



KARPAGAM
ACADEMY OF HIGHER EDUCATION
(Deemed to be University)
(Established Under Section 3 of UGC Act, 1956)

FACULTY OF PHARMACY KARPAGAM ACADEMY OF HIGHER EDUCATION

(Deemed to be University)
(Established Under Section 3 of UGC Act 1956)
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Minutes of Meeting of Board of Studies 2017 – 18 for B.Pharm Degree Course

Minutes of the meeting of the Board of Studies in Pharmacy held on 04/05/2017 at 11.00 AM in the Faculty of Pharmacy at Karpagam Academy of Higher Education.

Members Present:

1. Dr. R. Sundaraganapathy, Dean, Faculty of Pharmacy, KAHE, Coimbatore.
2. Mr. K. Abdul Khayum, Dept. of Pharmacology, FOP, KAHE, Coimbatore.
3. Ms. G. Praveena, Dept. of Pharmacognosy, FOP, KAHE, Coimbatore.
5. Ms. K. Gayathri, Dept. of Pharmaceutics, FOP, KAHE, Coimbatore.
6. Dr. R.K. Janakiraman, Senior Executive, FR&D, Strides Shasun Pharmaceuticals Ltd., Puducherry.
7. Dr. R. Sambathkumar, Professor & Principal, J.K.K. Nattraja College of Pharmacy, B. Komarapalayam, Namakkal.

Leave of Absence to the following members granted:

1. Ms. K.N. Arathi, Dept. of Pharm. Chemistry, FOP, KAHE, Coimbatore.

The Chairperson welcomed the members of the Board. The Board carefully scrutinized the draft syllabus and after detailed discussion the following resolutions were passed.

Agenda: 1

To consider for adoption of curriculum of Pharmacy Council of India for B.Pharm & D.Pharm from the academic year 2017 – 18 (PCI approved Regulations, Course of study & Scheme of examination and Syllabus).

Resolution: 1

Resolved to approve the adoption of curriculum of Pharmacy Council of India for B.Pharm & D.Pharm from the academic year 2017 – 18 (Approved Regulations, Course of study & Scheme of examination and Syllabus given in Annexure-I).

Minutes of Meeting:

- Dr. R. Sundaraganapathy, Dean, FOP briefed the framework of syllabus for the academic year 2016 – 17 to the members present in the BOS meeting. He also submitted the subject wise syllabus to the nominated members to make corrections based on the local and global needs, relating to employability, entrepreneurship and skill development.

The following changes are made in the existing syllabus

S. No.	Course Name	Details of Change
1.	Anatomy and Physiology– I	1. Course name has been changed to Human Anatomy and Physiology – I 2. Included the following topics in Unit I – Tissue level of Organisation. 3. Excluded the following topics in Unit I – Human skeleton 4. Unit II is changed to integumentary system, skeletal and joints. 5. Unit III is changed to body fluids and blood and lymphatic system. 6. Unit IV is changed to peripheral nervous system and special senses. 7. Unit V is changed to cardiovascular system.
2.	Pharmaceutical Inorganic Chemistry-I	1. Course name has been changed to Pharmaceutical Inorganic Chemistry. 2. Unit I is changed to Impurities in pharmaceutical substances. 3. Unit II is changed to acid, bases and buffers, electrolytes, and dental products. 4. Unit III is changed to gastrointestinal agents. 5. Unit IV is changed to miscellaneous compounds. 6. Unit V is changed to radiopharmaceuticals.
3.	Pharmaceutical Organic Chemistry – I	Pharmaceutical Organic Chemistry – I Course is removed and a new Course Pharmaceutical Analysis is included.
4.	Biochemistry – I	Biochemistry-I Course is removed and a new Course Pharmaceutics – I is included.
5.	Biostatistics & Computer Applications – I	Biostatistics & Computer Applications – I Course is removed and a new Course Communication Skills is included.
6.	Anatomy and Physiology Laboratory – I	1. Course name has been changed to Human Anatomy and Physiology – I Practical. 2. Included the following topics – Determination of Blood grouping, ESR, Heart rate, Pulse rate, BP.
7.	Pharmaceutical Inorganic	1. Course name has been changed to Pharmaceutical Inorganic

