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| **Course code: FFS60** | **Course title: SELECTED TOPICS IN DRUG BIOCHEMISTRY - PHARMACOGENOMICS AND PERSONALISED MEDICINE** | | | |
| **Level: Undergraduate** | **Year:**  **IV** | **Semester:**  **VIII** | **ECTS credits:**  **2** | |
| **Status:**  **Elective** | **Number of hours weekly: 1+1**  **(Lectures + practical classes)** | | **Total hours of teaching: 30** | |
| **Teaching staff:** | Associate professor Tanja dujuć, PhD  Teaching assistant Selma Imamović, MPharm | | | |
| **Course objectives** | This course is designed to introduce students to the various aspects of pharmacogenomics and personalised drug therapy, as well as their importance in a patient-centred therapeutic approach.  Pharmacogenomics explore how a patient's genotype affects response to drug therapy. The possibility of genetic testing opens the door to pharmacogenetics in predicting risks, benefits and indications in drug selection and leads to personalised treatment of various diseases. | | | |
| |  | | --- | | **1.1. Curriculum** | | a) Lectures | | b) Seminars  - Pharmacogenetics basics: The impact of genetic variations on drug metabolism and disposition  - Drug interactions - pharmacogenomic aspects  - Drug side effects - influence of genetic polymorphisms of drug-metabolising enzymes and drug transporters  - Ethnic pharmacogenomics  - Use of personalised medicines  - Pharmacogenetics in clinical practice - Selected Topics (Haematology, Oncology, Psychiatry, Type 2 Diabetes, Cardiovascular Diseases)  - The importance of pharmacogenomics in drug discovery and development: Modern trends in pharmacy  - Potential ethical, social and legal issues related to the pharmacogenomics  - Selected topics from clinical practice - Discussion and learning through case studies | | | | | |
| **1.2. Learning outcomes** | Based on the acquired knowledge related to the basics of drug metabolism and disposition and their regulation, the student will:  -Understand the importance of pharmacogenetics and pharmacogenomics for the adequate response to drug therapy, especially from the aspect of genetic variations of drug-metabolising enzymes and drug-transporting proteins, prevention of side effects and improvement of drug efficacy  -Be able to propose tests to evaluate the possibility and degree of metabolism of a drug  -Be able to see the benefits of such testing for the purpose of personalised patient treatment and more effective and safer drug therapy | | | |
| **2. Course organisation** | | | | |
| **2.1. Structure of the course** | Lectures  Seminars | | | 75%  25% |
| **2.2. Grading** | Final exam (2h)  Seminar  Homework  Class attendance and participation  **Total** | | | 50%  25%  20%  5%  100% |
| **3. LITERATURE** | | | | |
| Mandatory:  1. Textbook: S.Semiz, A.Čaušević "Farmakogenetski aspekti biohemije lijekova", Sarajevo, 2012.  Additional:   * Hall, I.P. & Piromohamed, M. Pharmacogenetics, Taylor &FrancisGroup, New Yourk, 2006. * Ionescu, C., and Caira, M.R. Drug Metabolism – Current Concepts, Springer, 2005. * Online-e.g., PubMed | | | | |
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