Information sheet for the course
Fundamentals of Hygiene and Epidemiology

University: *Alexander Dubček University of Trenčín*

Faculty: *Faculty of Health Care*

Course unit code: *ZHEP/e*

Course unit title: *Fundamentals of Hygiene and Epidemiology*

Type of course unit: *compulsory*

Planned types, learning activities and teaching methods:
Lecture:2 hours weekly/ 26 hours per semester of study; full-time
Seminar: 2 hours weekly/ 26 hours per semester of study; full-time

Number of credits: *4*

Recommended semester: *6th semester in the 3rd year (part-time)*

Degree of study: *I (bachelor)*

Course prerequisites: *none*

Assessment methods:
The student will acquire 50 points per semester
- writing an essay on the topic of public health (10 points)
- oral examination (40 points)

Score:
50 – 48 points – A
47 – 44 points – B
43 – 41 points – C
40 – 38 points – D
37 – 35 points – E
34 and fewer points - FX

Learning outcomes of the course unit:
Student is able to:
1. *Gaining basic knowledge in the field of public health*
2. *Identifies measures to preventing the occurence and spread infectious diseases, nosocomial infections and ways of create healty living and working conditions.*

Course contents:
Lecture:
1. *Introduction to Public Health, definition and object of public health, determinants of health, public health. General epidemiology, primary, secondary and tertiary prevention. Infection: forms and phases, the originator of the disease, pathogenic microorganisms, laboratory diagnostics of disease.*
2. *Immunity: types: specific, non-specific, natural, artificial, method of antibody persistence, antibody types.*
3. *Vaccinology: the importance of the principal objectives, types of vaccination. Vaccines: breakdown by type of antigen, the amount of antigen vaccine live, not live, their differences, advantages and disadvantages, kinds and types of vaccines, the importance of additives in vaccines, administration of the vaccine, the intervals between vaccination, vaccination reactions, contraindications, storage, cold chain.*
4. *The process of spreading the agent of the disease: basic characteristics, mechanisms of transfer (contact, inhalation, inoculation, ingestion).*
5. *The specifics of the process of infection in a hospital environment.*
6. *Working on the outbreak, anti-epidemic measures – their focus, transmission factor, transfers vector, natural and social factors in the spread of the disease process, forms the disease.*

Outbreak- measures, investigating epidemics, epidemiological surveillance.

7. *Nosocomial infections: definition, CDC classification, risk factors, division, characteristic of the species infectious agents - their characteristics.*
8. *Distribution nosocomial infections: lower respiratory tract infection and pneumonia, urinary tract infection, infection, surgical site infections, bloodstream / stream gastrointestinal disease, infection of the skin and mucous membranes, the other, the precautionary principle.*
9. *Nosocomial infections surveillance, hospital epidemiologist, epidemiology nurse monitoring methods nosocomial infections. The most common nosocomial epidemics, examples, anti-epidemic measures.*
10. *Disinfection,* principle of disinfection*, types of disinfectants, distribution of medical devices in view of appropriate disinfection. Disinfection of small and large areas and surfaces, disinfection of medical devices. Hand disinfection,* high-level disinfection*, disinfection upon the occurrence of certain nosocomial pathogens (MRSA, VRE, G-negative bacteria, enteric viral infections ...) Characteristics of disinfectants used in health care.*
11. *Sterilisation: preparation of sterile medical device, meaning of presterilization preparation of instruments, packaging, sterilization indicators.*
12. *Sterilization: sterilization kinds and types, advantages and disadvantages of each method and differences between individual types, control of sterilization, principles and processes of sterilization of thermolabile device.*
13. *Occupational diseases of health care workers; physical, chemical and biological factors, which affecting human health and work performance of humans in the work; prevention measures; vaccination of healthcare personnel.*

Exercises:

1. *Epidemiologic investigation of injuries in healthcare workers with blood contaminated objects - development of medical surveillance, bloodborne infections risk assessment, proposal for laboratory tests in medical supervision.*
2. *Practical exercise: selection of laboratory methods to confirm the diagnosis of serious communicable diseases in terms of speed, efficiency, and sensitivity and specificity of the methods, the procedure for cooperation with the NRL for selected disease and with specialized laboratories, the reasons for sending samples (examples of meningococcal infections, pneumococcal infections, HCV, rotavirus enteritis).*
3. *Check the sterilization process hot air sterilizer, a steam sterilizer, using physical, chemical and biological control systems, fill-in-the-blank cover letters, sample cultivation plan, evaluation of physical parameters and chemical indicators, establishment of protocol for sterilization,*
4. *Monitoring the efficacy of chemical disinfection methods, microbiological methods, sample the disinfectant to verify the effectiveness of hospital pathogens, show the method to determine efficacy of disinfection*
5. *Hand hygiene of healthcare workers, proper hand hygiene practices, fluorescence inspection methods, hand contamination levels measured using the palm imprint method followed by bacteriological culturing samples.*
6. *Model situation- solution nosocomial outbreaks of diarrhea caused by Cl. difficile, proposal anti-epidemic measures with emphasis on laboratory diagnosis in diarrheal diseases nosocomial origin and selection of hand hygiene disinfectant, medical devices and the , occurrence of spore-forming bacteria in the environment (option to work in small groups: a solution nosocomial infections, caused by MRSA).*
7. *Individual presentation training. Presentation of work.*

Recommended of required reading:

1. *EGNEROVÁ, A. a kol. Epidemiológia - základy a metódy. Bratislava: vydal SZU, 2006.*

178 s. ISBN 80-89171-43-5.
2. *M. ŠULCOVÁ, I. ČIŽNÁR, E. FABIÁNOVÁ a kol.Verejné zdravotníctvo. - Bratislava : VEDA, 2012. 654 s. ISBN 978-80-224-1283-4.*
3. *NOVÁKOVÁ, E., KLEMENT, C., OLEÁR, V. Lekárska vakcinológia nielenpre medikov. Banská Bystrica: Vydavateľstvo PRO 2007. 114 s. ISBN 978-80-89057-18-4.*
4. *BERAN, J., HAVLÍK, J. A KOL.: 2008. Lexiconočkování. Praha: MAXDORF s.r.o., 2008. 350 s. ISBN 978-80-7345-164-6.*
5. *ŠTEFKOVIČOVÁ M. Dezinfekcia a sterilizácia - teória a prax – II. Žilina: vydavateľstvo Vrana, s.r.o., 2007. 164 s. ISBN 978-80-968248-3-0.*
6. *MAĎAR R., ŠTEFKOVIČOVÁ, M a kol. Nemocničné infekcie - vybrané kapitoly. Banská Bystrica: Agentúra DUMAS, 2004. 141 s. ISBN 908999-1-0.*
7. *ŠRÁMOVÁ H. a kol. Nozokomiální nákazy II. Praha: MAXDORFs.r.o., 2001. 303 s. ISBN 80-85912-25-2.*

Časopisy: Sestra, Nemocničné nákazy, Vakcinologie

Language: *Slovak*

Remarks:

Evaluation history: *Number of evaluated students -*

A	B	C	D	E	FX
-	-	-	-	-	-

Lectures: *doc. MUDr. Mária Štefkovičová, PhD., MPH.*

Last modification: *22.4.2014*

Supervisor: *doc. MUDr. Jana Slobodníková, CSc.*