	Chemistry Laboratory – I	<p>Chemistry Practical.</p> <p>2. Included the following topics – limit test for Iron, Heavy metals, lead, arsenic, Identification test for Magnesium hydroxide, ferrous sulphate, sodium bicarbonate, calcium gluconate, copper sulphate, Test for purity and preparation of potash alum and ferrous sulphate.</p> <p>3. Excluded the following topics – preparation of barium sulphate, magnesium sulphate, test for adsorption power of heavy kaolin and systematic qualitative analysis of unknown inorganic mixture.</p>
8.	Pharmaceutical Organic Chemistry Laboratory – I	Pharmaceutical Organic Chemistry Laboratory – I Course is removed and a new Course Pharmaceutical Analysis Practical is included.
9.	Biochemistry Laboratory – I	Biochemistry-I Course is removed and a new Course Pharmaceutics – I Practicalis included.
10.	Biostatistics & Computer Applications Laboratory – I	Biostatistics & Computer Applications – I Course is removed and a new Course Communication Skills Practicalis included.
11.	Anatomy and Physiology– II	<p>1. Course name has been changed to Human Anatomy and Physiology – II</p> <p>2. Unit I is changed from urinary system to Nervous system.</p> <p>3. Unit II is changed from reproductive system to digestive system and energetics.</p> <p>4. Unit III is changed from endocrinology to respiratory system and urinary system.</p> <p>5. Unit IV is changed from nervous system to endocrine system.</p> <p>6. Unit V is changed from sense organs to reproductive system and introduction to genetics.</p>
12.	Pharmaceutical Inorganic Chemistry – II	Pharmaceutical Inorganic Chemistry – II Course is removed and a new Course Pathophysiology is included.
13.	Pharmaceutical Organic Chemistry – II	<p>1. Course name has been changed to Pharmaceutical Organic Chemistry – I.</p> <p>2. Unit I is changed from Benzene to classification, nomenclature and isomerism of organic compounds.</p> <p>3. Unit II is changed from Aryl Halides to alkanes, alkenes and conjugated dienes.</p> <p>4. Unit III is changed from Phenols and amines to alkyl halides and alcohols.</p> <p>5. Unit IV is changed from Types of reaction and factors influencing the reaction to carbonyl compounds.</p> <p>6. Unit V is changed from reactive intermediates to carboxylic acids and aliphatic amines.</p>
14.	Biochemistry – II	<p>1. Course name has been changed to Biochemistry.</p> <p>2. Unit I is changed from lipid metabolism to biomolecules and bioenergetics.</p> <p>3. Unit II is changed from amino acid metabolism to carbohydrate metabolism and biological oxidation.</p>

		<p>4. Unit III is changed from nuclei acid metabolism to lipid metabolism and amino acid metabolism.</p> <p>5. Unit IV is changed from replication and protein synthesis to nucleic acid metabolism and genetic information transfer.</p> <p>6. Unit V is changed from clinical biochemistry to enzymes.</p>
15.	Biostatistics & Computer Applications – II	<p>1. Course name has been changed to Computer Applications in Pharmacy.</p> <p>2. Unit I is changed from biostatistics to number system and concept of information systems and software.</p> <p>3. Unit II is changed from regression and correlation probabilities to web technologies.</p> <p>4. Unit III is changed from computer packages to application of computers in pharmacy.</p> <p>5. Unit IV is changed from introduction to computer networks to bioinformatics.</p> <p>6. Unit V is changed from computer graphics to computer as data analysis.</p>
16.	Anatomy and Physiology Laboratory – II	<p>1. Course name has been changed to Human Anatomy and Physiology – II Practical</p> <p>2. Included the following topics – endocrine system, demonstration of general neurological examination, positive and negative feedback mechanism, total blood count, determination of tidal volume and vital capacity, permanent slides of vital organs and gonads.</p> <p>3. Excluded the following topics – blood grouping, recording of human body temperature and BMI, BP, heart rate and pulse rate.</p>
17.	Pharmaceutical Inorganic Chemistry Laboratory – II	This course is removed.
18.	Pharmaceutical Organic Chemistry Laboratory – II	<p>1. Course name has been changed to Pharmaceutical Organic Chemistry – I Practical.</p> <p>2. Included the following topics – preparation of derivatives and confirmation of the unknown compound by m.p./b.p., construction of molecular models.</p>
19.	Biochemistry Laboratory – II	<p>1. Course name has been changed to Biochemistry Practical</p> <p>2. Included the following topics – qualitative analysis of carbohydrates, urine abnormal constituents, quantitative analysis of reducing sugars, identification test for proteins, determination of blood creatinine, blood sugar, Preparation of buffer solution.</p> <p>3. Excluded the following topics – Determination of serum triglycerides, effect of pH on salivary amylase.</p>
20.	Biostatistics & Computer Applications Laboratory – II	<p>1. Course name has been changed to Computer Applications in Pharmacy Practical</p> <p>2. Included the following topics – design questionnaire using word processing package, create a HTML webpage, retrieve</p>

