TALLINNA TERVISHOIU KÕRGKOOL

ASSISTANT PHARMACIST

214475

Tallinn 2019

Educational institution	**TALLINN HEALTH CARE COLLEGE**
Code of educational institution	70003980
Title of the curriculum	**ASSISTANT PHARMACIST**
Title of the curriculum in English	**ASSISTANT PHARMACIST**
Higher education level	Professional higher education
Curriculum code in the Estonian Education Info-System (EHIS)	214475
Data about the right for conducting studies in the curriculum	Curriculum belongs to the "Medicine" curriculum group in which the right to conduct studies has been granted by the Government of Estonia in 18.12.2008 with Decree no 178.
Primary registration of the curriculum	
Approval date of the version of the curriculum in the educational institution	The curriculum has been approved by the Council of Pharmacy Curriculum on 10.10.2019. The curriculum has been approved by the Tallinn Health Care College Council with Decision No 2.1. of November 26, 2019

Study area	Health and well-being
Field of studies	Health
Curriculum group	Medicine
Main field of study (or studies) of the curriculum and their volume (ECTS)	Assistant Pharmacist 180 ECTS
Minor field (or fields) of study and other possible specializations in the curriculum and their volume (ECTS)	The curriculum has no minor fields and specializations
Forms of study	Daytime learning
Nominal length of studies	3 years
Volume of the curriculum in European credit point system (ECTS)	180
Volume of compulsory subjects (ECTS)	175
Volume of elective subjects (ECTS)	5
Study language	English

Other languages needed for achieving the learning outcomes	-
Admission requirements	Certificate of the secondary or vocational secondary education or equivalent qualification.

Aim of the curriculum

The aim of the curriculum is to train assistant pharmacists with professional higher education who possess readiness to work in pharmacies and other companies involved in handling medicines, medical products and health care products and to equip them with the resources required to maintain and develop their professional skills.

Learning outcomes of the curriculum

1. Knows medicines, their composition and is familiar with the technologies of manufacturing medicines.
2. Is capable to explain to clients about the effects of medicines and herbal medicines and instruct on their safe administration, possible side and adverse effects and usage in prevention and treatment of diseases.
3. Is competent in dealing with ordering, receiving, preparation and dispensing of medicines in the pharmacy, is familiar with the registration, marketing and legislation concerning medicines.
4. Knows the technologies of extemporaneous manufacturing of medicines, knows how to prepare them and is capable in evaluating the quality of medicines by organoleptic and routine physical and chemical methods.
5. Is cognizant with the main professional problems concerning the work of an assistant pharmacist and is able make suggestions to solve them, is able to in one's professional work to use the knowledge of other fields within one's competences and if useful consult the representatives of other professions.
6. Is capable of orally and in writing to explain profession-related problems using professional information technology tools and communication techniques; is capable of critical thinking, i.e. assessing information and applying research information to his or her work.
7. Has appropriate communication and teamwork skills and is capable in working in a multiprofessional group. Possesses the basic skills of management and entrepreneurship necessary for working as an assistant pharmacist.
8. Is capable to competently use professional sources of information and supporting materials to solve problems arising in the work, understands the need for lifelong learning and keeps abreast of professional development.
9. Has formed a professional identity and understands his or her role and responsibilities as an expert in the field of health care.

Conditions of fulfilling the curriculum

Curriculum contains:
8 modules (180 ECTS)

Chemistry	20 ECTS
Herbal Treatment	12 ECTS
Effect of Medicines on Human Body	30 ECTS
Preparation and Dispensing of Medicines	58 ECTS
Professional Development	15 ECTS
Research Methodology	20 ECTS

Basics of Health Care 20 ECTS Elective Subjects 5 ECTS Volume of Practical Training 35 ECTS Volume of Graduation Thesis 5 ECTS Volume of Elective Subjects 5 ECTS	
Options for passing the curriculum	The curriculum includes elective subjects in the capacity of 5 ECTS, which support the achievement of curriculum aims and create opportunities for realization of the student's individual needs and intellectual interests in the area of the studies.
Graduation requirements	Completion of the curriculum in full and defending the graduation thesis.
Type of diploma issued upon graduation	Bachelor's degree
Documents issued upon graduation	Diploma of Professional Higher Education with academic transcript and Diploma Supplement in English.
Possibilities for continuing studies	Master`s studies
Access to labour market	Has acquired the learning outcomes for working as an assistant pharmacist.
Additional information	https://ttk.ee/en/contacts

LETTER OF EXPLANATION FOR THE CURRICULUM OF ASSISTANT PHARMACIST

The pharmacist's English curriculum was founded in 2019. The need to open the curriculum arises from developments in the field of pharmacy in Estonia and Europe and the resulting shortage of specialist staff both in Estonia and elsewhere in Europe. The demand for pharmaceutical services has increased in the context of an aging European population, as has the need for drug counseling services as well as some primary healthcare provisions in pharmacies. The aim of the curriculum is to educate graduate pharmacists who are ready to work in general pharmacies but are also able to work in pharmaceutical and health care companies.
The pharmacist's English curriculum is structured as a module-based, output-based curriculum.
The curriculum comprises a total of eight modules:
1. Chemistry (20 ECTS);
2. Herbal Treatment (12 ECTS);
3. Effect of Medicines on Human body (30 ECTS);
4. Preparation and Dispensing of Medicines (58 ECTS);
5. Professional Development (15 ECTS);
6. Research Methodology (20 ECTS);
7. Basics of Health Care (20 ECTS);
8. Elective subjects (5 ECTS).

