**Student elective courses (SEC) for the academic year 2020-2021**

Specialty: "Pharmacy" 1 course

Each student must earn 1 credit (ECTS) during the semester

List and annotations of elective courses to choose from

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|  |  | **2 semester (1cr)** |
| No. | Credits | **Department name** | **SEC name** | **Annotations**  |
| **1** | **1** | Department philosophy and social sciences | Fundamentals of Spiritual and Moral Culture in Medicine | In the modern conditions of our life, the role of morality and ethics acquires special significance. Unlike all other theoretical forms of knowledge, culture serves as a means of expressing the essence of consciousness and self-awareness of the era. A change in the nature of a social epoch, its historical stage, leads to a change in the very content of the moral worldview. Morality is a specific form of analysis of social processes, their direction. These topical issues of our time are discussed in this course. |
| **2** | **1** | Department fundamental and clinical physiology | Physiology of nutrition | The elective course acquaints students with the main physiological effects, the energy value of nutrients, nutritional norms, the physiological needs of the body for plastic substances and the basics of a balanced rational diet, as well as the physiological role of vitamins and microelements. |
| **3** | **1** | Department Kyrgyz language | Speech culture | Aimed at the formation of the culture of speech in the teaching of the Kyrgyz language, logical speaking, enrichment of vocabulary, grammatical writing skills, teaching to write documents correctly, deepening knowledge in the specialty. |
| **4** | **1** | Department FGZ and HLS | The doctrine of solutions | The elective course is aimed at studying the foundations of the modern doctrine of solutions, knowledge of which is necessary for a pharmacist, since biochemical processes in the body occur in solutions, many drugs are solutions. The section is also important for understanding the role of ionic, including acid-base, interactions in drug metabolism, in the analysis of drugs, in the preparation of dosage forms. |
| **5** | **1** | Department physics, mathematics, computer science and computer technology | Information and communication technologies in pharmacy | The elective course is aimed at developing students' general ideas about the possibilities of using information and communication technologies that provide ample opportunities for processing medical and pharmaceutical information, mastering the techniques of working with modern standard software packages. |

Specialty: "Pharmacy" 3 course

Each student must earn 1 credit (ECTS) during the semester

List and annotations of elective courses at the choice of students

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|  |  | **5 semester (1cr)** |
| No. | credits | **Department name** | **SEC name** | **Annotations**  |
| **1** | **1** | Department biochemistry with a course in general and bioorganic chemistry | The role of vitamin-like substances, macro- and microelements in metabolism | This elective course will allow you to study in depth the role of vitamin-like substances, macro- and microelements, the mechanisms of metabolic disorders in the human body with their deficiency or excess. |
| **2** | **1** | Department microbiology, virology and immunology | Determination of the microbiological purity of pharmaceuticals. | This elective course provides for the study by students of the concepts of the sterility of sterile drugs and the microbiological purity of non-sterile pharmaceuticals.  |

Specialty: "Pharmacy" 3 course

Each student is required to gain 3 credits (ECTS) during the semester

List and annotations of elective courses at the choice of students

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|  |  | **6 semester (3cr)** |
| No. | credits | **Department name** | **SEC name** | **Annotations**  |
| **1** | **1** | Department hygiene disciplines |  Fundamentals of Nutrition | The elective course is aimed at studying the medical and biological foundations of human nutrition, the theory of nutrition, the mechanisms of action of micro- and macronutrients on the human body. |
| **2** | **1** | Department Kyrgyz language | Speech culture | Aimed at the formation of the culture of speech in the teaching of the Kyrgyz language, logical speaking, enrichment of vocabulary, grammatical writing skills, teaching to write documents correctly, deepening knowledge in the specialty. |
| **3** | **1** | Department FGZ and HLS | Modern trends in the creation of new medicinal substances of organic nature | The aim of the course is to expand and deepen the knowledge of students about modern methods of obtaining medicinal substances of organic nature. The modern ways of creating organic medicinal substances, which have found application in practical medicine, are considered. |
| **4** | **1** | Department UEF, TLS | Medicinal products based on medicinal product | The elective course is aimed at expanding and deepening knowledge on methods for obtaining extraction preparations based on medicinal products, studying technological schemes, equipment, developing skills for self-extraction from medicinal products, assessing the quality of raw materials and finished products. |
| **5** | **1** | Department biochemistry with a course in general and bioorganic chemistry | The role of antioxidants in metabolic disorders in the human body | In the body, the processes of free radical oxidation are regulated by the antioxidant system.This elective course will allow you to understand the essence of free radical oxidation processes in health and disease and to open the "door" to the world of antioxidants, which is important for the activities of the future specialist in pharmacists. |

