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|  | | | **UNIVERSITY OF EAST SARAJEVO**  **Faculty of Medicine Foča** | | | | | | | | | | | logo | | | |
| ***Study program: Nursing*** | | | | | | | | | | |
| First study cycle | | | | | | First study year | | | | |
| **Full subject title** | | | MICROBIOLOGY AND IMMUNOLOGY | | | | | | | | | | | | | | |
| **Department** | | | Department of Propedeutics, Faculty of Medicine Foča | | | | | | | | | | | | | | |
| **Subject code** | | | | | | **Subject status** | | | | | **Semester** | | | **ECTS** | | | |
|
| NU-05-1-009-2 | | | | | | compulsory | | | | | II | | | 5 | | | |
| **Professor/ -s** | | Nebojša Arsenijević, Full Professor; Ivan Jovanović, Associate Professor; Ružica Lukić, Assistant Professor | | | | | | | | | | | | | | | |
| **Associate/ -s** | | Zorana Marić Ostović, Assistant | | | | | | | | | | | | | | | |
| **Number of lectures/ teaching workload (per**  **week)** | | | | | | | **Individual student workload (in hours per**  **semester)** | | | | | | | | | **Coefficient of student**  **workload So1** | |
| **L** | **E** | | | | **SP** | | **L** | | | **E** | | **SP** | | | | **L** | |
| 2 | 2 | | | | 0 | | 25 | | | 25 | | 40 | | | | 0,83 | |
| total teaching workload (in hours, per semester)  30+30+0=60 | | | | | | | | total student workload (in hours, per semester) 25 + 25+40 =90 | | | | | | | | | |
| Total subject workload (teaching + student): 60+90= 150 hours per semester | | | | | | | | | | | | | | | | | |
| **Learning outcomes** | | After completing the course, the student will be able to:   1. Recognize possible causes of infectious diseases within the clinical manifestations. 2. Determine the type of patient material for diagnosing the disease. 3. Describe basic microbiological and immunological techniques. 4. Correctly interpret microbiological findings. | | | | | | | | | | | | | | | |
| **Preconditions** | | No preconditions | | | | | | | | | | | | | | | |
| **Teaching methods** | | Lectures, exercises, discussions, team work, group work, independent work, consultations, pedagogical practice. | | | | | | | | | | | | | | | |
| **Садржај предмета по седмицама** | | **Lectures:**   1. General properties and components of the immune system. Terms and vocabulary. Primary and secondary immune response. Innate and acquired immunity. Cells and tissues of the immune system. Major histocompatibility complex. 2. Cellular and humoral immune response. Effector mechanisms of cellular and humoral immunity. 3. Immune response to tumors and transplanted tissues. 4. Classes of antibodies; functions of antibodies at specific anatomical sites; application of antibodies in prophylaxis and therapy. Definition and classification of vaccines. Active and passive immunization; intravenous immunoglobulins. Side effects and contraindications for immunoglobulin use. 5. Specifics of cell wall structure in Gram+ and Gram- bacteria. Bacterial genome. Normal microflora. Infection. Pathogenicity. Exotoxins, endotoxins. 6. Bacterial virulence factors. Mechanisms of antibacterial action of antibiotics and chemotherapeutics. Mechanisms of bacterial resistance to antibiotics. 7. Most common causative agents of bacterial meningitis. Most common cause of bacterial pneumonia. Angina syndrome. (Streptococcus spp, Staphylococcus spp, Pneumococcus spp, Neisseria spp...) 8. Most common causative agents of bacterial invasive gastrointestinal infections and secretory diarrhea. (Enterobacterales, ...) 9. Tuberculosis, tetanus, and botulism. Bacterial infections of the urogenital system (Enterobacterales spp, Chlamydia spp, Mycoplasma spp, Ureaplasma spp....). 10. Types of vaginal secretions. Nosocomial infections. Methods for preventing and controlling the spread of nosocomial infections. 11. Protozoal infections. Malaria. Helminth infections. 12. Opportunistic fungal infections; subcutaneous, cutaneous, and superficial mycoses. 13. Structure and classification of viruses. Virus and cell relationship. Types of infections and pathogenesis. Viral infections of the central nervous system. 14. Viral hepatitis. Rubeola: clinical course specifics. 15. Viral respiratory infections. Infectious mononucleosis. HIV virus.   **Exercises:**   1. Introduction to immunology. Terms and vocabulary. Primary and secondary immune response. 2. Role of professional medical nurses/technicians in the prevention of transplant rejection. 3. Mandatory vaccination schedule. Side effects of vaccination. 4. Collection and transportation of material for bacteriological examinations - techniques for collecting samples. 5. Methods of antibiogram testing. Interpretation of antibiogram results. 6. Collection of material when anaerobic bacteria are suspected as the causative agent. 7. Collection of urine and feces for bacteriological examination. Collection of tissue samples, organs, wounds, and burns. (Enterobacterales, …..) 8. Collection of cerebrospinal fluid for bacteriological examinations. (Staphylococcus spp, Streptococcus spp, Enterococcus spp, Neisseria spp........) 9. Methods for preventing and controlling the spread of nosocomial infections and multiresistant bacteria. 10. Collection and transportation of material in cases of suspected protozoan and helminth infections. 11. Collection and transportation of material in cases of suspected fungal infections. 12. Collection, sending, and processing material for virological examinations. 13. Blood collection for serological analyses. General principles of serological diagnosis of viral diseases. (Antigen-antibody reactions) 14. Procedures for diagnosing and managing nosocomial infections. 15. Sepsis and septic shock (blood cultures). | | | | | | | | | | | | | | | |
| **Compulsory literature** | | | | | | | | | | | | | | | | | |
| Author/s | | | | **Publication title, Publisher** | | | | | | | | | Year | | | Pages (from-to) | |
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| N. Cary Engleberg, Walters Kluwer, | | | | Schaechter's Mechanisms of Microbial Disease | | | | | | | | | 2012 | | |  | |
|  | | | | Presentations and Word texts | | | | | | | | |  | | |  | |
| **Additional literature** | | | | | | | | | | | | | | | | | |
| **Author/s** | | | | **Publication title, Publisher** | | | | | | | | | **Year** | | | Pages (from-to) | |
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| **Student obligations, types of student assessment and grading** | | **Grading policy** | | | | | | | | | | | **Points** | | | | **Percentage** |
| Pre-exam activities | | | | | | | | | | | | | | | |
| lecture/exercise attendance | | | | | | | | | | | 10 | | 10% | | |
| laboratory work/laboratory exercises | | | | | | | | | | | 40 | | 40% | | |
| Final exam | | | | | | | | | | | | | | | |
| written | | | | | | | | | | | 50 | | 50% | | |
| Total | | | | | | | | | | | 100 | | 100 % | | |
| **Certification date** | | December 2024. | | | | | | | | | | | | | | | |