Modules contain subjects in the same direction, the acquisition of which results in the learning outcomes of the module.

The total volume of pharmacy practice in the curriculum is 35 ECTS, which is 19.4% of the curriculum volume. Upon completion of the curriculum, students have the choice of electives in the amount of 5 ECTS.

THE EXPECTED FIELD OF ACTIVITY OF THE GRADUATES

According to the orientation of the curriculum, the training of pharmacists is primarily oriented towards pharmacy work in the European Union, including Estonia. The specialist knowledge and skills acquired through the degree program also enable pharmacists to work in pharmaceutical wholesalers and manufacturing companies, in pharmaceutical education and research institutions, in pharmaceutical analysis. In active laboratories and in other pharmaceutical applications. By their educational background, pharmacists are also competitive in the labor market in areas adjacent to the pharmaceutical industry. In professional practice, the pharmacist is expected to be accurate, correct, committed to his or her profession, adhering to the principles of professional ethics, toleration of stress, judgment, responsibility and good communication skills. It is possible to continue studies in master's degree programs.

BASES OF THE CURRICULUM AND ORGANIZATION OF PRACTICAL TRAINING

The curriculum is based on the following legal acts and source documents of the field of activity:

1. Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications (07.09.2005)
2. The Bologna Process and the European Higher Education Area
3. Republic of Estonia Education Act (30.03.1992);

4. Higher Education Act (20.02.2019);
5. Higher education standard (nr 178, 11.07.2019);
6. Occupational qualification standards, Assistant Pharmacist, level 6 (15.11.2016);
7. Medicinal Products Act (16.12.2004);
8. The Statutes of Tallinn Health Care College (01.09.2019);
9. Curriculum Statute of Tallinn Health Care College (22.05.2018).

The curriculum is based on similar curricula of partner universities. The volume of study specified in the curriculum is calculated in ECTS credits. One credit corresponds to 26 hours of work a student has spent studying. The volume of an academic year is 60 credits or 1560 hours of study in one form or another. Teaching is divided into contact learning (lectures, seminars, e-learning, learning in the learning environment), independent learning and work practice in the working environment. Contact teaching is included in the curriculum until 1885, independent work at least 1885 (of which thesis 130 hours), work practice in the working environment (pharmacy practice) 910 hours or 35 ECTS. The main learning methods used in teaching are: lecture, seminar, e-learning, panel discussion, lecture discussion, group work, role play, case study, problem solving and problem solving. The choice of subjects in the pharmacist's curriculum is tailored to the needs and specifics of the specialty. In order to better link the subjects and achieve the goals and outputs of the curriculum, the subjects are divided into 8 modules. The modules are not limited to one academic year, but are completed in parts throughout the study cycle. In addition to professional theory training, internships in the work environment, which, according to the main focus of the training, mainly takes the form of pharmacy practice (35 ECTS), play an important role in the pharmacists' curriculum.
Internships are purposeful activities aimed at achieving learning outcomes and aimed at applying the knowledge and skills learned in the work environment under the guidance of a supervisor. The internship is organized in accordance with the rules of study organization approved by the Council of the College and available on the website of the College. If necessary, students can complete an internship on an individual schedule. Students are able to select an internship base for their internship according to a list of approved internship bases that are updated each academic year. Practitioners in the pharmacist curriculum are hospital pharmacies and general pharmacies where the student acquires the drug delivery learning outcomes. The student acquires the learning outcomes of pharmaceutical preparation in pharmacies, where the daily preparation of medicinal products is based on prescriptions. The internship is supervised by a college of specialty lecturers and practitioners with a university degree and trained in mentor training. As a result of cooperation between students, lecturers and mentors, the student's learning opportunities in practice are regulated, and the assessment and feedback processes are supported in individual and group coaching. At the end of each internship, lecturers analyze the organization of internships, student coping and learning opportunities in the work environment. Summaries of the internship process will be analyzed and suggestions will be made when planning the next academic year. The research objectives of the studies are realized through theses. In order to ensure the effectiveness of independent learning, it is realized in the form of independent tasks. Their resolution is taken into account in the final grade of the subject or is important for passing the exam. The organization of the study process is stipulated in the Tallinn Health Care College Study Regulations. The lesson plan regulates the student contact load across study weeks and academic years in accordance with the curriculum. Determining the volume and timing of teaching in the curriculum and taking it into account in the study process ensures maximum rationality, efficiency and learner-centered training of pharmacists. The advancement of the learning

process is ensured by the introduction and continuous application of new, modern teaching and learning methods.

