

Educational institution: TALLINN HEALTH CARE COLLEGE
Code of educational institution: 70003980
Title of study programme: Farmatseut
(in Estonian and English) *Assistant Pharmacist*

Level of study programme: Applied higher education
Academic field: Health and well-being
Orientation of study: health
Study programme group: medicine
Accreditation data: Directive of the Minister of Education and Science No 64 from Feb.1st, 2005 of accreditation until Feb.1st, 2012

Volume in European Credit Transfer and Accumulation System (ECTS): 180
Nominal period of studies: 3 years

Admission requirements: secondary education or equivalent foreign qualification.

The objective of study programme is to train specialists with applied higher education who know about medications, other medical and health products, and the producing of medication, i.e pharmacists whose knowledge and skills enable them to work in pharmacies, medication wholesale companies and in other businesses dealing with medications, medical and health products.

Brief description of study programme and teaching:

Volume of speciality subjects: 120 ECTS
Volume of basic subjects: 45 ECTS
Volume of practical training: 38 ECTS (21% from study programme volume)
Volume of final exam: 5 ECTS
Volume of elective subjects in study programme: 10 ECTS
Language of studies: Estonian
Other languages necessary for achieving learning outcomes: English, Russian
Volume of contact studies: not more than 50% from the total volume of theory studies in study programme

Graduation requirements:

completing study programme in full volume and successful passing of final exam.

Documents issued upon graduation:

An applied higher education diploma with academic statement and *Diploma Supplement* in English.

Study programme code in the Estonian Education Info-System (EHIS) Register of Curricula:

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Module passports

Module code	1KE09
Module title	CHEMISTRY
Module volume (ECTS hours)	25
Contact learning (incl e-learning)	443
Independent work	At least 207
Practical training	-
Year of studies	I-II year
Integrated modules/subjects	Phytotherapy Medication effect on organism Producing and dispensing medication
Module objective	To develop a basis of chemistry related knowledge necessary for professional activities; to provide an overview about the chemical processes in organism and it's connections with organism functions; to explain connections between the chemical structure of curing substances and pharmacologic effect.
Learning outcomes	Having passed the module, the student: <ol style="list-style-type: none"> 1. knows the principles of anorganic, organic, analytic and pharmaceutic chemistry, and biochemistry; 2. possesses basic knowledge about the chemical structure of substances; 3. knows the main classifications of anorganic and organic compounds, reactions of compounds belonging there, connections between compounds, the role of compounds in organism and their application areas in medicine; 4. knows and can use main analyzing methods used in analytic and pharmaceutic chemistry; 5. knows the chemical structure of the main representsatives of medication groups, their chemical and physical features, the principles of pharmaceutic analysis, and the most important requirements for cleanness and preserving curative substances.
Contents and method of independent work	Working through and supplementing lecture material by following recommended literature. Independently solving exercises assigned by lecturers, making home work through e-courses. Working through speciality material and preparing for discussing it in seminars.
Evaluation	The module subjects are evaluated separately: Anorganic chemistry - exam Organic chemistry - exam Pharmaceutic chemistry - exam Biochemistry - graded prelim Analytic chemistry - graded prelim

Module code	1TR09
Module title	PHYTOTHERAPY
Module volume (ECTS hours)	15
Contact learning (incl e-learning)	252
Independent work	At least 138
Practical training	-
Year of studies	I, II and III year

Integrated modules/subjects	Medication effect on organism Producing and dispensing medication Chemistry
Module objective	To provide the pharmacist with knowledge that is necessary for working in pharmacy: basics of phytotherapy; the possibilities for using herbs and herb preparations for strengthening organism, curing and preventing diseases.
Learning outcomes	Having passed the module, the student: <ol style="list-style-type: none"> 1. knows the anatomic and morphologic structure on plants, and the most important physiological functions of plants; 2. orients in biosystematics and knows the more important plants in main plant groups; 3. knows herbs, the drugs derived from them and their effects; 4. knows the principles of contemporary phytotherapy; 5. knows the using of herbs and biologic curatives for treating diseases; 6. orients in the nomenclature of natural preparations affecting organism functions and can give recommendations for using them.
Contents and method of independent work	Working through and supplementing lecture material by following recommended literature. Independently solving exercises assigned by lecturers, making home work through e-courses. Working through speciality material and preparing for discussing it in seminars.
Evaluation	The module subjects are evaluated separately: Botany - exam; Pharmacognosy - exam; Phytotherapy - exam; Natural products - graded prelim.

Module code	1RTO09
Module title	MEDICATION EFFECT ON ORGANISM
Module volume (ECTS hours)	25
Contact learning (incl e-learning)	302
Independent work	At least 348
Practical training	-
Year of studies	II and III year
Integrated modules/subjects	Phytotherapy Chemistry Producing and dispensing medication
Module objective	To provide the pharmacist with basic knowledge about medication effect and the effect mechanisms in human organism, using them for treating and preventing diseases; about the concurrence of medications and the possible toxic effect by medications and other strong effect substances on organism functions.
Learning outcomes	Having passed the module, the student: <ol style="list-style-type: none"> 1. knows different medication groups and their active substances that affect organs; 2. knows the effect mechanisms of different medication groups, and the pharmacogenetics and –dynamics of this effect; 3. knows the factors that modify medication effect and the interaction of curative substances; 4. knows the sucking and transforming mechanisms of curative substances in organism;

	5. knows contemporary pharmacy medication and their use for treating diseases; 6. knows toxic substances and their effect on organism; 7. knows medication used for treating pet and agricultural animals.
Contents and method of independent work	Working through and supplementing lecture material by following recommended literature. Independently solving exercises assigned by lecturers, making home-work in e-courses. Working through seminar topics and preparing for discussions. Composing individual study-map.
Evaluation	The module subjects are evaluated separately: Pharmacology - exam; Pharmacotherapy - exam; Biopharmacy - graded prelim; Toxicology - graded prelim; Veterinary pharmacy - graded prelim.