Specialty: "Pharmacy" 4 course

Each student is required to gain 5 credits (ECTS) during the year

List and annotations of elective courses at the choice of students

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|  |  | **7 semester (1 cr)** |
| No. | credits | **Department name** | **SEC name** | **Annotations**  |
| **1** | **1** | Department general hygiene | Valueology as a science of health | The aim of the elective course is to study the basics of a healthy lifestyle and the way of modeling, achieving these foundations. |
| **2** | **1** | Department UEF, TLS | Medicinal products based on medicinal product | The elective course is aimed at expanding and deepening knowledge on methods for obtaining extraction preparations based on medicinal products, studying technological schemes, equipment, developing skills for self-extraction from medicinal products, assessing the quality of raw materials and finished products. |
| **3** | **1** | Department pathological physiology | Pathophysiology of drug addiction and substance abuse | The elective course is aimed at studying the issues of the general etiology of drug addiction and substance abuse, the concept of drugs, the general mechanisms of action of drugs on the nervous system, stages of drug addiction, as well as the principles of prevention and treatment of drug addiction. |

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|  |  | **8 semester (4 cr)** |
| No. | **Credits** | **Department name** | **SEC name** | **Annotations**  |
| **1** | **1** | Department FGZ and HLS | Countermeasures against counterfeiting of medicines | The elective course allows you to master the methods of identifying counterfeit drugs at different stages of their promotion, work with the population to raise awareness of the problem of counterfeiting drugs. |
| **2** | **1** | Department UEF, TLS | Quality management of drug production  | The elective course is aimed at studying the main GMP documents that ensure the production of drugs with guaranteed quality; students are introduced to concepts such as a quality commissioner, a quality assurance structure in a pharmaceutical company. |
| **3** | **1** | Department UEF, TLS | Homeopathic, veterinary, medical and cosmetic products | The elective course is aimed at studying the basics of homeopathy - history, features of this type of treatment, technology of homeopathic medicines, etc .; with a special branch of pharmaceutical science - veterinary pharmacy; with the basics of modern clinical cosmetology. |
| **4** | **1** | Department of Basic and Clinical Pharmacology | Pharmaceutical assistance  | The purpose of mastering the SEC "Pharmaceutical assistance" is to provide medicinal, informational and organizational-methodological support for the quality of pharmacotherapy for a specific patient with a specific disease, for monitoring visitors to pharmacies and increasing their adherence to treatment. |
| **5** | **1** | Department UEF, TLS | Good Pharmaceutical Practices for the Circulation of Medicines | The elective course focuses on the study of the concept of good practice in pharmacy (GHP); good pharmaceutical practices of the Eurasian Economic Union. |
| **6** | **1** | Department UEF, TLS | Pharmaceutical logistics according to GDP / GSP regulations | The elective course is aimed at studying the regulatory requirements of the Kyrgyz Republic, the EAEU, WHO in relation to the distribution of medicines; acquiring skills in organizing the main processes of pharmaceutical logistics |
| **7** | **1** | Department propedeutics of internal diseases with a course of endocrinology | COVID - 19 Pharmacists' Guidelines | The aim of the elective course is to provide relevant information and guidelines regarding the pandemicCOVID - 19 Pharmacists and Pharmacy Workers in the Context of Primary Health Care. |

**Specialty: "Pharmacy" 5 course**

Each student is required to gain 3 credits (ECTS) during the semester

List and annotations of elective courses at the choice of students

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|  |  |  | **10 semester (3 cr)** |  |
|  | credits | **Department name**  | **SEC name** | **Annotations** |
| **1** | **1** | Department FGZ and HLS | Pharmacognostic analysis of medicinal plant materials and quality control of medicinal products | The purpose of the elective course is an in-depth study of the methods of pharmacognostic analysis of medicinal products and pharmacopoeial methods for the analysis of drugs. |
| **2** | **1** | Department of Forensic Medicine and Jurisprudence | Fundamentals of Modern Medical Legislation | The elective course examines the issues of legislative support for the protection of public health, the rights and obligations of medical organizations, medical and pharmaceutical workers, as well as citizens in the field of health care, the problems of social and legal protection of medical and pharmaceutical workers. |
| **3** | **1** | Department UEF, TLS | The main aspects of the circulation of biosimmilars | The issues of development, production and regulation of the circulation of such biotherapeutic drugs (biosimilars, from the English biosimilars) are becoming increasingly important. The elective course is aimed at studying the specifics of the system for regulating the circulation of biosimilars. |
| **4** | **1** | Department Kyrgyz language | Training of documents | These working programs will consider these types of documents, as they are self-organizing and organizational-administrative documents, which are mainly actively used in our daily lives, institutions and schools. |
| **5** | **1** | Department basic and clinical pharmacology | Introduction to Pharmacoepidemiology | The purpose of mastering the elective course is to study the use and effect of drugs on large groups of people, to study the assessment of the therapeutic risk associated with the use of drugs and the effectiveness of measures and to minimize them, allowing pharmacists, in cooperation with other specialists conducting treatment, to plan, control, recommend and change individual patient pharmacotherapy to optimize it. |
| **6** |  | Department propedeutics of internal diseases with a course of endocrinology | COVID - 19 Pharmacists' Guidelines | The aim of the elective course is to provide relevant information and guidelines regarding the pandemicCOVID - 19 Pharmacists and Pharmacy Workers in the Context of Primary Health Care. |

Faculty Coordinator "Pharmacy" S.Ch. Dootalieva