REQUIREMENTS SET FOR THE CURRICULUM QUALITY

The pharmacist's curriculum is in line with the policies of Tallinn Health Care College. The aims and outputs of the curriculum correspond to the general requirements of professional higher education and the requirements for ensuring the professional activities of a pharmacist (professional standard of pharmacist). The content and development of the curriculum is guided by the curriculum council, which consists of representatives of pharmacy professors, pharmacy students, alumni, employers and an external expert. The Curriculum Board monitors and analyzes contemporary developments in the field of pharmacy and makes proposals for supplementing, modifying and developing the study environment as necessary. The teaching of the curriculum is fully covered by the teaching staff with higher education. The required quality of teaching and the professional competence of the graduates shall be ensured by:

1. structure of the curriculum and compliance with the requirements of the specialty;
2. continuous development of curriculum content in line with changes in the nature of drug handling and pharmacy operations;
3. improving teaching methods in line with new opportunities in the use of information technology;
4. comprehensive development and deepening of cooperation between lecturers and students;
5. systematic collection and analysis of student, graduate and employer feedback;
6. ensuring the internationalization of the curriculum through mobility of lecturers and students and cooperation between higher education institutions.
7. Trends in the pharmacist's curriculum and future development strategy relate to factors that directly or indirectly affect pharmacy as a profession and a specific area of health care. The most important of these factors are:
8. changes in the profession of pharmacist as a result of developments in the general nature of the European pharmaceutical trade;
9. changes in the profession of pharmacist;
10. changes in European and Estonian health care system legislation;
11. changes in the legislation of the European and Estonian education systems;
12. European and Estonian health care reforms;
13. technological change in health care;
14. demographic change in society across the European Union.

The financial resources for the operation of the curriculum will be provided from the budget of the institution.

MODULES AND SUBJECTS OF THE CURRICULUM, AIMS AND LEARNING OUTCOMES

Module title: Chemistry	**Volume:** 20 ECTS
Aim	To develop the knowledge base in chemistry necessary for professional activities, to give an overview of the chemical processes in the body and their relationship with the functions of the body, to clarify the relationship between chemical structure and pharmacological effects of medicinal substances.
Learning outcomes	1. Knows processes a basic knowledge of the chemical structure of the substances.

	2. Knows the basic concepts of inorganic, organic, analytical and pharmaceutical chemistry and biochemistry. 3. Knows the main classes of inorganic and organic compounds, the reactions belonging to them related to these compounds, the relationship between the compounds, the role of the compounds in the body and their use in medicine. 4. Is capable to use the main methods of analyses used in analytical and pharmaceutical chemistry. 5. Can explain the chemical structure of the basic medicine groups, their chemical and physical properties and the most important requirements of purity and storage of medicinal substances.	
Evaluation of module: subject-based method		
Subjects		
Code	**Subject title**	**Volume**
1iC19/IC	Inorganic Chemistry	3 ECTS
Aim	To give students the basic knowledge of the structure of inorganic compounds, their physical and chemical propertiesand their mutual relationships.	
Learning outcome	1. Knows the basic concepts of inorganic chemistry and the substance classes. 2. Is capable to explain the nature of the process of hydrolysis. 3. Has basic knowledge of redox processes. 4. Has basic knowledge of the most important compounds of metals and non-metals.	
Code	**Subject title**	**Volume**
1iC19/OC	Organic Chemistry	4 ECTS
Aim	To give students the basic knowledge of the structure of organic, physical and chemical properties and their mutual relationships.	
Learning outcomes	1. Knows the basic concepts of organic chemistry, is capable to characterize the most important organic compounds. 2. Knows the principles of synthesis of organic compounds. 3. Is capable to explain the properties of chemical compounds and inter-relationships between compounds.	
Code	**Subject title**	**Volume**
1iC19/AC	Analytical Chemistry	4 ECTS
Aim	To provide students with the practical skills for analysis of various compounds, including medicines.	
Learning outcomes	1. Knows the basic concepts of analytical chemistry. 2. Knows the methods used in analytical chemistry. 3. Is capable to determine a variety of compounds. 4. Knows and is capable to use the key methods of volume Analysis.	

Code	Subject title	Volume
1iC19/BC	Biochemistry	3 ECTS
Aim	To provide basic knowledge of the biomolecules of the body and their functions in the metabolism of the organism.	
Learning outcomes	1. Has knowledge of basic concepts of biochemistry. 2. Is capable to explain the relationship between the structure and the properties of the substance. 3. Understands the relationships between the micro-structure and macro-structure and the biochemical nature of the processes taking place in the body's cells and organs. 4. Has knowledge of the whole human body, its individual parts and the relationship and the co-operation between the parts.	
Code	**Subject title**	**Volume**
1iC19/PC	Pharmaceutical Chemistry	6 ECTS
Aim	To provide a basic knowledge of the chemical structure of the main medicinal substances, their physical and chemical properties and pharmaceutical analysis.	
Learning outcomes	1. Knows the basic concepts of pharmaceutical chemistry. 2. Is capable to explain the basic structure of medicine groups and the chemical structure and properties of the medicinal substances belonging therein. 3. Is familiar with the principles of identification and quantitative determination of major therapeutic agents. 4. Knows the requirements for the chemical purity of therapeutic agents. 5. Knows the storage requirements of therapeutic agents.	