Module code	1RVV09
Module title	PRODUCING AND DISPENSING MEDICATION
Module volume (ECTS hours)	55
Contact learning (incl e-learning)	246
Independent work	At least 196
Practical training	38 ECTS (988 hours)
Year of studies	II and III year
Integrated modules/subjects	Chemistry Phytotherapy Producing and dispensing medication
Module objective	To provide the pharmacist with concrete speciality knowledge about pharmacy medications, real pharmacy work and the organization of the area of pharmacy in Estonia, the skills for preparing prescribed medications, to process prescriptions, and communication skills for serving pharmacy customers. The knowledge acquired with theory and practical studies will be familiarized in the module with long-term and comprehensive speciality practice in pharmacies.
Learning outcomes	Having passed the module, the student: 1. knows technologies for producing medication and can produce extemporal medication by basing on doctor's prescriptions, considering the physical-chemical features of curative substances; 2. knows medications sold in Estonian pharmacies, other medical products and health products; 3. orients in the agents of pharmacy medications; 4. knows the medication nomenclature containing basic effective substances and can comparatively evaluate medication preparations offered by different manufacturers; 5. knows the work organization of pharmacy and medication dealing system in Estonia; 6. knows the legislature regulating pharmacy's work organization.
Contents and method of independent work	Working through and supplementing lecture material by following recommended literature. Independently solving exercises assigned by lecturers, making home-work in e-courses. Working through seminar topics and preparing for discussions. During the independent work, the student learns to know the medication preparations available in Estonian pharmacies, the work organization of pharmacies and the technology of producing medications.

Evaluation	The module subjects are evaluated separately: Pharmaceutic technology - exam; Pharmacy organization - graded prelim; Pharmaceutic product checking - graded prelim. The evaluation of pharmacy practice will be grounded on practice report and the evaluation from practice instructor.
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Module code	1PA09
Module title	PROFESSIONAL DEVELOPMENT
Module volume (ECTS hours)	15
Contact learning (incl e-learning)	162
Independent work	At least 228
Practical training	-
Year of studies	I, II and III year
Integrated modules/subjects	Phytotherapy Producing and dispensing medication Medication effect on organism
Module objective	The introduction of students to studies necessary for professional development through the integrated subjects of medical humanitaristics and organization behaviour. Possibilities will be created for discussing the questions from the area created by medical humanitaristics and organization behaviour subjects that support professional development, for writing essays on relevant topic and making tests. Basic knowledge and skills will be provided for lifelong professional development of students.
Learning outcomes	Having passed the module, the student: <ol style="list-style-type: none"> 1. knows the speciality terminology in Latin, and the expressions and abbreviations used on prescriptions; 2. can write correctly the necessary expressions; 3. values the development of pharmacy as science; 4. can use the principles and main theories of medical philosophy and – sociology, and different paradigms explaining the developments of society; 5. knows the principles and main theories of organization behaviour; 6. can perform different techniques used in customer service; 7. applies the skills acquired from managing studies; 8. knows the differencies between cultures; 9. knows the psychological features of human life-cycle; 10. can use contemporary organization behaviour related literature.
Contents and method of independent work	Studying and complementing lecture material through study- and scientific literature, enhancing skills of using information sources. <ol style="list-style-type: none"> 1. complementing lecture conspectus from the materials of study-literature; 2. 2 essays, written summaries and overviews about the subject: science-based sources and referring as required, total volume ca 16 pages.
Evaluation	The module subjects are evaluated separately: Latin - exam; Medical humanitaristics - graded prelim; Organization behaviour - graded prelim.

Module code	IUAM09
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Module title	RESEARCH AND DEVELOPMENT WORK METHODOLOGY
Module volume (ECTS hours)	15
Contact learning (incl e-learning)	124
Independent work	At least 266
Practical training	-
Year of studies	I, II and III year
Integrated modules/subjects	Research work methodology, Estonian language/Russian language, term-paper „Treatment substances“, Herbarium, English language, Computer studies and information search
Module objective	To introduce the students the basics of evidence based research work and to teach them to: <ol style="list-style-type: none"> 1. use different evidence based information sources (incl speciality databases EBSCOhost, OvidSP); 2. compose herbarium and term-papers as required; 3. plan and carry out applied researches and development works; 4. value the ethic issues of research work; 5. apply the acquired knowledge in practicing the profession.
Learning outcomes	Having passed the module, the student: <ol style="list-style-type: none"> 1. can use different evidence based sources for writing term-paper; 2. can use Estonian and/or English language(s) for writing development and research works; 3. can compose herbarium; 4. knows different methods of research work and can use them in carrying out applied research; 5. values ethics and is ready to apply the acquired knowledge in professional work; 6. can use e-learning possibilities in study-environment; 7. possesses practical skills for searching and processing information (text processing, tabel calculation, computer and presentation graphics, file operations).
Contents and method of independent work	Working with literature; composing a concept card; composing a presentation; communicating in the forum of learning environment; learning from and teaching each other, project work (for example essay, article analysis, compact research work, report), composing and carrying out strategy for information search, evaluation of search results, giving feedback about results.
Evaluation	The module subjects are evaluated separately: Basics of scientific work - graded prelim; Language studies - prelim.

