



# ФАРМАЦЕВТИЧЕН ФАКУЛТЕТ МЕДИЦИНСКИ УНИВЕРСИТЕТ - СОФИЯ

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DEAN:  
(prof. Al. Zlatkov, DSc)

## DEPARTMENT OF PHARMACEUTICAL CHEMISTRY

### SYLLABUS of Pharmaceutical Chemistry

INCLUDED IN "PHARMACY" EDUCATION CURRICULUM.

DEGREE OF EDUCATION: "MASTER"

CREDITS (ECTS): 18

	Semester	Academic hours /per week	Total academic hours /per academic year
Lectures	V and VI	3	90
Practicals	V and VI	2	60
Seminars	V and VI	3	75
Academic hours	V and VI	8	225
TYPE OF CONTROL:		2 colloquium per semester	Final academic year exam

### ANNOTATION

Pharmaceutical chemistry is an applied fundamental science. It is based on theoretical and practical premises in the selection and study of drug products and the trends in the search for new biologically active compounds and products thus contributing in the moulding of the pharmacist specialist. Pharmaceutical chemistry, as special discipline integrates information from a number of previously studied fundamental chemical and medicobiological subjects and is closely related to the special disciplines – pharmaceutical analysis, drug technology with biopharmacy, pharmacology and toxicology. During the Pharmaceutical chemistry education the examined drug products are divided into pharmacological groups, using the corresponding ATC classification of WHO. Each pharmacological group is further examined based on chemical classification.

Each section includes short characteristic of the pharmacological group, international nonpropriety names (INN names) and some of the popular trade synonyms of the drugs, their structural formulas and chemical names, synthetic schemes, physico-chemical properties, mechanism of action and application, metabolism, stability, storage and changes during storage, chemical structure, physical and chemical properties and pharmacological activity relationships. Some regularities of this reaction are pointed out and its application in synthesis of new drug products – empirical approach, rational approach for development of new active

compounds, taking into account the hydrophilic-lipophilic, electronic, steric, biochemical and pharmacokinetic factors, as well as on the road of modelling the structure of drug products. In separate chapters the methods for favourable alteration of physical and chemical properties aimed to reduce the toxicity, to improve the organoleptic indexes, resorption etc.

The seminars in Pharmaceutical chemistry are aimed to solidify the knowledge from the lectures. They are performed according to the above mentioned approach.

In the practical exercises the methods for synthesis of definite drug product are studied, as well as the isolation, purification and identification approaches. The students gain practical skills and discipline, when working in chemical laboratory.

The purpose of the Pharmaceutical chemistry programme is to present to pharmacy students systematic and profound knowledge, with a view to form them as one of the most competent specialists in the area of effective development, application and assignment of drug products.

**Type of control and evaluation: routine control- 4 (four) colloquium, two per semester, academic year exam – written and oral.**

## **English language training**

### **SYLLABUS**

1. Anesthetics: general and local
2. Sedative and hypnotic drugs
3. Anxiolytics
4. Antiepileptic drugs
5. Antiparkinson drugs
6. Antipsychotics
7. Non-steroidal anti-inflammatory drugs
8. Analgesics: narcotics and non-narcotics. Antimigraine drugs
9. Antidepressants
10. Psychostimulants and nootropics
11. Drugs acting on sympathetic peripheral nervous system
12. Drugs acting on parasympathetic peripheral nervous system
13. Peripheral muscle relaxants and ganglioblockers
14. Antihistamines and drugs for peptic ulcer
15. Anti-ischemic drugs
16. Antiarrhythmic drugs
17. Beta-blockers ( $\beta$ - blockers)
18. Calcium channel blockers
19. Cardiac glycosides
20. Diuretics
21. Hypolipidemic drugs
22. Anticoagulants and coagulants
23. Vasodilators
24. ACE inhibitors
25. Anti-infective drugs – antituberculosis drugs and sulphonamides

26. Anti-infective drugs - nitrofurans, quinolines and quinolones
27. Anti-infective drugs – imidazoles
28. Antineoplastic (anticancer) drugs
29. Antiviral drugs
30. Antibiotics
31. Corticosteroids
32. Steroids: steroid hormones (sex hormones, corticosteroids) and drugs, anabolic steroids, oral contraceptives
33. Antidiabetic drugs
34. Antimalarial, antihelmitic, antiemetic, laxative and antitusive drugs
35. Drug metabolism
36. Structure / activity relationship and drug design
37. Prodrugs

Date: .....

Program author:

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Head of the Department of Pharmaceutical Chemistry:

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