
- Complete the Health Policy and Planning Post-Test
- Read the assigned journal article(s)
- Complete the Discussion Board with responses to the questions posed regarding this week's journal article(s)

Week Eight: Final Exam

All learners will login together for the Epidemiology Final Exam during the final online class during the assigned date and time. The final class will be two hours in length- the first hour will include discussion of the final week's assignments, and the second hour, students will complete the final exam.

DATE, TIME Central Time, LINK, Passcode:

Explanation of Assignments:

Due Dates: All assignments are due on Sunday at 11:55 pm of the week they are assigned.

Participation: Learners are required to fully participate in the course content, including pre-tests, interactive questions, and post-tests.

Punctuality: This is an intensive, professional level course. All assignments are expected to be submitted on time. Any learner who becomes more than two weeks behind in submitting any assignment is subject to dismissal from the course. If dismissal occurs, the learner will be granted one opportunity to re-enroll in an upcoming course at no additional tuition payment.

Professionalism Requirement: This is a learning experience for professionals. Assignments are expected to be completed with excellence.

Assigned Articles: Each week journal article(s) are presented for learners to critically review, including questions posed on the subjects of each article.

Discussion Board Participation: Learners are required to post one response to each of these questions **in their own words, using appropriate citations for other sources they use**, and respond to at least one fellow classmate's responses, again in their own words, stating with what they agree or disagree in their response and why. A post that simply copies content from another source or agrees with something someone else said without further explanation is not satisfactory and will be counted as if there were no post.

Requirements for Successful Completion & Course Grade Determination:

| <i>Element</i> | <i>Weight</i> |
|---|---------------|
| Weekly Virtual Classroom Participation | 20% |
| 8 post-tests achieving | 30% |
| 8 satisfactory article discussion board posts | 20% |
| Epidemiology Final Exam $\geq 80\%$ | 30% |

In addition, course completion also requires:

- Participation in *all* weekly virtual classes
- Achievement of $\geq 80\%$ on all post-tests **and** Epidemiology Final Exam
- Cumulative course score $\geq 80\%$
- Complete course evaluation and credit claims forms at the course conclusion.

Final Exams: One comprehensive final exam will be conducted, composed of 60 multiple-choice questions. An excellent review for this exam is thorough mastery of the Certificate Course content.

Course grades will be assigned according to the INMED Course Grading System:

| | | |
|---|----------|------|
| A | 90-100 % | 4.00 |
| B | 80-89 % | 3.00 |
| C | 70-79 % | 2.00 |
| D | 60-69 % | 1.00 |
| F | 0-59 % | 0.00 |

Grade Definitions

Following are definitions used for the assignment of grades.

A: Mastery of course objectives is at the highest level of expected achievement.

B: Adequate performance in attaining the course objectives has been achievement.

C: An inadequate level of course objective attainment has been achievement.

D: Only marginal inadequate performance towards the course objectives have been achieved.

F: Grossly inadequate performance has been demonstrated.

IN: Incomplete status. This is a temporary grade indicating that the learner has been given and the opportunity to submit outstanding requirements. IN automatically converts to F at the end of eight weeks following the close of a term.

W: Withdrawal from a course without credit.

Remediation:

If a learner does not complete this course and achieve the required competencies, the faculty may require the learner to 1) remediate the component(s) that the learner did not satisfactorily complete, or 2) repeat the entire course within one year of the start date of the original course. The learner will be offered only one opportunity to repeat the course without requiring repeat payment of tuition.

Academic Integrity:

This is a professional-level, intensive learning experience. All learners are expected to be self-motivated, to perform all assignments with excellence and on-time, and to be thoroughly honest throughout their process of learning. If any INMED faculty determines that a learner has committed academic dishonesty by plagiarism, cheating or in any other manner, the faculty member has the right to 1) fail the learner for the particular assignment, project and/or exam, 2) fail the learner for the entire course, 3) discharge the learner from any future INMED learning experience, including degree, diploma, or certificate completion.

Withdrawal and Refund Policy:

100% refund: 1st day – 3rd day*

75% refund: 4th day to the day before the course starts

50% refund: 1st week of course

30% refund: 2nd week of course

20% refund: 3rd week of course

10% refund: 4th week of course

No refund: following 4th week of the course

* Day one = date enrollment agreement is signed or date on course registration receipt. "Day" refers to a business day and excludes weekends and holidays.

INMED reserves the right to cancel individual sessions or the entire course. In the event of a course cancellation, a full tuition refund will be made.

Course Faculty:

Joe LeMaster, MD, MPH
INMED Professor

Dr. Joseph LeMaster is a tenured full professor of Family Medicine and Community Health at Kansas University Medical Center (KUMC), where he is an active researcher (since 2011) and provides targeted primary care for refugees from the Himalayan nation of Bhutan. Himself a graduate of KUMC, Dr. LeMaster and his wife Judy lived in Nepal from 1990-2000, LeMaster in 1994 completed the Public Health in Developing Countries 1-year course from the London School of Hygiene And Tropical Medicine (a tool-box course for public health leaders in developing countries). He served first at Okhaldhunga Hospital (an affiliate of the United Mission to Nepal), the only medical care facility for 300,000 people, where they promoted maternal-child health and conducted leprosy research; and later at Anandaban Hospital, a facility operated by The Leprosy Mission International. He went on to obtain a Master's in Public Health focused on epidemiology from the University of Washington School of Public Health.

Dr. LeMaster has been teaching with INMED since 2008, with special contributions in epidemiology, cross-cultural skills, public health leadership, and participatory health research. His research primarily focuses on improving healthcare for US primary care patients (mostly refugees and immigrants) who have limited English proficiency. He has received funding from the National Institutes of Health, the Patient-Centered Outcomes Research Institute, the Robert Wood Johnson Foundation and numerous other foundations. He currently Chairs the Committee on Advancing the Science of Family Medicine and is a Board member of the North American

Primary Care Research Group; and directs the American Academy of Family Medicine National Research Network (a US-based nationwide practice-based research network. He is also the Medical Director and Local Health Officer for Johnson County, Kansas (population 613, 000), and was responsible for public health orders during the COVID-19 pandemic. He loves all things musical and is a self-confessed audiophile. His wife Judy, a retired obstetric and public health nurse, local leader of Community Bible Study, and is a member of the INMED Board. They live in urban Kansas City KS and are active members of and volunteers in the community.