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### თბილისის ჰუმანიტარული სასწავლო უნივერსიტეტი

**TBILISI HUMANITARIAN TEACHING UNIVERSITY**

**Syllabus**

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| **Name of the course /module** | **Epidemiology with Biostatistics** |
| **Code of the course** | **GCM0418DM** |
| **Status of the course**  **(elective/compulsory)** | **C**ompulsory course  for the one-cycle higher educational Programme-Dentistry |
| **ECTS** | **2 credits.Total: 50 hours**  Contact Hours–34 hours (Class Meeting Time Period:15L/15Pr. + 4 hours) (Midterm:2h and Final Examinations 2h):  Individual Work–16 hours |
| **Authors (lecturer)** | Nana Jincharadze - MD, Ph.D, THTU associated professor  Tel.591216358.  Consultation days: according to consultation schedule - Wednesday, 13.00-15.00 |
| **Aim of the course** | The course aims to introduce the students the modern views epid processes infectious diseases caused by environmental factors, and the distribution and frequency of chronic diseases, to learn theoretical basis on disease insuring prevention and healthy lifestyles and develop insuring the necessary competencies. |
| **Program prerequisits** | N/A |
| **Assessment system and criteria** | **Assessment system of the Tbilisi Humanitarian Teaching University's**is divided into the following components:  The total marks of the mid term Out of the overall assessment (100 points ) is 60 points, which includes three kinds of grades:  **Student’s activity during a semester**  **One-midterm exam**  **final exam**  Theminimum competence requirement for mid termevaluation components is at least 18 points in total.  **The minimum competence requirement of the final evaluation is 50% of the total mark from final evaluation that means 20 points out of 40.**  Evaluation System includes:  I. Five Forms of Positive Assessment:  (A) Excellent – 91% and more from maximum evaluation  (B) Very good – 81-90% from maximum evaluation  (C) Good – 71-80% from maximum evaluation  (D) Satisfactory – 61-70% from maximum evaluation  (E) Sufficient – 51-60% from maximum evaluation  II. Two Forms of Negative Assessment:  (A)(FX) Fail (Not passed ) - 41-50 from maximum evaluation score, which means that the student will need to work more and to retake the test after additional independent work;  (B) (F) Fail – A student gets 40 points, or less from maximum evaluation, which means that the work done by him/her is not sufficient and s/he has to retake the course from the beginning.  1. One of the negative assessment: In case of not passing, the University fixes additional exam at least in 5 days, after the announcement of final examination results, which must be published in the examination table.  2. The grades, which student gets after additional test is a student's final grades, in which is not considered the negative points of the major examination.  If a student receives from 0 to 50 points after additional test, in the final exam sheet is formed (F) -0 for the student. |
| **Course description** | appendix 1 |
| **Assessment system/activities, methods**  **and criteria** | A student’s final grade is obtained as a result of summing the midterm evaluation earned per semester and final exam evaluation results.  The sum of the course assessment (100 points) breaks down as follows:   * **Activities – 30 points** (participation, presentation, quiz) * **Midterm exam - 30 points** * **Final Exam - 40 points**   **Activities/Participation** - maximal **15points,** is calculated in accordancewith the level of being active during each practices(once a week, total number 15) type of activities can be answering questions, participation in discussion, participation in everyday testes - is equal **1 points**.  1 points - s/she is active during classes, obtains perfect knowledge of the ongoing topic, answers all questions completely.  0,5 points - s/he is less active during classes, does not present perfect knowledge of the ongoing topic, answers questions partly.   