Module code	1TA09
Module title	BASICS OF HEALTH CARE
Module volume (ECTS hours)	5
Contact learning (incl e-learning)	62
Independent work	At least 68
Practical training	-
Year of studies	I- III year
Integrated	Producing and dispensing medication

modules/subjects	Human science
Module objective	To provide knowledge about the basics of pharmaceutic care and guaranting the sustainability of health, about developing the capacity to manage and prevention of work-related diseases.
Learning outcomes	Having passed the module, the student: <ol style="list-style-type: none"> 1. knows organizational problems that accompany with the consuming, producing and controlling medication, and with medication information; 2. knows the basics of legislature, the basic standing points of legal acts regulating public health and labour health care; 3. knows the criteria for evaluating and enhancing population health condition; 4. knows the health risks in living and working environments and their evaluation principles; 5. knows the possibilities of pre-medical aid and first aid methods.
Contents and method of independent work	Working through and supplementing lecture material by following recommended literature. Independently solving exercises assigned by lecturers, making home-work through e-courses. Working through seminar topics and preparing for discussions.
Õppemeetodid	Lectures, seminars, e-learning
Evaluation	Graded prelim.

Module code	11009
Module title	HUMAN STUDIES
Module volume (ECTS hours)	10
Contact learning (incl e-learning)	124
Independent work	At least 136
Practical training	-
Year of studies	I-II year
Integrated modules/subjects	Medication effect on organism Producing and dispensing medication
Module objective	To provide basic knowledge for professional work and understanding medication effect: about the structure of human organism, organ system and their functioning, pathologic deflections in organ functions and in the metabolism of organism in case of microbic infection and inherital diseases caused by gene defects.
Learning outcomes	Having passed the module, the student: <ol style="list-style-type: none"> 1. knows the structure and functions of human organism, and the biological principles of the interaction of these functions; 2. knows the essence of pathologic processes and their originating mechanisms; 3. knows the more important disease generators and the diseases caused by them; 4. knows the principles and application methods of aseptics and antiseptics; 5. knows the essence of inheritance and changeability, and the most widely spread inheritance diseases.
Contents and method of independent work	Working through and supplementing lecture material by following recommended literature. Independently solving exercises assigned by lecturers, making home-work in e-courses. Working through seminar topics and preparing for discussions.
Evaluation	The module subjects are evaluated separately: Anatomy and physiology - exam; Basics of organism functions - exam;

	Pathology - graded prelim.
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Module code	
Module title	ELECTIVE AND OPTIONAL SUBJECTS
Module volume (ECTS hours)	10
Contact learning (incl e-learning)	130
Independent work	At least 130
Practical training	-
Year of studies	I-III year
Integrated modules/subjects	According to the descriptions of selected subjects. Vastavalt validud õppeainete kirjeldustele
Module objective	Completing speciality knowledge proceeding from the objective of study programme and developing general knowledge through the subjects freely selected by the student.
Learning outcomes	According to the learning outcomes of selected subjects.
Contents and method of independent work	Accordingly to the independent work foreseen in the subject.
Evaluation	Prelim

Module code	1LTE09
Module title	FINAL EXAM
Module volume (ECTS hours)	5
Contact learning (incl e-learning)	-
Independent work	130
Practical training	-
Year of studies	III year
Integrated modules/subjects	Medication effect on organism Producing and dispensing medication
Module objective	Familiarizing the knowledge acquired in study programme.
Learning outcomes	1. Knows medications, their components and the technologies for extemporal producing of medication; 2. knows the impacts of medication and herbs, their concurrence and side-effects; 3. knows the use of medication and herbs for preventing and treating diseases; 4. knows work in pharmacy; in pharmacy deals with the reception, producing and dispensing medications, and consulting customers about medications.
Contents and method of independent work	Repeating the knowledge learned through study programme.
Evaluation	Complex exam

Subject passports

Module title/ code	CHEMISTRY 1KE09
Subject code	1KE09/AOK

Subject title	ANORGANIC CHEMISTRY
Subject volume	4 ECTS
Contact learning (incl e-learning)	74
Independent work	At least 30
Practical training	-
Year of studies	I year
Integrated modules/subjects	Organic chemistry, Biochemistry, Analytic chemistry, Pharmaceutic chemistry, Medication technology
Subject objective	The subject supports speciality studies and is the prerequisite for studying Analytic chemistry, Pharmaceutic chemistry and Medication technology subjects.
Learning outcomes	Having passed the course, the student knows: 1. substance classifications; 2. hydrolysis process; 3. redox process; 4. most important compounds of metals and non-metals.
Contents and method of independent work	Independent acquiring of material recommended by lecturer, solving exercises assigned through e-course, working through lecture topics and material.
Evaluation	Exam

Module title/ code	CHEMISTRY 1KE09
Subject code	1KE09/OK
Subject title	ORGANIC CHEMISTRY
Subject volume	5 ECTS
Contact learning (incl e-learning)	84
Independent work	At least 46
Practical training	-
Year of studies	I year
Integrated modules/subjects	Biochemistry Pharmaceutic chemistry Medication technology Biopharmacy
Subject objective	The subject supports speciality studies and is the prerequisite for studying Biochemistry, Pharmaceutic chemistry, Medication technology and Biopharmacy.
Learning outcomes	Having passed the course, the student knows the most important organic compounds (hydrocarbons, compounds containing oxygen and nitrogen, aromatic compounds, hetero cycle compounds) and their synthesis, chemical features, connections between compounds, their application areas in medicine, and the basic principles of organic chemistry.
Contents and method of independent work	Independent acquiring of material recommended by lecturer, solving exercises, working through lecture topics and material.
Evaluation	Exam