Module title: Herbal Treatment		**Volume:** 12 ECTS
Aim	To acquire knowledge of the basics of herbal treatment needed for practical work in pharmacy and of the options to use herbs and their preparations to strengthen the organism, for the treatment and prevention of disease.	
Learning outcomes	1. Is capable to explain the anatomical and morphological structure of plants and their most important physiological functions. 2. Knows the most important plants in the main plant groups. 3. Knows medicinal plants used in Estonia, the medicines derived from them and their active ingredients. 4. Knows about the use of medicinal plants and herbal remedies for the treatment of diseases. 5. Is familiar with the nomenclature of the natural preparations And is capable to make recommendations for their use.	
Module evaluation: subject-based method		
Subjects		
Code	**Subject title**	**Volume**
1iHT19/B1	Botany I	2 ECTS
Aim	To acquire necessary basic knowledge on the structure and function of plants as well as the importance of plants in wildlife and in human activities; to pass the specialty subjects connected to medicinal plants (pharmacognosy, phytotherapy).	
Learning outcomes	1. Knows the structure of plant cells and tissues and functions inside plants. 2. Knows the vegetative and generative organs and their tasks. 3. Has an overview of the main physiological processes inside plants (photosynthesis, transpiration, mineral nutrition). 4. Is capable to explain the characteristics of the reproduction and life cycle of plants.	
Code	**Subject title**	**Volume**
1iHT19/B2	Botany II	2 ECTS
Aim	To acquire skills to identify different plant species occurring in nature using plant identifiers and to compile herbarized plant collections.	
Learning outcomes	1. Has an overview of the principles of plant classification, is familiar with the most diversified plant families and main species belonging to them, cultivated and medicinal plants. 2. Is capable to use the plant identifier to identify unknown plants. 3. Is capable to collect the necessary plants samples from nature to compile botanical collections, to conserve and preserve the samples and herbarize and document the samples accordingly.	
Code	**Subject title**	**Volume**
1iHT19/PP	Pharmacognosy and Phytotherapy	8 ECTS

Aim	To provide knowledge on the basics of phytotherapy and the use of plants in treatment of disorders and pathological abnormalities of the human organism. To acquire basic knowledge on medicinal herbs, medicinal plants, their main active ingredients and biosynthesis of the ingredients.
Learning outcomes	1. Knows medicinal plants, the principles and methods of usage in treating specific diseases. 2. Knows the most important groups of active ingredients in medicinal plants, the chemical composition of the substances and mechanisms of biosynthesis. 3. Knows the substances on which depends the pharmacological effect of most important medicinal plants. 4. Knows the principles of collecting, drying and preserving medicinal plants.

Module title: Effect of Medicines on Human Body		**Volume: 30** ECTS
Aim	To acquire basic knowledge of the effects and the mechanisms of action of medicines in the human body, their use for the treatment and prophylaxis of diseases, of medicine interaction, as well as of the possible toxic effect of medicines and other potent substances on the performance of the body.	
Learning outcomes	1. Knows the medicine groups affecting various organs and active ingredients of these medicines. 2. Is familiar with mechanisms of action of different therapeutic classes and the pharmacokinetics and-dynamics of their effect, is capable to explain it to the clients. 3. Knows the effect-modifying factors of medicine and the interactions of therapeutic agents, also about the mechanisms of absorption and transformation of therapeutic agents in the body. 4. Is familiar with modern pharmaceutical medicines and their use in the treatment of diseases. 5. Knows toxins and their effect on the body. 6. Knows the medicines used for treatment of pets and farm animals.	
Module evaluation: subject-based method		
Code	**Subject title**	**Volume**
1iEM19/P1	Pharmacology I	8 ECTS
Aim	To acquire knowledge on pharmacokinetics, the connections between nervous system and the effect of medicines, the action mechanisms of medicines, side and adverse effects and clinical usage.	
Learning outcomes	1. Understand the pharmacokinetics and pharmacodynamics of medicines, knows the effect of medicines on the human organism and the factors affecting the effect. 2. Knows the pharmaceutical forms and administration routes of medicines, is capable to use mathematical calculations in administering medicines. 3. Understands the nervous system and the functioning of its parts, its connections to the effect of medicines. 4. Knows the effect of cardiovascular medicines and hormones as well as their usage, side effects and contra-indications.	
Code	**Subject title**	**Volume**
1iEM19/P2	Pharmacology II	8 ECTS
Aim	To acquire knowledge on the action mechanisms and effects of medicines. Pharmacology II course follows Pharmacology I. Completing Pharmacology II is a prerequisite of pharmacotherapy studies.	
Learning outcomes	1. Knows the effects, usage, side-effects and contraindications of analgesics, anti-inflammatory medicines, chemotherapeutics and central nervous system medicines. 2. Is capable to consider the interaction of different medicines in their concomitant usage.	