1. - s/he is less active during classes/group works, does not present perfect knowledge of the ongoing topic, does not answer any questions.   **Presentation** -**5 points,**The presentation is assessed using next criteria:  **the contentof the presentation, the use of modern scientific literature- 2 points**  2 points - the presentation has complete data, marked by different sources of use, subject fully covered.  1 point - the data is limited, findings are not currently, less than source used;  0 points - generally there is a single source used, the content is not properly conveyed  **design of the presentation -1 points**  1 point - External Wallpaper well-perceived, the slides are relevant to the topic, the slides used in the various types of credit facilities: animations, images and so forth.  0 point - the title is not signed, slides and other facilities are not used.  **presentation skills - 2 points**  2,0 points - freely attracts attention of the audience, answers all questions well. Contact with the audience is based on effective, correct speech, good and interesting,the audience reaction is adequate.  1,0 point - has difficulties in communication with the audience, contact with the audience is weak, sometimes boring, the problems are not being raised, the audience is experiencing difficulty.  0 points – s/he is not ready to communicate with the audience, the audience did not heed the presentation.  **Quiz – 10 points,** are carried out **twice during semester**, student can get for one quizmaximal 5 points (5X2=10). Evaluation is performed by using questionnaires in written form, in each questionnaire there are 10 questions, each is appraised by 0,5 points.  **Midterm exam - 30 points** administered in writtenform. The questions from covered material and each of the 30 points. Each correct answer is evaluated with 1 point, wrong answer -0 points.  **Final Exam - 40 points**  administered in writtenform. The questions from covered material and each of the 40 points. Each correct answer is evaluated with 1 point, wrong answer -0 points. |
| **Core literature:** | 1. 1. Public Health and Preventive Medicine, R.B.Wallace, N.Kohatsu-15 Edition. P.155-492. 2. 2. Public Health Informatics and Information Systems – P.W. O’Carroll, W.A. Yasnoff et al. 2002   3. Basic Environmental Health, A.Yassi, T.Kjellstrom, Th. de Kok, oxford university press, 2001,   1. 4.Public Health and Preventive Medicine, R.B.Wallace, N.Kohatsu, 15th ed. 2008. |
| **Additional literature** | 1. Leon Gordis. Epidemiology (third edition). ELSEVIER SAUNDERS, Philadelphia, Pennsylvania. 2004 2. Environmental medicine – M.Gochfeld, J.Herzstein et al. 1995. 3. Clinician’s Handbook of Preventive Services. Put prevention into practice. U.S. department of Health and Human services. Public Health Service. Office of Disease Prevention and Health promotion.   Internet sources:  World Health Organization http://www.who.int/topics/health\_promotion/en/  WHO European Region, Copenhagen www.who.dk  American College of Preventive Medicine  http://www.acpm.org/ |
| **Learning outcomes, competences**  **(general and field specific)** | .  **Knowledge**   1. Student describes the modern views epid processes infectious diseases caused by environmental factors; 2. Student determines the ways of distribution and frequency of chronic diseases; 3. Student describes a medical-preventive treatment facility and epidemiological organization;   **Skills**   1. Student applies general principles of epidemiological approaches; 2. Student organizes First Aid Measures during inflectional and epidemiological disease; 3. Student applies epidemiology and biostatistics for infection control; 4. Student performs analysis by preparation and application of tables, graphs and charts.   **Responsibilities**   1. Student recognizes our responsibilities to strictly follow the principles of preventive epidemiological disease. |
| **Learning/Teaching methods** | Lecture/ practical  Individual/Group work  Verbal teaching method  Demonstration of study materials  Presentation  Explanation methods  Discussion/debate |