Module title/ code	CHEMISTRY 1KE09
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Subject code	1KE09/AK
Subject title	ANALYTIC CHEMISTRY
Subject volume	6 ECTS
Contact learning (incl e-learning)	114
Independent work	At least 46
Practical training	-
Year of studies	I year
Integrated modules/subjects	Pharmaceutic chemistry Medication technology Anorganic chemistry Organic chemistry Biochemistry
Subject objective	To introduce the essence of analytic chemistry, and the methods in quantitative and qualitative analysis. To provide the student the practical skills for analyzing different compounds, including medication.
Learning outcomes	Having passed the course, the student: 1. knows the methods used in analytic chemistry; 2. is capable to determine different compounds; 3. knows and can use the basic methods of volume analysis; 4. knows the effect of cations and anions on human organism and their use in medicine in the chemical composition of medication.
Contents and method of independent work	Independent acquiring of material recommended by lecturer, solving exercises, working through lecture topics and material.
Evaluation	Graded prelim.

Module title/ code	CHEMISTRY 1KE09
Subject code	1KE09/BK
Subject title	BIOCHEMISTRY
Subject volume	3 ECTS
Contact learning (incl e-learning)	40
Independent work	At least 38
Practical training	-
Year of studies	I year
Integrated modules/subjects	Anorganic chemistry Organic chemistry Analytic chemistry
Subject objective	Introductory knowledge into biochemistry (the structure of substance, permanence laws, big and small biomolecules, organism composition, most important biomolecules with their features and mutual collaboration in metabolism) provide the student with integrated nature-scientific world-view from speciality's viewpoints and necessities. The objective of Biochemistry and Biophysics course is the acquiring of knowledge on the level which would enable to understand human structure, the functioning and development of life.
Learning outcomes	Having passed the biochemistry course, the student: 1. has knowledge about the basic principles of biochemistry; 2. has basic knowledge about the structure of substance and the qualities depending from it;

	<ol style="list-style-type: none"> 3. understands the connections of organism's micro- and macrostructure, has a basis about the structure of organisms and cellular structure; 4. has knowledge about organism as a whole, its single elements, and the mutual connections and collaboration between these elements.
Contents and method of independent work	<ol style="list-style-type: none"> 1. Reading a biochemistry related text in foreign language and composing a summary in Estonian language (16 hours); 2. a seminar presentation ca 10 min on given topic (10 hours); 3. assisting material for understanding lecture material better (10 hours); 4. solving a problem at home on given topic.
Evaluation	Graded prelim

Module title/ code	CHEMISTRY 1KE09
Subject code	1KE09/FK
Subject title	PHARMACEUTIC CHEMISTRY
Subject volume	7 ECTS
Contact learning (incl e-learning)	116
Independent work	At least 66
Practical training	-
Year of studies	II year
Integrated modules/subjects	Anorganic chemistry Organic chemistry Analytic chemistry.
Subject objective	To provide basic knowledge about the chemical structure of main curatives, their physical and chemical structure, and about pharmaceutic analysis.
Learning outcomes	Having passed the subject course, the student: <ol style="list-style-type: none"> 1. knows the main structure of more important medication groups and the structure and features of curatives belonging there; 2. knows the principles of identifying and quantitative determining most important curatives; 3. knows the requirements for chemical purity of curatives; 4. knows the preserving requirements for curatives.
Contents and method of independent work	Working through and supplementing lecture material by following recommended literature. Independently solving exercises assigned by lecturers, making homework in e-courses. Working through seminar topics and preparing for discussions.
Evaluation	Exam

Module title/ code	PHYTOTHERAPY 1TR09
Subject code	1TR09/BOT
Subject title	BOTANY
Subject volume	4 ECTS
Contact learning (incl e-learning)	78
Independent work	At least 26
Practical training	-
Year of studies	I year
Integrated modules/subjects	Pharmacognosy Phytotherapy Natural products
Subject objective	To provide basic knowledge about the structure and functioning of herbs and the

	importance of plants in living nature and human activities necessary for acquiring speciality subjects (pharmacognosy, phytotherapy) related with herbs.
Learning outcomes	Having passed the subject-course, the student: <ol style="list-style-type: none"> 1. has a perception about the structure of plant cells, plant tissues and plant organs, and their functions inside plants; 2. knows the features of reproduction and the progress of life cycle of plants; 3. has a perception about the principles of plant classification; 4. knows most fertile plant families and the most important plant species, cultivated plants and herbs belonging there; 5. has a perception about the most important physiological processes in plants (photosynthesis, transpiration, mineral nutrition).
Contents and method of independent work	Working through and supplementing lecture material by following recommended literature. Independently solving exercises assigned by lecturers, making home work in e-courses. Working through seminar topics and preparing for discussions.
Evaluation	Exam

