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| Program | Bachelor of science in Public Health | |
| Module category | Core | |
| Module name | Health System Research and Application | |
| Module Code | PubH-M2091 | |
| Module Credit& ECTS | 13cr.hrs &21 ECTS | |
| Course: Epidemiology | Course code: PubH2093 | Cr.hrs: 3 &ECTS: 5 |
| Mode of delivery | Block | |
| Instructor's information | Name: email address: Phone: Office No: | |
| Course Description This course is designed to equip the undergraduate Public Health 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. | | |
| Course objectives After successfully compulsion of this course the students will be able to: 1. Define epidemiology and discuss its importance in medicine and public health 2. Understand and make use of the principles of Epidemiology 3. Describe concepts of disease causation 4. Calculate the measures of disease and death 5. Differentiate types of study design 6. Investigate and control outbreaks and epidemics 7. Describe the purpose and types of surveillance 8. Identify the factors that affect validity of studies | | |
| Prerequisites: | Virtually none. | |
| 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 | | |

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| <p>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.</p> <p>Assignments</p> | | |
| <p>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.</p> <p>Assignments being brought after the set deadline will not be accepted.</p> <p>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</p> <p>4.2. Participation: Each student is strongly encouraged to participate in class room discussion, group work activity, group presentation, community activities.</p> <p>4.3. Materials: reference materials are expected to be available in the library.</p> <p>4.4. Mobile phone: Please turn/off or switch of your mobile phone during class and practical activity. Phone disturbs the flow of the class and practical work.</p> | | |
| <p>Policies:</p> <p>Attendances: It is believed that attendance during all class in lecture, presentation and practical session greatly improves the probability of success in a course. Students are expected to attend all theoretical classes and during community practices</p> <p>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 in from the allocated mark.</p> <p>Tests/Quizzes: You will have short quizzes and tests at the end of each unit or topic, if you miss the class or late to class. You will 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 and it is expected that all students should take the exam</p> <p>Cheating/ plagiarizing: any cheating on an exam, test or quiz, plagiarizing assignment, not</p> | | |

actively participating in group work and presentation will result in zero mark in that specific assignment or test or exam etc.

Schedule:

| Days | Topics/contents/ | Contact Hrs. | Reference Materials | Evaluation and summary questions |
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| Day I | Introduction to epidemiology: definition, history, use, scope, etc. | 4 | References 'a' or 'b' or 'c' or combination. | - What is epidemiology? What is historical milestones did it pass through before attaining its current level? - Is epidemiology of importance to public health professionals? In what aspects? |
| Day II | - Natural history of disease and levels of prevention - The infectious disease cycle | 4 | References 'a' or 'b' or both | - What is natural history of disease? What are the stages in the natural history of disease? What are the levels of disease prevention? How do they apply in the prevention of common diseases? What are the components of the infectious disease cycle? |
| Day III | Basic measurements in epidemiology:; ➤ Number , ratio, proportion , and rate ➤ Measures of frequency (disease occurrence)-Measures of morbidity – incidence and prevalence ➤ Measures of mortality – crude vs. specific rates | 4 | References 'a' or 'b' or 'c' or combination. | - What are the types of measurements we have in epidemiology? What do they quantify? What measures of frequency (disease occurrence) are in common use? How do they apply with |
| Days | Topics/contents/ | Contact Hrs. | Reference Materials | Evaluation and summary questions |
| – Standardization of rates | regard to the different study designs? - What are standardization concepts? | | | |
| Day IV | Sources of epidemiologic data | 4 | References 'a' or 'b' or both. | - What are the common sources of epidemiologic data? |

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| | | | | What are the advantages and limitations of the different sources? |
| Day V | Public health surveillance | 4 | References 'a' or 'b' or 'c' or combination. | - What is surveillance? What are the types of surveillance? What is surveillance used for? What is the status of disease surveillance in Ethiopia? |
| Day VI& VII | Epidemiologic study designs: descriptive designs , analytic designs | 8 | References 'a' or 'b' or 'c' or combination. | - What are epidemiologic study designs? What are the different types of study designs? What are the advantages and limitations of each design? |
| Day VIII | Epidemiologic Measures of association | 4 | References 'a' or 'b' or 'c' or 'd' | What are measures of association? What do they quantify? What measures of |
| Days | Topics/contents/ | Contact Hrs. | Reference Materials | Evaluation and summary questions |
| combination. | association are in common use? How do they apply with regard to the different study designs? | | | |
| Day IX | Analysis of cause-effect relationship | 4 | References 'a' or 'b' or 'c' or combination. | What is cause-effect relationship? What criteria are used to establish a cause-effect relationship? |
| Day X | Screening in disease control | 4 | References 'a' or 'b' or 'c' or 'd' combination. | What is screening? What is the difference between diagnosing and screening? What screening used for? How is the validity and reliability of screening tests established? How about sensitivity, specificity and predictive values? |
| Day XI | Epidemic investigation | 4 | References 'a' or 'b' or both. | What is an epidemic? What are the types of epidemics? How are epidemics investigated? |
| every day afternoon | Private study | | | |
| Day XII | Evaluation + Final summative written | | | |

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| | exam | | | |
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Summary of Teaching Learning Methods:

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

organize their opinions, views, ideas, etc and present it in class to the instructor and other students.

Discussions and debates will go on in class based on the presentation.

v. Reading assignment: the students will be given a reading assignment on one selected topic (see schedule below). Here the learner is expected to thoroughly and critically read on the given topic and submit a written summary on the given topic. There may also be presentation in class to all students and the instructor. 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.

Required Texts:

a. Kebede Y, Weldemichael K, Lulu K. Lecture note of epidemiology for health sciences. 2003.

b. Fletcher M. Principles and practice of Epidemiology. Addis Ababa, Ethiopia. 1992.

c. Greenberg RS, Daniels SR, Flanders WD, Eley JW, Boring JR, III. Medical Epidemiology. 4th edition. McGraw Hill, USA. 2005.

d. Knapp RG & Miller MC III. Clinical Epidemiology and Biostatistics. Williams and Wilkins, Baltimore, Maryland. 1992.

e. Hennekens C. Epidemiology in Medicine.

f. Bonita R. Basic Epidemiology, 2nd ed.

g. Woodward M. Study Design and Data Analysis, 2nd ed.

h. Gregg. M. B Field Epidemiology 2nd ed. Oxford University Press, 2002.

i. Rothman K. J. Greenland S. Modern epidemiology 3rd ed, Lippincott Williams & Wilkins 1998.

j. Center for Communicable Diseases prevention and Control. Principles of Epidemiology: An introductory to applied

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

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

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

iv. Group work and discussion: students will be given a group work on selected topic(s) and then they will go to the library and look for reference materials and read critically on the topic. They will then