Subject program „1RTO17/FL2 Pharmacology II”

Year: 2019/2020 Status: Active

Subject language Estonian
Creditpoints 5 ECTS
Grading method Distinctive (letters)
Academicians

General

Subject objective To familiarize himself/herself with pharmacodynamics: action mechanisms of medicines, side and adverse effects, clinical usage, contraindications and interactions with other medicines.

Learning outcomes 1. Understands the pharmacodynamics of medicines.
2. Knows the action mechanisms of medicines for respiratory and gastrointestinal systems as well as of chemotherapeutics and central nervous system medicines, their usage, side effects and contraindications.
3. Understands the effect and usage of biological medications and is able to use pharmacological information sources, handbooks, and Internet sources.

Learning outcomes	
1.Outcome	Student understands the pharmacodynamics of medicines.
grade „Sufficient(E)”	Student is able to explain on an elementary level which parts of the cell and how affect the effect of the drug. Cannot describe in detail nor to reason. Describes the possible problems in an organism and solutions to them insufficiently and/or incorrectly, does not know all the sites of action nor the substances or their classification into the drug system. Knows the bigger group to which the specific drug belongs to but makes mistakes in formulating the subgroups and/or their names or forgets details and is at times insecure and hesitant. Hesitates when naming the active ingredient, and has general knowledge of the effect. Makes major mistakes in naming the routes of administration, the speed and duration of the effect and in describing the process of leaving the organism. Uses general wording in naming the usage, contraindications and side-effects.

Learning outcomes	
grade „Satisfactory(D)”	Student is able to explain which parts of the cell and how affect the effect of the drug quite well. Cannot always describe the processes in detail nor to reason. Describes the possible problems in an organism and solutions to them sometimes incompletely and/or incorrectly, does not know all the sites of action nor the substances or their classification into the drug system. Knows the bigger group to which the specific drug belongs to but makes some mistakes in formulating the subgroups and/or their names or forgets details and is at times insecure and hesitant. Some problems occur when naming the active ingredient, and has general knowledge of the effect. Makes mistakes in naming the routes of administration, the speed and duration of the effect and in describing the process of leaving the organism. May use general wording in describing the usage, contraindications and side-effects.
grade „Good(C)”	Student can explain which parts of the cell and how affect the effect of the drug well. Describes the possible problems in an organism and their solutions quite well, knows the sites of action and the substances as well as their classification into the drug system. Knows the bigger group to which the specific drug belongs to as well as the subgroups and names. Is able to name the origin and effect of the active ingredient. Describes the routes of administration, speed and duration of effect as well as the ways of leaving the organism well. Some mistakes may occur when describing the ways of usage, contraindications and side-effects.
grade „Very good(B)”	Student can explain which parts of the cell and how affect the effect of the drug very well. Describes the possible problems in an organism and their solutions in detail, knows the sites of action and the substances as well as their classification into the drug system. Knows the bigger group to which the specific drug belongs to as well as the subgroups and names. Is able to name the origin and effect of the active ingredient very well. Describes the routes of administration, speed and duration of effect as well as the ways of leaving the organism very well. Makes no mistakes in describing the ways of usage, contraindications and side-effects.
grade „Excellent(A)”	Student can explain which parts of the cell and how affect the effect of the drug on an excellent level. Describes the possible problems in an organism and their solutions in detail, knows all the sites of action and the substances as well as their classification into the drug system. Knows the bigger group to which the specific drug belongs to as well as the subgroups and names. Is able to name the origin and effect of the active ingredient in detail and on an excellent level. Describes the routes of administration, speed and duration of effect as well as the ways of leaving the organism on an excellent level. Makes no mistakes in describing the ways of usage, contraindications and side-effects.

Learning outcomes	
2.Outcome	Knows the action mechanisms of medicines for respiratory and gastrointestinal systems as well as of chemotherapeutics and central nervous system medicines, their usage, side effects and contraindications.
grade „Sufficient(E)”	Has general knowledge but makes mistakes about the effect of central nervous system medicines and chemotherapeutics. Is also hesitant in describing their usage, side-effects and contraindications.
grade „Satisfactory(D)”	Has satisfactory knowledge but makes some mistakes in describing the effect of central nervous system medicines and chemotherapeutics, their usage, side-effects and contraindications.
grade „Good(C)”	Has good knowledge but makes a few mistakes in describing the effect of central nervous system medicines and chemotherapeutics, their usage, side-effects and contraindications. Understands the age-related and other characteristics of drug usage.
grade „Very good(B)”	Has very good knowledge and is able to explain the effect of central nervous system medicines and chemotherapeutics, their usage, side-effects and contraindications. Understands the age-related and other characteristics of drug usage.
grade „Excellent(A)”	Has excellent knowledge and is able to explain the effect of central nervous system medicines and chemotherapeutics, their usage, side-effects and contraindications. Understands the age-related and other characteristics of drug usage.
3.Outcome	Understands the effect and usage of biological medications and is able to use pharmacological information sources, handbooks, and Internet sources.
grade „Sufficient(E)”	Student understands the effect and usage of biological medicines modestly and knows how to use pharmacology-related reference books, handbooks and internet sources.
grade „Satisfactory(D)”	Student understands the effect and usage of biological medicines satisfactorily and knows how to use pharmacology-related reference books, handbooks and internet sources.
grade „Good(C)”	Student understands the effect and usage of biological medicines well and knows how to use pharmacology-related reference books, handbooks and internet sources.
grade „Very good(B)”	Student understands the effect and usage of biological medicines very well and knows how to use pharmacology-related reference books, handbooks and internet sources.
grade „Excellent(A)”	Student understands the effect and usage of biological medicines excellently and knows how to use pharmacology-related reference books, handbooks and internet sources.