Module title/ code	PHYTOTHERAPY 1TR09
Subject code	1TR09/FGN
Subject title	PHARMACOGNOSY
Subject volume	5 ECTS
Contact learning (incl e-learning)	98
Independent work	At least 32
Practical training	-
Year of studies	II year
Integrated modules/subjects	Botany Phytotherapy Natural products
Subject objective	To provide basic knowledge about drugs processed from medication, herbs with their main active substances, and the biosynthesis of active substances.
Learning outcomes	Having passed the subject course, the student: <ol style="list-style-type: none"> 1. knows herbs and the drugs processed from them; 2. knows the most important groups of active substances among herbs, their chemical structure and biosynthesis mechanisms; 3. knows substances of which depends the treatment effect of most important herbs and drugs; 4. knows the principles of collecting, drying and preserving herbs.
Contents and method of independent work	Working through and supplementing lecture material by following recommended literature. Independently solving exercises assigned by lecturers, making home work in e-courses. Working through seminar topics and preparing for discussions
Evaluation	Exam

Module title/ code	PHYTOTHERAPY 1TR09
Subject code	1TR09/FUT
Subject title	PHYTOTHERAPY
Subject volume	4 ECTS
Contact learning (incl e-learning)	50
Independent work	At least 54
Practical training	-

Year of studies	III year
Integrated modules/subjects	Botany; Pharmacognosy; Natural products
Subject objective	To provide knowledge about the basics of phytotherapy and about using plants for treating disorders and pathological deflections in organism function.
Learning outcomes	Having passed the subject course, the student: 1. knows the principles and methods of using plants for treatment purposes; 2. knows the most important herbal curing substances and their pharmacologic effect; 3. knows the most important herbs and their use for treating a particular disease.
Contents and method of independent work	Working through and supplementing lecture material by following recommended literature. Independently solving exercises assigned by lecturers, making home work in e-courses. Working through seminar topics and preparing for discussions.
Evaluation	Exam

Module title/ code	PHYTOTHERAPY 1TR09
Subject code	1TR09/LT
Subject title	NATURAL PRODUCTS
Subject volume	2 ECTS
Contact learning (incl e-learning)	26
Independent work	At least 26
Practical training	-
Year of studies	II YEAR
Integrated modules/subjects	Pharmacognosy Phytotherapy Botany
Subject objective	The subject comprises teaching about retail medications, preparations produced from natural substances or plants belonging among food additives and external natural products.
Learning outcomes	Having passed the course, the student: 1. knows and can recommend preparations produced from natural substances and herbs; 2. knows the most widely spread interactions and side-effects of preparations produced from natural substances and herbs; 3. can use adequate information from speciality literature and internet for evaluating advertising statements in public media.
Contents and method of independent work	Work with speciality literature; familiarizing with product catalogues, pharmacy expositions, internet information; preparing presentation on given topic.
Evaluation	Graded prelim.

Module title/ code	MEDICATION EFFECT ON ORGANISM 1RTO09
Subject code	1RTO09/FL
Subject title	PHARMACOLOGY
Subject volume	9 ECTS
Contact learning (incl e-learning)	116
Independent work	At least 118
Practical training	-

Year of studies	II year
Integrated modules/subjects	Human studies Pharmacotherapy Biopharmacy
Subject objective	1. To learn to know the effect-mechanisms and effects of medications; 2. Passing pharmacology course is the prerequisite for pharmacotherapy studies.
Learning outcomes	Having passed the course, the student: 1. understands the pharmacogenetics and pharmacodynamics of medications; 2. possesses knowledge about the medication effect on organism and the factors influencing the effects; 3. knows different ways of administering medication, and about the dependency of medication effect from the form and way of administering the medication; 4. can apply mathematic calculations when dosing medication; 5. possesses knowledge about medication groups, their pharmacogenetics, pharmacodynamics, dosing, contraindications and side-effects; 6. can use pharmacology reference books, hand-books and internet sources.
Contents and method of independent work	Repeating lecture material, preparing for every-time quiz and the test which is graded and assessed by total grade. Reading recommended literature.
Evaluation	Exam.

Module title/ code	MEDICATION EFFECT ON ORGANISM 1RTO09
Subject code	1RTO09/FT
Subject title	PHARMACOTHERAPY
Subject volume	8 ECTS
Contact learning (incl e-learning)	104
Independent work	At least 104
Practical training	-
Year of studies	II-III year
Integrated modules/subjects	Pharmacology Biopharmacy
Subject objective	During the passing of subject, knowledge will be acquired about the curing of organism or prevention of diseases with medication. Different medication groups, the sucking of medication, effect on organism, side-effects, overdose effects, the elimination and transpiring of medication will be studied.
Learning outcomes	Having passed the course, the student: 1. possesses knowledge about the most widely used medication groups, about their pharmaco-ginetics and dynamics; 2. possesses knowledge about the effects of main medication groups on organism and the factors influencing the effect of medication; 3. possesses knowledge about the indications and conraindcations of main medication groups; 4. possesses knowledge about the side-effects and interaction of medication, and knows the general treatment principles of acute medication poisoning; 5. can use the sources of medication information: pharmacology reference books and hand-books, and main internet sources.
Contents and method of independent work	Composing study-conspectus about a selected medication or medication group, and making a presentation about this in seminar. Every student composes a study-map for the end of the subject containing materials about a medication/ medication group that has been independently

	studied.
Evaluation	Exam

Module title/ code	MEDICATION EFFECT ON ORGANISM 1RTO09
Subject code	1RTO09/VF
Subject title	VETERINARY PHARMACY
Subject volume	2 ECTS
Contact learning (incl e-learning)	26
Independent work	At least 26
Practical training	-
Year of studies	III year.
Integrated modules/subjects	Anatomy and physiology Pharmacology Legislature
Subject objective	1. To introduce the students with the features of pet and agricultural animals. 2. To provide skills for offering adequate advice for animal owners in the competency of pharmacy worker. 3. To possess skills for issuing prescription medication for animals and to know the legislature related with animals.
Learning outcomes	Having passed the course, the student: 1. possesses skills for understanding the differences between people and animals in administering medication and in prescribing dosages; 2. can provide adequate advice foremost to pet owners.
Contents and method of independent work	Repeating and applying lecture material in every-day life on pets.
Evaluation	Graded prelim.

