

13.6.1 Epidemiology for Health Informatics Course Syllabus

General Information					
Course Title	Epidemiology for health informatics				
Course Code	PuHe2061				
Degree program:	BSc. in Health Informatics				
Target group	Year II BSc in Health informatics students				
Course ECTS	5 ECTS				
Pre-requisite	None				
Mode of delivery	Block/semester based				
Course Information:	Academic Year: _____ Semester _____ Meeting Day: _____ Meeting Location: _____				
Student Workload:	Lecture	Seminar	Group work/Assignment	Self-study	Total
	48Hrs	10Hrs	23	54Hrs	135Hrs
Instructor's information	Name: _____ Email: _____ Office No. _____ Phone No. _____				
Course description	This epidemiology for health informatics students' course is designed to equip students with the basic concepts of epidemiology, communicable disease epidemiology, measures of disease occurrence, establishment of disease causation, epidemiological study designs, outbreak investigation and management, screening in disease control and epidemiological surveillance. Introduces quantitative measures to determine risk, association and procedures for standardization of rates.				
Course objectives	At the end of the course the student will be able to: ➤ Understand the principles of Epidemiology				

		<ul style="list-style-type: none"> ➤ Describe concepts of disease causation ➤ Calculate the measures of disease and mortality ➤ Understand types of epidemiological study designs ➤ Investigate and control outbreaks and epidemics ➤ Describe the purpose and types of surveillance ➤ Understand the factors that affect validity of studies
Week	Hours	Topics delivered
1	5hrs Lecture=3 Hours Self-study=2hrs	Chapter-1: Introduction to Epidemiology <ul style="list-style-type: none"> ✧ Definition ✧ History of Epidemiology ✧ Use/applications of Epidemiology ✧ Scope of epidemiology ✧ Basic assumptions of epidemiology ✧ Theories disease causation ✧ Levels of disease occurrence ✧ Branches of epidemiology
2	7hrs Lecture=3Hrs Group work=2hrs Self-study=2hrs	Chapter-2: Natural history of disease and levels of prevention <ul style="list-style-type: none"> ✧ Natural history of disease ✧ Stages in the natural history of disease ✧ Levels of disease prevention applications to common diseases
3	8hrs Lecture=3hrs	Chapter-3: Infectious disease cycle <ul style="list-style-type: none"> ✧ The infectious cycle ✧ Spread of disease through person to person transmission

	Seminar=2hrs Self-study=3hrs	<ul style="list-style-type: none"> ✧ Infection vs. disease ✧ Time course of an infectious disease ✧ Carriers and their role in disease transmission ✧ individual and herd immunity
4-5	15hrs Lecture=4hrs Group work=6hrs Seminar=2hrs Self-study=3hrs	Chapter-4: Basic measurements in epidemiology <ul style="list-style-type: none"> ✧ Count, ratio, proportion, and rate ✧ Measures of morbidity ✧ Incidence and prevalence ✧ Measures of mortality ✧ Crude vs. Specific rates ✧ Standardization of rates
6	7hrs Lecture=3hrs Self-study=4hrs	Chapter-5: Source of epidemiologic data <ul style="list-style-type: none"> ✧ Census ✧ Vital records ✧ Data from health institutions ✧ Data from morbidity surveys ✧ Other sources
7-8	20hrs Lecture=6hrs Seminar=2hrs Group work=6hrs Self-study= 6hrs	Chapter-6: Public health surveillance <ul style="list-style-type: none"> ✧ Definition ✧ Purpose of surveillance ✧ Types of surveillance ✧ Activities in surveillance ✧ Modifiable diseases

		<ul style="list-style-type: none"> ✧ The integrated disease surveillance system (IDSR) ✧ Disease Surveillance in Ethiopia
9-10	24hrs Lecture=8hrs Seminar=4hrs Group work=6hrs Self-study=6hrs	Chapter-7: Epidemiological study designs 7.1 Descriptive study designs <ul style="list-style-type: none"> ✧ Definition ✧ Types of descriptive study designs ✧ Case series and case report ✧ Ecologic/Correlational ✧ Cross sectional 7.2 Analytical epidemiology <ul style="list-style-type: none"> ✧ Definition ✧ Application of analytical epidemiology ✧ Types of analytical study designs: ✧ Observational analytic study designs ✧ Case control studies ✧ Cohort studies ✧ Experimental studies ✧ Intervention studies
11-13	22hrs Lecture=6hrs Group work=10hrs Self-study=6hrs	Chapter-8: Measures of association <ul style="list-style-type: none"> ✧ Introduction ✧ Relative risk ✧ Odds ratio ✧ Attributable risk ✧ Attributable risk Fraction

		<ul style="list-style-type: none"> ✧ Population Attributable risk ✧ Population Attributable risk
14	11hr Lecture=4hrs Group work=4hrs Self-study=3hrs	Chapter-9: Epidemic Investigation <ul style="list-style-type: none"> ✧ Definition of terms (endemic, hypo-endemic, hyper-endemic, holo-endemic, cluster of cases, outbreak, epidemic, pandemic) ✧ Types of epidemics ✧ Steps in epidemic investigation ✧ Prevention and control strategies of epidemics
15	8hrs Lecture=4hrs Group work=2hrs Self-study=2hrs	Chapter-10: Analysis of cause effect relationship <ul style="list-style-type: none"> ✧ Validity of studies ✧ Role of chance ✧ Role of bias ✧ Role of confounding factors ✧ Evaluation of overall evidence for a cause-effect relationship
16	6hrs Lecture=4hrs Self-study=2hrs	Chapter-11: Screening in disease control <ul style="list-style-type: none"> ✧ Definition ✧ Diseases appropriate for screening program ✧ Criteria for establishing screening program ✧ Validity and reliability of tests ✧ Sensitivity and specificity ✧ Predictive value of a test

Mode of delivery/method:

Various modes of delivery/methods will be employed during this course.