Subject program parts

default

Changer confirm	Merle Kiloman 26.08.2019
Reviewer confirm	Merle Kiloman 26.08.2019
Administrator confirm	Kristiina Puura 26.08.2019

Study in different study forms

Study form	Lecture	Excerice	Seminar	Practice	Homework	Internet study	Out of office	Practical training
All study forms	60.0		6.0		64.0			

General description
The aim of the subject is to provide students with knowledge on the specifics and action mechanisms of the drugs influencing respiratory and gastrointestinal drugs, central nervous system and chemotherapeutics, their effect, side-effects and clinical usage.

Forms of studying
Detailed study of the beforementioned drug groups. It is mandatory to participate in 2/3 of the lecturers and seminars.

Teaching methods
Lectures, seminars.

Content and method for independent study
Reading the recommended professional literature and the materials uploaded by the lecturer in the Study Information System (SIS). Revising lecture materials, preparing for the test/discussion during each lecture. Following every three topics the material is revised during the seminar which is then followed by the test. The subject ends with a written exam.

Required reading (K)
Lecturer's materials in Study Information System (SIS).
Rang H.P., Ritter J.M., Flower R.J., Henderson G. „Rang & Dale`s Pharmacology” 2016.
"Pharmaca Estica" 2011.

Recommended reading (T)
Whalen K. "Lippincott Illustrated Reviews: Pharmacology" 2015
"Basic Pharmacokinetics and Pharmacodynamics" 2017
"Drug Metabolism Handbook" 2017
"Drugs: From Discovery to Approval" by Rick Ng 2015
Lilja J., Salek S., Alvarez A., Hamilton D. "Pharmaceutical Systems. Global Perspectives" 2018
Nienstedt, Hänninen, Arstila, Björkqvist "Inimese füsioloogia ja anatoomia” 2007
Kingisepp P.-H. "Inimese füsioloogia” 2006
Professional journals
Articles from EBSCO and Medline

Methods of assessment
The grade is formed on the results of three major tests (3 x 10% = 30%) and the exam grade (70%) .

Additional information
Exam may be electronic, or on paper and it is a multiple choice test.
Test/ discussion on the understanding of the previous topic may be held in the beginning of each lecture (duration 10 – 15 minutes).
The test which is not passed (less than 51%) may be retaken orally.
Exam may be taken if all three tests are passed with a positive result.
The use of any kind of materials during the tests and the exam is not allowed.

Subject program

Nr	Activity	Hours	Literature	Academicians
1.	Hingamiselundkonda mõjutavad ained – astma, allergia ja köha ja nende puhul kasutatavad preparaadid. Seedeelundkonda mõjutavad ained – maohaavandite, kõrvetiste, oksendmise, kõhulahtisuse ja -kinnisuse raviks kasutatavad ained. / Essential substances for the respiratory system – asthma, allergy, cough and their preparations. Gastrointestinal agents – agents used to treat stomach ulcers, heartburn, vomiting, diarrhea and constipation.	16	Õppejõu materjalid ÕIS-is/ Lecturer's material in Study Information System (SIS) Rang H.P., Ritter J.M., Flower R.J., Henderson G. „Rang & Dale`s Pharmacology” 2016	Merle Kiloman
2.	Kemoterapeutikumid – viirusvastased ained, antibiootikumid, seentevastased ained, algloomadevastased ained, anthelmintikumid, kasvajatevastased ained. / Chemotherapeutics – anti-viral substances, antibiotics, anti-fungal substances, anti-parasitic substances, anthelmintics, anti-tumour substances.	16	Õppejõu materjalid ÕIS-is/ Lecturer's material in Study Information System (SIS) Rang H.P., Ritter J.M., Flower R.J., Henderson G. „Rang & Dale`s Pharmacology” 2016	Merle Kiloman
3.	Kesknärvisüsteemi toimivad ained – anksiolüütikumid ja uinutid, antidepressandid, neuroleptikumid, antiparkinsonistlikud ained, antiepileptikumid, tsentraalsed lihasrelaksandid, lokaal- ja üldanesteetikumid. / Medicines affecting central nervous system – anxiolytics and sedatives, anti-depressants, neuroleptics, anti-parkinson drugs, anti-epileptics, central muscle relaxants, local and general anaesthetics.	16	Õppejõu materjalid ÕIS-is/ Lecturer's material in Study Information System (SIS) Rang H.P., Ritter J.M., Flower R.J., Henderson G. „Rang & Dale`s Pharmacology” 2016	Merle Kiloman

4.	Bioloogilised ravimid. / Biological medicines.	4	Õppejõu materjalid ÕIS-is / Lecturer's material in Study Information System (SIS) Rang H.P., Ritter J.M., Flower R.J., Henderson G. „Rang & Dale`s Pharmacology” 2016	Merle Kiloman
5.	Ravimite kasutamise ealised jm iseärasused – lastel, vanemaealistel, rasedatel ja imetavatel naistel. / Age-related and other special characteristics of drug usage in children, elderly, pregnant women and breastfeeding women. Ravimite farmakokineetilised ja farmakodünaamilised interaktsioonid. / Pharmacokinetic and pharmacodynamic interactions of drugs.	6	Õppejõu materjalid ÕIS-is / Lecturer's material in Study Information System (SIS) Rang H.P., Ritter J.M., Flower R.J., Henderson G. „Rang & Dale`s Pharmacology” 2016	Merle Kiloman
6.	Eksam / Exam	2	Õppejõu materjalid ÕIS-is / Lecturer's material in Study Information System (SIS) Rang H.P., Ritter J.M., Flower R.J., Henderson G. „Rang & Dale`s Pharmacology” 2016	Merle Kiloman