Module title/ code	MEDICATION EFFECT ON ORGANISM 1RTO09
Subject code	1RTO09/BF
Subject title	BIOPHARMACY
Subject volume	4 ECTS
Contact learning (incl e-learning)	52
Independent work	At least 52
Practical training	-
Year of studies	II year
Integrated modules/subjects	Pharmacology Pharmacotherapy Veterinary pharmacy Toxicology
Subject objective	Biopharmacy provides knowledge about the pharmacogenetics of medications and the biopharmaceutic meaning, identifying substance in close connection with pharmaceutical technology and pharmacology.
Learning outcomes	Having passed the course, the student: 1. knows the pharmacogenetics of medications; 2. knows the biopharmaceutic meaning of physical-chemical features of curative substances, and the treatment forms derived from medication.
Contents and	To acquire a perception about the connections between the manufacturing

method of independent work	technology of medication with administering it and the occurrence of pharmacological effects caused by active substances in medication.
Evaluation	Graded prelim.

Module title/code	MEDICATION EFFECT ON ORGANISM 1RTO09
Subject code	1RTO09/TO
Subject title	TOXICOLOGY
Subject volume	2 ECTS
Contact learning (incl e-learning)	26
Independent work	At least 26
Practical training	-
Year of studies	III year
Integrated modules/subjects	Pharmacology Pharmacotherapy
Subject objective	To provide an overview about the possible toxic effect on organism functions by medications and other strong effect substances, and about preventing poisoning and the principles of treatment.
Learning outcomes	Having passed the course, the student: 1. knows the effect of most widely spread poisons on organism; 2. knows antidotes and can provide first aid in case of poisoning; 3. knows the symptoms and treatment principles of chronic poisonings.
Contents and method of independent work	Familiarizing with lecture material and working through obligatory literature.
Evaluation	Graded prelim

Module title/code	PRODUCING AND DISPENSING MEDICATION 1RVV09
Subject code	1RVV09/FKT
Subject title	MEDICATION TECHNOLOGY
Subject volume	8 ECTS
Contact learning (incl e-learning)	132
Independent work	At least 76
Practical training	-
Year of studies	II-III year
Integrated modules/subjects	Pharmaceutic product checking Pharmacy organization
Subject objective	During the course, the producing of medication in pharmacies and in pharmaceutical industry will be taught.
Learning outcomes	Having passed the course, the student: 1. can use the equipment of weighing and measuring; 2. can produce medication technologically correctly and by knowing the physical-chemical features of curing substances; 3. knows a- and antiseptics and can follow the sanitary regulations; 4. can correctly finalize and conserve the produced medication for dispensing.
Contents and method of independent work	To learn independently the technological production methods of different forms of medication.
Evaluation	Exam.

Module title/code	PRODUCING AND DISPENSING MEDICATION 1RVV09
Subject code	1RVV09/FKT
Subject title	PHARMACEUTIC PRODUCT CHECKING
Subject volume	5 ECTS
Contact learning (incl e-learning)	62
Independent work	At least 68
Practical training	-
Year of studies	II-III year
Integrated modules/subjects	Anatomy; Physiology; Pharmacology.
Subject objective	To provide a perception about the variety of options in selecting pharmacy products and about their differences.
Learning outcomes	Having passed the course, the student can provide adequate advice and to make reasonable decisions in order to select the appropriate product for particular client.
Contents and method of independent work	The student clarifies lecture material, familiarizes with it and associates theory with practice.
Evaluation	Graded prelim.

Module title and code	PRODUCING AND DISPENSING MEDICATION 1RVV09
Subject code	1RVV09/FKR
Subject title	PHARMACY ORGANIZATION
Subject volume	4 ECTS
Contact learning (incl e-learning)	50
Independent work	At least 54
Practical training	-
Year of studies	II-III year
Integrated modules/subjects	Medication technology Pharmaceutic product checking Medication technology, pharmaceutic kaubatundmine.
Subject objective	Pharmacy organization is one of the basic subjects in training pharmacists, providing knowledge about the work organization of pharmacies and the valid legislature.
Learning outcomes	Having passed the course, the student: <ol style="list-style-type: none"> 1. knows the work organization of pharmacies through different offices; 2. knows the legislature regulating the work organization of pharmacies; 3. has an overview about different pharmacy related companies; 4. can apply the acquired skills in practical work; 5. can use the information material necessary in pharmacy work for consulting patients as well as health care workers.
Contents and method of independent work	To make acquaintance with the legislature regulating the work organization in pharmacy.
Evaluation	Graded prelim.