	3. Is capable to implement mathematical calculations in medicine administration. 4. Is capable to use pharmacological reference books, handbooks and internet sources.	
Code	**Subject title**	**Volume**
1iEM19/PT1	Pharmacotherapy I	5 ECTS
Aim	To provide knowledge on pharmacotherapy: different groups of medication, their effect on organism and their use in the treatment of diseases. Knowledge on pharmacokinetics of medicines, pharmacodynamics, side effects and interactions.	
Learning outcomes	1. Has knowledge on the most often used over-the-counter medicine groups, the pharmacokinetics and pharmacodynamics of the groups. 2. Has knowledge on the effect of the most over-the-counter medicines on organism and of factors affecting the effect of medicine. 3. Has knowledge on the indications and contraindications of the main over-the-counter medicines. 4. Has knowledge on the side effects and interactions of over-the-counter medicines, knows the main principles of acute medicinal intoxication. 5. Is capable to use the sources of information (reference books and online sources) on over-the-counter medicines.	
Code	**Subject title**	**Volume**
1iEM19/PT2	Pharmacotherapy II	5 ECTS
Aim	To provide knowledge on pharmacotherapy: different medicine groups, their effect on organism and usage in treatment of diseases. Also possesses knowledge on medicine pharmacokinetics and pharmacodynamics, side effects and interactions.	
Learning outcomes	1. Has knowledge on the main medicine groups, the pharmacokinetics and pharmacodynamics of the groups. 2. Has knowledge on the effect of the main medicine groups on the organism and the factors affecting the effect of medicines. 3. Has knowledge on the main indications and contraindications of the main medicine groups. 4. Has knowledge on the side-effects of medicines, their interaction and knows the main principles of acute medicine intoxication. 5. Is capable to use the information sources of medicines: pharmacological reference books, handbooks and online sources.	
Code	**Subject title**	**Volume**
1iEM19/VP	Veterinary Pharmacy	2 ECTS
Aim	1. To introduce the students the characteristics of pets and farm animals. 2. To provide students with skills to reasonably advise pet owners within the competences of an assistant pharmacist. 3. To teach students how to dispense prescription medicines for animals and orientate in the legislation concerning animals.	

Learning outcomes	1. Has the knowledge to understand the differences of human beings and animals when administering medicines and determining the medicine dosages. 2. Is capable to give reasonable advice to the owners of the animals concerning medicines as well as other products, but also on their animals' behavior.	
Code	**Subject title**	**Volume**
1iEM19/T	Toxicology	2 ECTS
Aim	To provide knowledge on pharmacotherapy: different medicine groups, their effect on organism and usage in treatment of diseases. Also possesses knowledge on medicine pharmacokinetics and pharmacodynamics, side-effects and interactions.	
Learning outcomes	1. Knows the effect of main toxins on organism, the signs and treatment principles of main toxins, knows the antidotes and can give first aid in case of intoxications. 2. Is capable to present his or her knowledge in a well-argued manner.	

Module title: Preparation and Dispensing of Medicines		**Volume:** 58 ECTS
Aims	To acquire specific professional expertise in pharmacy work and the organization of the pharmaceutical industry in Estonia, to be able to prepare prescription medicines, process prescriptions and acquire counseling skills for servicing the customers of the pharmacy.	
Learning outcomes	1. Knows the technologies of medicine preparation and is capable to prepare extemporaneous medicines based on the prescription. 2. Has an overview of the medicines and other health-care products sold in Estonian pharmacies. 3. Knows the main principles of client servicing and is capable to apply them in work process. 4. Knows the nomenclature of the medicines containing the main active ingredients and is capable to comparatively evaluate pharmaceutical preparations provided by different manufacturers. 5. Is familiar with the work organization of the pharmacy, the legislation concerning the work organization of the pharmacy and the medicine-handling system in Estonia.	
Module evaluation: subject-based method		
Subjects:		
Code	**Subject title**	**Volume**
1iPDM19/CS	Customer Service	5 ECTS
Aim	To provide students with knowledge on the principles of modern customer service to understand the needs of a patient/client. To create readiness to understand and meet the needs of a patient/client in service process.	
Learning outcomes	1. Knows the main principles and basic topics of modern customer service (including development, personality and social psychology) and understands the need for developing the personal characteristics of people working in the field of customer service. 2. Knows the content of service process, follows the principles of teamwork and professional ethics.	
Code	**Subject title**	**Volume**
1iPDM19/PM	Pharmacy Management	5 ECTS
Aim	Pharmacy Management is one of the main subjects in the Curriculum of Assistant Pharmacist which provides knowledge on the work management related to pharmacies and of current legislation.	
Learning outcomes	1. Values the development of the science of pharmacy. 2. Knows the work management of a pharmacy by different areas. 3. Knows the legislation governing the work management of a pharmacy. 4. Has an overview of different pharmacy-related enterprises.	
Code	**Subject title**	**Volume**