**Appendix1**

**Course description:**

**Topics of the lecture, practical classes/laboratory work/working group, literature**

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| **Week №** | **Type of**  **the class** | **Topics** | **Contact hours** | **literature** |
| **Iweek** | Lect. | General Principles of Epidemiology. The historical context. Definition and scope of epidemiology. Achievements in epidemiology. Definitions in Epidemiology | **1** | **1** |
| Pract. | Interact Macro- and microorganisms with the environment, the epidemiology of infectious diseases; Transmission endogenous infection, exogenous sources of infection. | **1** | **1** |
| **IIweek** | Lect. | General Principles of Epidemiological approaches, Organizing Epidemiologic data. Preparation and application of tables, graphs and charts. | **1** | **1** |
| Pract. | Arrangement of Infection control programs at the preventive institution level. Morbidity detect instances (active and passive methods), data collection, analysis and interpretation | **1** | **1** |
| **IIIweek** | Lect. | General Principles of Biostatistics. Sources of variation in medicine. Statistics and variables. Use Epidemiology and Biostatistics for infection control | **1** | **1** |
| Pract. | The types of economic analysisassociated with Hospital infections.Quantitative and Qualitative Data. Types of variables. Frequency Distributions of continuous Variable. Measures of Central Tendency. Measures of Dispersion; | **1** | **1** |
| **IV week** | Lect. | Outbreak investigation; Reasons, objectives and the basic stages of production; role of microbiology Labs in infection control. | **1** | **1** |
| Pract. | Modern quantitative methods of hospital Epidemiology: descriptive study, analysis (correlation, prevalence, case-control, cohort) and experimental studies. | **1** | **1** |
| **V week** | Lect. | Surveillance - total and periodic supervision, prevalence survey, targeted epidemiological surveillance according localization of infection or type of pathogen. | **1** | **1** |
| Pract. | Descriptive epidemiology: Person, place, time; Measures of morbidity and mortality used in epidemiology; Analytical Epidemiology - Cohort studies, Case-control, Cross-sectional Design of the studies. Calculation of the relative risk and the odds ratio. **Quiz** | **1** | **1** |
| **VIweek** | Lect. | Surveillance system and its key components. Infectious diseases Epidemiology and Control. Infectious disease process: Etiologic agent. Reservoir. Routs of transmission. | **1** | **1** |
| Pract. | Data analyses and interpretation. Exercise: Introduction to Analysis and Interpretation of Surveillance Data. Basic principles of microbiologic laboratory | **1** | **1** |
| **VII week** | Lect. | Administrative data collection systems. Data analyses and interpretation. | **1** | **1** |
| Pract. | Epid organizational measures for cupping Blast. Epidemiological Diagnosis; Identification of the pathogen; Place / time / participants identified | **1** | **1** |
| **VIII week** | **Midterm** | | **2** |  |
| **IX week** | Lect. | Analytical Epidemiology. Cohort studies. Calculation of relative risk. Exercise: Cigarette Smoking and Lung Cancer. The process of testing Hypotheses. The null Hypothesis and the alternative hypothesis. | **1** | **1** |
| Pract. | Analytical Epidemiology. Case-control, Cross-sectional; Calculation of the odds ratio. Experimental studies; Exercise: Cigarette Smoking and Lung Cancer. | **1** | **1** |
| **X week** | Lect. | The main causative agents of hospital infections (bacteria, fungi); Epidemiology (risk groups and risk factors, the transmission source, and the way factors). Epidemiology and prevention of blood and sexually transmitted disease. | **1** | **1** |
| Pract. | Gram-positive (staphylococcus, streptococcus, enterococcus) and Gram-negative (colon bacillus, Salmonella, shigell, Klebsiella) bacteria.**Presentation** | **1** | **1** |
| **XI week** | Lect. | Epidemiology and prevention of hospital infections according to the localization of the disease process (surgery-related infections). | **1** | **1** |
| Pract. | Fungal, candidiasis diagnostic criteria | **1** | **1** |
| **XII week** | Lect. | Infectious diseases epidemiology  Diseases surveillance system. Six types of health information systems: notifiable diseases systems, Vital statistics, Sentinel surveillance, chronic disease registries, Health surveys, Administrative data collection systems. Data analyses and interpretation. | **1** | **1** |
| Pract. | Infectious diseases Epidemiology and Control. Infectious disease process: Etiologic agent. Reservoir. Routs of transmission.  Morbidity detect instances (active and passive methods), data collection, analysis and interpretation | **1** | **1** |
| **XIII week** | Lect. | Epidemiology and prevention of Hospital infections specialized agencies and hospital support services. | **1** | **1** |
| Pract. | Prevention of infection in specialized institutions (intensive care / burn unit, obstetric hospital; infectious and psychiatric institutions, hemodialysis unit). **Quiz** | **1** | **1** |
| **XIV week** | Lect. | Safety of medical staf, prevention of infection ancillary services (blood transfusion cabinet; Hospital Pharmacy; laundry, waste disposal) | **1** | **1** |
| Pract. | Investigating an Outbreak  Levels of prevention: Primary, secondary and tertiary prevention. Immunization.  Epidemiologic characteristics of some infectious diseases: STI, Aids | **1** | **1** |
| **XV week** | Lect. | Investigating an Outbreak.  Response and Control. Immunization | **1** | **1** |
| Pract. | Disinfection and sterilization, as well as medical. Staff hand washing / review of orders the Ministry of Labour, Health and Social Affairs of Georgia. | **1** | **1** |
| **XVI week** | Lect. | Rational use of antimicrobial drugs. Control Strategies. | **1** | **1** |
| Pract. | The mechanisms of action of antimicrobial drugs, to determine the sensitivity of microorganisms to antimicrobial drugs. The basic principles for theantimicrob treatment (drug selection, empirical treatment, side effects), antimicrob prevention and mechanisms of antimicrob resistance. | **1** | **1** |
| **XVII - XVIII week** | **Final Exam** | | **2** |  |
| **XIX-XXweek** | **Additional exam** | |  |  |