These includes:

Interactive and illustrative lecture, Brain storming, Buzz group, Discussion, Individual work , Group Presentation, Assignment /Individual & group/

References:

1. Kebede Y, Weldemichael K, Lulu K. Lecture note of epidemiology for health sciences. 2003.
2. Fletcher M. Principles and practice of Epidemiology. Addis Ababa, Ethiopia. 1992.
3. *Greenberg RS, Daniels SR, Flanders WD, Eley JW, Boring JR, III. Medical Epidemiology. 4th edition. McGraw Hill, USA. 2005.
4. Knapp RG & Miller MC III. Clinical Epidemiology and Biostatistics. Williams and Wilkins, Baltimore, Maryland. 1992.

Course Expectations:

Students must avail themselves during all lecture and interactive learning sessions. Notwithstanding problems that are beyond the student's control, a student who misses more than 75% of such sessions will not qualify to sit for a final summative exam. Students must read the provided references before coming to lecture and interactive learning sessions. Assignments must be done carefully and with neatness by consulting the references provided above. Copying assignments from each other will result in nullification of the credit of the assignment for all involved. Sufficient time will be allotted for completion and submission of assignments. Assignments being brought after the set deadline will not be accepted.

4.1. Preparedness: You must come to class, and to the community based on the schedule with fully prepared and ready with the necessary materials and by reading the given assessment

4.2. Participation: Each student is strongly encouraged to actively participate in class room discussion, group work activity, group presentation and community activities.

4.3. Materials: reference materials will be available in the college library.

4.4. Mobile phone: Please turn/off or switch of your mobile phone during class and practical activity.

Summary of Teaching Learning Methods:

The following teaching-learning methods will be in use for this course.

Lectures and other interactive instruction: for the majority of the topics in the course there will be brief lectures given by the instructor(s) as per the schedule given below.

Question and answer in the form of home-take assignment: students will be given two home-take assignments addressing different topics of the course.

Tutorial session: tutorial classes will be arranged to work on home-take assignments and other suggested questions.

Group work and discussion: students will be given group work on selected topic(s) and students should critically refer to the references provided above and others. And they organize their discussion, views, ideas, etc and present it in class to the instructor and other students. Discussions and questions will be raised by the instructor as well as by other students during the presentation.

Reading assignment: the students will be given a reading assignment on a selected topic (see schedule below). The student is expected to thoroughly and critically read on the given topic and submit a written summary on the given topic. The written summary submitted by the student as well as the presentation in class will be used to evaluate the student. Besides, the written exams will address topics covered by a reading assignment too.

Summary of Assessment Methods:

Evaluation of the course will be based on formative progressive assessment and summative assessment methods. Based on the university's decision you will be evaluated by formative / continuous assessment 60%, and summative or final 40 %.

Assessment Arrangement

No	Assessment methods	Marks in %	Assessment time
1	Quiz 1	5	Any week
2	Group work with presentation 1	10	Week 4
3	Test 1	15	Week 6
4	Assignment	15	Week 8
5	Test 2	15	Week 10
9	Final	40	Week 16
	Total	100%	

ASSIGNMENTS:

Giving assignment is one way of student center active learning approach. The overall goal of assignment in this course is to improve students' ability to find solution to a problem. The assignment in this course includes reading assignment, daily response paper, group work assignment, individual assignments. Students are expected to read all assignments prior to the class for which they are assigned. Students may be asked to prepare questions and/or discussion points on aspects of the readings that are particularly interesting and/or requires in-depth discussion. At least one individual assignment will be given. Assignment should be submitted within the scheduled time table. Late submission may result 10%-mark reduction from that particular assignment.

Policies:

Attendances: It is evident that attendance during all class in lecture, presentation and practical session greatly improves the performance of students in the course. Students are expected to attend all theoretical classes and during community practices.

Assignment: The students are expected to carefully read all assignments before the class in which the material is to be discussed. Written assignments should be submitted on time. Any assignment turned in late shall result in an automatic 10 percent reduction from the allocated mark.

Tests/Quizzes: there will be short quizzes and tests at any time during the course. If students miss the quizzes or tests, no makeup test will be given. Final exam will be given on the date scheduled, unless prior arrangements have been made with the students. Petition is mandatory if the students agree to take the final exam before scheduled date.

Cheating/ plagiarizing: any form of cheating on exams, test or quiz, plagiarizing assignment and/or not actively participating in group work and presentation will result in zero mark in that specific assignment or test or exam.