1iPDM19/CP	Counseling at a Pharmacy	3 ECTS
Aim	To provide more in-depth knowledge of medicine related counseling of clients.	
Learning outcomes	1. Is in the process of medicine related counseling able to collect information on a specific problem and offer solutions. 2. Is capable to counsel the client according to their individual needs. 3. Is capable to find and use evidence-based sources in counseling.	
Code	**Subject title**	**Volume**
1iPDM19/PP	Pharmaceutical Products	4 ECTS
Aims	1. To provide knowledge on different over-the-counter medicines as well as skills to compare and recommend them. Topics include both, taking care of the general health of the people but also specific advice on how to improve one's health. Prerequisites to the subject are the following subjects: Pharmacology, Anatomy and Physiology. 2. To create an understanding on the diversity of options in choosing the pharmaceutical products as well as on their differences. Upon completion of the subject the student is familiar with the prescription medicines registered in the Republic of Estonia, is familiar with their active ingredients and is able to compare and evaluate the preparations offered by different manufacturers. Student is able to give adequate recommendations and make correct decisions to choose the product that is the most suitable for the client.	
Learning outcomes	1. Knows and recognizes the groups of over-the-counter medicines (OTC medicines), health products and medical equipment used in the Republic of Estonia and is capable to consult customers in their usage. 2. Knows the prescription medicines registered in the Republic of Estonia, is familiar with their active ingredients and is capable to compare and evaluate the medical preparations offered by different manufacturers. 3. Is capable to recommend the pharmaceutical products deriving from the customer's needs.	
Code	**Subject title**	**Volume**
1iPDM19/PT	Pharmaceutical Technology	6 ECTS
Aim	To provide knowledge on medicine manufacturing technologies and the skills of preparing magistral formula taking into account the physical-chemical properties of the therapeutic agents.	
Learning outcomes	1. Knows how to use the weighing and measuring devices. 2. Is capable to techologically correctly prepare the medicines while knowing the physical-chemical properties of the therapeutic agents. 3. Knows the principles of aseptics and antiseptics and follows the sanitary requirements. 4. Is capable to properly package and maintain the prepared medicine for dispensing.	
Code	**Subject title**	**Volume**

1iPDM19/PI1	Pharmacy Internship I	10 ECTS
Aim	Reinforce the knowledge acquired in theoretical and practical studies in preparing powders and liquid medicines as well as on over-the-counter medicines. Acquire knowledge on the processes connected to admission and handling of the pharmacy products.	
Learning outcomes	1. Knows the technologies of manufacturing powders and solutions and is capable to produce magistral formulae by following the prescriptions. 2. Knows the nomenclature of the over-the-counter medicines containing the main active substances and other pharmacy products and is capable to comparatively evaluate pharmaceutical preparations provided by different manufacturers. 3. Is familiar with the work organization of the pharmacy and the system of medicine handling. 4. Is capable to describe and evaluate the work process and the final result regarding the technological, organizational and supervision related components.	
Code	**Subject title**	**Volume**
1iPDM19/PI2	Pharmacy Internship II	25 ECTS
Aim	To reinforce the knowledge acquired in theoretical and practical studies in preparing powders, liquid medicines, ointments, suppositories and prescription medicines. Reinforcing the counseling skills in a pharmacy.	
Learning outcomes	1. Knows the technologies of manufacturing powders, liquid medicines, ointments and suppositories and is capable to prepare magistral formulae when following the doctor's prescriptions. 2. Is familiar with the nomenclature of over-the-counter and prescription medicines containing the main active substances and is able to comparatively evaluate pharmaceutical preparations provided by different manufacturers. 3. Is familiar with the work organization of a pharmacy and with the system of medicine handling. 4. Analyses the work process and the final result regarding the technological, organizational and supervision related components and is able to provide evaluation.	