Module title/ code	PROFESSIONAL DEVELOPMENT 1PA09
Subject code	1PA09/MH
Subject title	MEDICAL HUMANITARISTICS
Subject volume	4 ECTS
Contact learning (incl e-learning)	50
Independent work	At least 54
Practical training	-
Year of studies	I year
Integrated modules/subjects	Latin Organization behaviour
Subject objective	The introduction of students to studies necessary for professional development through integrated subjects of medical humanitaristics. Possibilities will be created for discussing the questions from the area created by medical humanitaristic subjects supporting professional development, for writing essays on relevant topic and taking tests. Basic knowledge and skills will be provided for lifelong professional development of students.
Learning outcomes	Student: 1. values the development of pharmacy as science; 2. can use the basic principles, main theories of medicine philosophy and sociology, and the different paradigms explaining the evolvement of society.
Contents and method of independent work	During independent work, lecture topics will be repeated and studied for further group works in seminars. Methods: working with evidence based literature.
Evaluation	Graded prelim

Module title and code	PROFESSIONAL DEVELOPMENT 1PA09
Subject code	1PA09/LK
Subject title	LATIN
Subject volume	3 ECTS
Contact learning (incl e-learning)	40
Independent work	At least 38
Practical training	-
Year of studies	I year
Integrated modules/subjects	Anatomy and physiology; Medication technology
Subject objective	To achieve the skills in Latin necessary for pharmacist.
Learning outcomes	Having passed the course, the student: 1. can use correctly the speciality terminology incl the expressions and abbreviations used in dispensing; 2. knows how to construct necessary expressions and to forward them correctly; 3. values eruditeness, correct speciality language and it's adequate use.
Contents and method of independent work	Independent work fixes the knowledge acquired from lectures and sets a groundwork for further research work. Methods: learning at home; working with literature; exercising
Evaluation	Exam

Module title/code	PROFESSIONAL DEVELOPMENT 1PA09
Subject code	1PA09/ORK
Subject title	ORGANIZATION BEHAVIOUR
Subject volume	8 ECTS
Contact learning (incl e-learning)	100
Independent work	At least 108
Practical training	-
Year of studies	I, II, III year
Integrated modules/subjects	Medical humanitaristics
Subject objective	The introduction of students to studies necessary for professional development through the integrated subjects of organization behaviour. Possibilities will be created for discussing the questions from the area created by organization behaviour subjects supporting professional development, for writing essays on relevant topic and taking tests. Basic knowledge and skills will be provided for lifelong professional development of students.
Learning outcomes	Student: 1. knows the basic principles and main theories of organization behaviour; 2. knows different techniques used in client services; 3. applies the team work skills acquired in management studies; 4. knows the differences between cultures; 5. knows the psychological features of human life cycle; 6. can use contemporary literature about organization behaviour.
Contents and method of independent work	During independent work, the lecture topics will be repeated and studied for further group works in seminars. Methods: working with evidence based literature.
Evaluation	Graded prelim

Module title/code	RESEARCH AND DEVELOPMENT WORK METHODOLOGY 1UAM09
Subject code	1UAM09/KO
Subject title	LANGUAGE STUDIES
Subject volume	6 ECTS
Contact learning (incl e-learning)	78
Independent work	At least 78
Practical training	-
Year of studies	I-II year
Integrated modules/subjects	Organization behaviour; Basics of scientific work
Subject objective	To provide skills in the language of studies and at least in one foreign language to explain the problems in pharmacist's speciality in oral and written form, and to participate in speciality discussions.
Learning outcomes	Having passed the research work module, the student: 1. has Estonian language skills at least on C 1 level; 2. has skills of at least one foreign language on B 1 level; 3. knows scientific language and can summarize, quote and refer scientific texts; 4. knows English speciality terminology and can use it in translations and communicating with customer; 5. has Russian language skills at least on communicational level.

Contents and method of independent work	Learning vocabulary, making exercises, translating short texts, preparing for oral presentations, composing and finalizing written works, repeating language rules.
Evaluation	Graded prelim

Module title/code	RESEARCH AND DEVELOPMENT WORK METHODOLOGY 1UAM09
Subject code	1UAM09/TA
Subject title	BASICS OF SCIENTIFIC WORK
Subject volume	9 ECTS
Contact learning (incl e-learning)	46
Independent work	At least 188
Practical training	-
Year of studies	I-II year
Integrated modules/subjects	Language studies
Subject objective	To explain the basics of evidence based research work by using different information sources (incl speciality databases), to plan and conduct applied scientific researches and development works, and to value the ethic issues of research work.
Learning outcomes	Having passed the course, the student: <ol style="list-style-type: none"> 1. can use evidence based speciality sources; 2. knows different research work methods and can use these in applied research; 3. values ethics and is ready to apply the acquired knowledge in professional work; 4. can use e-learning possibilities in study environment; 5. has practical skills for searching and processing information (text processing, table calculation, computer and presentation graphics, file operations).
Contents and method of independent work	Working with literature; composing a concept card and a presentation; communicating in the forum of learning environment; learning from and teaching each other; project work (essay, article analysis, a short research work, report); composing and carrying out information search strategy; evaluation of search results; giving feedback about results. Finalizing independent works in accordance with 'Tallinn Health Care College requirements for finalizing student works'. Search results and process descriptions into study map.
Evaluation	Graded prelim

Module title/ code	BASICS OF HEALTH CARE 1TA09
Subject code	1TA09/FH
Subject title	PHARMACEUTIC CARE
Subject volume	2 ECTS
Contact learning (incl e-learning)	26
Independent work	At least 26
Practical training	-
Year of studies	II-III year
Integrated modules/subjects	Living and working environment.
Subject objective	The 'Pharmaceutic care' subject comprises the basics of legislature and social

	pharmacy. In the framework of legislature, the student will be provided the basic knowledge about labour and general health care legislature. Social pharmacy provides knowledge about organizational problems that accompany the consuming and distribution of medication, informing about medication, the manufacturing, consuming and controlling medications.
Learning outcomes	Having passed the course, the student: 1. has acquired knowledge about labour and health care legislature; 2. knows the system of medication aid, has a perception about pharmaceutical marketing; 3. knows the factors influencing the consuming of medication; 4. has a perception about the process of manufacturing new medication.
Contents and method of independent work	In the frames of independent work: 1. to deepen knowledge about the principles of labour and health care legislature; 2. to acquire a perception about the principles of designing and the functioning of contemporary medication aid system.
Evaluation	Graded prelim.