Module title: Professional Development		**Volume:** 15 ECTS
Aim	To acquire necessary knowledge and skills for learning-related professional development and lifelong learning.	
Learning outcomes	1. Knows professional specialty terminology in Estonian and in Latin. expressions and abbreviations used in prescriptions. 2. Knows the main terms and theories of organizational behavior and management. 3. Is capable to plan and manage one's studies in Tallinn Health Care College. 4. Knows the basics of psychology and is capable to apply different communication methods and principles of teamwork.	
Module evaluation: subject-based method		
Subjects:		
Code	**Subject title**	**Volume**
1iPD19/IL	Introduction to Learning	2 ECTS
Aim	To create possibilities for managing successfully in study process in Tallinn Health Care College.	
Learning outcomes	1. Has an overview of Estonian higher education system and possibilities for international cooperation. 2. Knows organization of studies and practical training, and study counselling system in Tallinn Health Care College. 3. Is able to compose and execute letters and study documents. 4. Knows foundations of studies, teamwork, stress and time management, and career planning.	
Code	**Subject title**	**Volume**
1iPD19/P	Psychology	3 ECTS
Aim	To acquire knowledge in psychology and create readiness to understand the patient's/client's needs.	
Learning outcomes	1. Has knowledge on the main concepts and approaches in psychology (development, personality and social psychology). 2. Understands the nature and causes of individual developmental and social behavior. 3. Is capable to implement different communication techniques and principles of teamwork.	
Code	**Subject title**	**Volume**
1iPD19/L	Latin	2 ECTS
Aim	To acquire Latin skills needed for the profession of an assistant pharmacist.	
Learning outcomes	1. Is capable to correctly use specialty terminology, including expressions and abbreviations used in prescriptions. 2. Knows how to form necessary expressions and how to correctly use them.	

	3. Values eruditeness, correct specialty language and its proper usage.	
Code	**Subject title**	**Volume**
1iPD19/LC	Estonian Language and Culture	4 ECTS
Aim	To acquire Estonian language on level A1 which enables to use Estonian and manage in everyday repeated communication situations which requires direct and simple exchange of information on familiar routine topics as well as possess information about the development of Estonian nation, its traditions, customs and outstanding artists, musicians and writers.	
Learning outcomes	1. Understands familiar words and phrased that are directly connected to everyday communication situations (home, work (practical training institution), learning, shopping) when people are speaking slowly and clearly. 2. Understands short, easy texts and personal letters, is capable to find information from easy everyday texts (posters, catalogues, advertisements, menus). 3. Manages with everyday typical communication situations, is capable to ask questions and answer about oneself, is capable to communicate in simple language, can describe living conditions, health, education and work. 4. Is capable to take notes and compile a very short personal note or letter. 5. Has an overview of Estonian history and the development of the nation. 6. Knows the main holidays in Estonia and can describe common habits of Estonians. 7. Knows Estonian musicians, writers, artists, and can name their most important works.	
Code	**Subject title**	**Volume**
1iPD19/ME	Management and Entrepreneurship	4 ECTS
Aim	To create possibilities for developing basic skills related to organization management and starting enterprise.	
Learning outcomes	1. Can describe an organization and its management process, including personnel management, and associate them with his/her specialty. 2. Knows different forms of enterprise and principles for choosing them. 3. Chooses and analyses a business idea, can develop a business plan, and plan and carry out projects. 4. Has elementary knowledge about foundations of tax system and accountancy, and can apply to financial institutions or funds for getting financing. 5. Knows principles of product and service development, and marketing.	

Module title: Research Methodology		**Volume:** 20 ECTS
Aim	To create opportunities and by that support the development of skills enabling the student to conduct research and write academical texts.	
Learning outcomes	1. Is capable to find and use reliable evidence-based scientific data sources in one's professional research. 2. Is capable to analyze and cite information from different sources. 3. Knows the main principles of statistics, is capable to methodologically collect data and analyze them correctly. 4. Knows the ethical aspects of research and knows how to follow them. 5. Is capable to set professional problems and offer solutions to solve them based on the research.	
Evaluation of module: subject-based method		
Subjects		
Code	**Subject title**	**Volume**
1iRM19/FR1	Foundations of Research I	5 ECTS
Aim	To create readiness for collecting and analysing evidence-based information.	
Learning outcomes	1. Can apply principles of systematic literature search and record search results. 2. Can independently use scientific data bases and analyse relevant evidence-based materials. 3. Can report professional scientific literature in English and Estonian. 4. Knows foundations of statistics and is able to find and interpret statistics. 5. Can compose and form independent works, and uses scientific language.	
Code	**Subject title**	**Volume**
1iRM19/FR2	Foundations of Research II	5 ECTS
Aim	To create skills for conducting research.	
Learning outcomes	1. Understands concepts and principles of scientific research and differences between types of research. 2. Knows different research methods, and planning the research, can choose the most suitable method for collecting and analysing data. 3. Can collect or find statistical data and relevant evidence-based sources, analyse, report and refer properly them in his/her paper. 4. Understands principles of ethics in science and medicine, is able to pay attention to ethical aspects, when composing his/her research.	
Code	**Subject title**	**Volume**
1iRM19/GT1	Graduation Thesis I	5 ECTS

Aim	To acquire skills for using his/her professional knowledge to search independently and analyse critically a particular problem or situation in practice.	
Learning outcomes	1. Is able to independently plan and carry out a research, and present properly its results. 2. Can pay attention to professional problems and research focuses. 3. Is able to give research-based recommendations for solving professional problems.	
Code	**Subject title**	**Volume**
1iRM19/GT2	Graduation Thesis II	5 ECTS
Aim	To show a student`s ability to apply his/her knowledge and practical skills, developed across the curriculum, to carry out a research, using different research methods.	
Learning outcomes	1. Understands research ethics and principles of reliability, and considers them when carrying out the research. 2. Is able to go through and analyse scientific literature associated with a research problem. 3. Knows the way of data collection and method of analysis used in the research. 4. Can explain research results and importance of them in specialty. 5. Is able to analyse critically and defend his/her viewpoints presented in the research, and discuss the searched topic.	

Module title: Basics of Health Care		**Volume:** 20 ECTS
Aims	1. To acquire necessary basic knowledge to understand the effect of pharmaceutical products and the structure of human organism, its normal and pathological functioning. 2. To provide knowledge about social pharmacy, ensuring the longevity of health, developing coping strategies and preventing work-related diseases.	
Learning outcomes	1. Knows the structure of human organism, its functions and biological foundations of functioning, is capable to measure and interpret primary health indicators. 2. Knows the nature and mechanisms of pathological and genetic processes. 3. Knows the principles and ways of implementation of a-and antiseptics. 4. Knows the organizational problems accompanying with administration, production, surveillance and information. 5. Is familiar with the main principles of legislative planning, main concepts of public health and work occupational health statutes and criteria of evaluation and improvement the public health.	
Module evaluation: subject-based method		
Subjects		
Code	**Subject title**	**Volume**
1iBH19/AP	Anatomy and Physiology	6 ECTS
Aim	To acquire basic knowledge in anatomy and physiology.	
Learning outcomes	1. Uses the anatomy and physiology related terminology correctly. 2. Knows and is capable to explain the construction of human organism and its relation to the function and development. 3. Knows the shape, structure and location of organs by organ systems.	
Code	**Subject title**	**Volume**
1iBH19/P	Pathology	5 ECTS
Aim	To acquire foundation knowledge about causes and onset of diseases, signs and disease-related changes in the human body.	
Learning outcomes	1. Knows fundamental processes and concepts of general pathology. 2. Knows etiopathogenesis and pathogenesis of most prevalent diseases, and ways to prevent the diseases treating each organ system separately. 3. Has basic knowledge about microbiology and function of the immune system, most common micro-organisms and diseases caused by them affecting human functioning. 4. Knows genetic bases and understands the nature of heredity and mutability, has foundation knowledge about more common chromosomal and genetic diseases, and possibilities to apply genetics in medicine.	
Code	**Subject title**	**Volume**
1iBH19/WS	Work Safety	3 ECTS

Aim	To acquire skills for giving first aid, the knowledge on safe behavior in work environment and in case of a fire.	
Learning outcomes	1. Knows the principles of quality and risk management in health care organization. 2. Is capable to evaluate the risk factors of work environment and compile a risk analysis. 3. Knows how to implement ergonomic work movements and engage in workplace health promotion. 4. Is capable to give first aid without any additional resources. 5. Knows how to act in case of a fire.	
Code	**Subject title**	**Volume**
1iBH19/PH	Public Health	2 ECTS
Aim	To provide knowledge on the theoretical bases in the field of public health, its functions, principles of public health policy and to provide an overview of the public health situation and its organizational arrangement in Estonia.	
Learning outcomes	1. Understands the nature of the field of public health, its tasks, principles of public health policy and is capable to link the determinants affecting the health of an individual and community. 2. Knows the most important health problems of Estonian population and the activities conducted within the frames of health development plan to prevent diseases and promote health. 3. Has an overview of the organizational arrangement of public health in Estonia and is capable to connect the activities of the institutions belonging to different sectors and levels.	
Code	**Subject title**	**Volume**
1iBH19/PC	Pharmaceutical Care	2 ECTS
Aim	To give an overview of responsible and proper usage of medicines, including other health care professionals and clients/patients.	
Learning outcomes	1. Knows the principles of pharmaceutical care, has an overview of pharmaceutical production and marketing. 2. Knows the factors influencing the use of medicines. 3. Has an overview of the process of manufacturing new medicines. 4. Understands the need to use one's specialty knowledge for the good of the client/patient, and if necessary, consults other health care professionals.	
Code	**Subject title**	**Volume**
1iBH19/MI	Measuring and Interpreting of Vital Signs of the Body	2 ECTS
Aim	To provide knowledge on the role of an assistant pharmacist in primary level health care and about theoretical aspects of measuring primary health markers as well as the practical aspects needed for interpreting the results.	
Learning outcomes	1. Knows the main principles of primary health counseling and patient education. 2. Complies with the requirements of aseptics and antiseptics. 3. Knows how to measure blood sugar, cholesterol, haemoglobin levels and blood pressure and how to document the results.	

	4. Is capable to give primary recommendations in cases the results differ from the rated value.

Module title: Elective Subjects		**Volume:** 5 ECTS
Module evaluation: subject-based method		
Subjects		
Code	**Subject title**	**Volume**
ES19/EL	Estonian Language	5 ECTS
VA17/HN	Healthy Nutrition	5 ECTS