Module title/ code	BASICS OF HEALTH CARE 1TA09
Subject code	1TA09/KK
Subject title	LIVING AND WORKING ENVIRONMENT
Subject volume	3 ECTS
Contact learning (incl e-learning)	40
Independent work	At least 38
Practical training	-
Year of studies	I-year
Integrated modules/subjects	Producing and dispensing medication Human science
Subject objective	To provide knowledge about guaranting the sustainability of health, developing the capability to manage and about the prevention of diseases related with work.
Learning outcomes	Having passed the course, the student: 1. knows the criteria of assessing and enhancing population health condition; 2. knows the health risks of living and work environments and the principles of assessment; 3. knows the possibilities for pre-medical aid and first aid methods.
Contents and method of independent work	In the frames of independent work: 1. to deepen knowledge about the principles of labour and health care legislature; 2. to acquire a perception about the principles of developing and the functioning of contemporary medication aid system.
Evaluation	Graded prelim

Module title/code	HUMAN STUDIES 11O09
Subject code	11O09/OEA
Subject title	BASICS OF ORGANISM FUNCTIONS
Subject volume	4 ECTS
Contact learning (incl e-learning)	52
Independent work	At least 52

Practical training	-
Year of studies	I year
Integrated modules/subjects	Genetics and microbiology
Subject objective	To provide the student an integrated nature-scientific world-view from the viewpoints of the specialty in order to understand human functioning and the microbiological, inherital and changeability processes.
Learning outcomes	Having passed the course, the student: <ol style="list-style-type: none"> 1. has knowledge about the basic principles of genetics and microbiology; 2. has basic knowledge about the structure of substance and acquires an overview about the essence of heredity and changeability; about the most widely known chromosome and gene diseases, about the possibilities of applying genetics in medicine; 3. has knowledge about the most widely spread microorganisms and the diseases caused by them, knows the methods for preventing the passing forward of diseases caused by infections; 4. acknowledges risks originating from environment.
Contents and method of independent work	Working through and supplementing lecture material by following recommended literature. Independently solving exercises assigned by lecturers.
Evaluation	Complex exam

Module title/ code	HUMAN STUDIES 11O09
Subject code	11O09/AF
Subject title	ANATOMY AND PHYSIOLOGY
Subject volume	3 ECTS
Contact learning (incl e-learning)	40
Independent work	At least 38
Practical training	-
Year of studies	I-year
Integrated modules/subjects	Basics of organism functions Pathology Pharmacology
Subject objective	To provide the student a readiness to understand the mechanisms regulating the evolvment, structure, functioning and activity of organ systems, originating from the physical processes inside it; also to teach the skills for using elementary Latin terminology in areas of human anatomy, physiology ja pathology.
Learning outcomes	Having passed the course, the student: <ol style="list-style-type: none"> 1. knows the evolvment of human organism; 2. knows about the structure and functioning of human organism; 3. knows mechanisms regulating the structure and functioning of human organism; 4. can explain the processes in organism by basing on physical processes inside organism; 5. values the acquired knowledge; 6. can associate the acquired knowledge with other subjects; 7. knows Latin terminology.
Contents and method of independent work	Finalizing an exercise book containing conspectuses about the basic principles of topics assigned for all seminars and group works; conspectuses and presentations made on topics of independent works; tables; schemes, figures and concept cards

	by using relevant latin terminology.
Evaluation	Exam

Module title/ code	HUMAN STUDIES 11O09
Subject code	11O09/PAT
Subject title	PATHOLOGY
Subject volume	3 ECTS
Contact learning (incl e-learning)	38
Independent work	40
Practical training	-
Year of studies	II year
Integrated modules/subjects	Anatomy-physiology Biochemistry Basics of organism functions
Subject objective	To provide an overview about general patho-anatomic and patho-physiologic mutations on different levels of organism which are common to many or all diseases. In the frames of special pathology to introduce the etiopathogenesis of main internal diseases, pathoanatomic and –physiologic deflections, symptomatics, and the possibilities for etiopathogenetic treatment.
Learning outcomes	Having passed the course, the student: 1. knows the essence of pathology and can use the basic principles of general pathology; 2. knows alternative changes in case of which the tissue damage is prevailing. This comprises dystrofy, necrosis and blood circulation disorders; 3. has an overview about inflammation processes and immune pathology; 4. knows adopting and regenerative processes, also the essence and evolving mechanisms of tumors; 5. has preliminary knowledge about specific pathological processes in case of most spread internal diseases; 6. can associate medication impact with the etiopathogenesis of diseases.
Contents and method of independent work	Working with pathology related literature. Preparation for tests and prelims. Writing a report about the etiopathogenesis, clinical picture and treatment principles of freely selected disease. Preparation for seminar presentation and discussions.
Evaluation	Graded prelim