		<p>the information of drug using online tools, generating and printing a report, exporting tables, queries, forms and reports to web pages and XML pages.</p> <p>3. Excluded the following topics – computer operating system, simple programming.</p>
21.	Physical Pharmaceutics – I	<p>1. Unit I is changed from history of pharmacy to solubility of drugs.</p> <p>2. Unit II is changed from diffusion to states of matter and physicochemical properties of drug molecules.</p> <p>3. Unit III is changed from colloidsto surface and interfacial phenomenon.</p> <p>4. Unit IV is changed from coarse dispersion to complexation and protein binding.</p> <p>5. Unit V is changed from micromeritics to pH, buffer and ionic solutions.</p>
22.	Pharmaceutical Analysis and Physical Chemistry – I	This course is removed.
23.	Advanced Pharmaceutical Organic Chemistry – I	<p>1. Course name has been changed to Pharmaceutical Organic Chemistry – II</p> <p>2. Unit I is changed from polynuclear hydrocarbons to benzene and its derivatives.</p> <p>3. Unit II is changed from reactions of synthetic importance to phenols, aromatic amines and acids.</p> <p>4. Unit III is changed from study of name reactions to fat and oils.</p> <p>5. Unit IV is changed from heterocyclic compounds to polynuclear hydrocarbons.</p> <p>6. Unit V is changed from heterocyclic compounds to cycloalkanes.</p>
24.	Pharmacy Practice and Pathophysiology – I	Pharmacy Practice and Pathophysiology – I Course is removed and a new Course Pharmaceutical Microbiology is included.
25.	Pharmaceutical Technology – I	Pharmaceutical Technology – I Course is removed and a new Course Pharmaceutical Engineering is included.
26.	Social Pharmacy and Behavioural Science	. This course is removed.
27.	Physical PharmaceuticsLaboratory – I	<p>1. Course name has been changed to Physical Pharmaceutics – I Practical</p> <p>2. Included the following topics – determination of solubility, pKa, partition coefficient, surface tension, HLB number, Langmuir constant, CMC, stability constant.</p> <p>3. Excluded all the experiments.</p>
28.	Pharmaceutical Analysis and Physical Chemistry Laboratory – I	This course is removed.
29.	Advanced Pharmaceutical Organic Chemistry – I	1. Course name has been changed to Pharmaceutical Organic Chemistry – II Practical

		<p>2. Included the following topics – Recrystallization, steam distillation, determination of iodine value, preparation of compounds by reactions such as halogenation, nitration, oxidation, hydrolysis, diazotisation, Claisen Schmidt reaction, perkin reaction.</p> <p>3. Excluded the following topics – quantitative determination of organic compounds, preparation of heterocyclic compounds.</p>
30.	Pharmacy Practice and Pathophysiology Laboratory – I	Pharmacy Practice and Pathophysiology Laboratory– I Course is removed and a new Course Pharmaceutical Microbiology Practical is included.
31.	Communication Skills	This course is removed.
32.	Physical Pharmaceutics – II	<p>1. Unit I is changed from kinetics to colloidal dispersion.</p> <p>2. Unit II is changed from interfacial phenomenon to rheology.</p> <p>3. Unit III is changed from rheology to coarse dispersion.</p> <p>4. Unit IV is changed from pH, buffer and isotonic solutions to micromeritics.</p> <p>5. Unit V is changed from complexation to drug stability.</p>
33.	Pharmaceutical Analysis and Physical Chemistry – II	Pharmaceutical Analysis and Physical Chemistry – IICourse is removed and a new Course Pharmaceutical Organic Chemistry – III is included.
34.	Advanced Pharmaceutical Organic Chemistry – II	Advanced Pharmaceutical Organic Chemistry – IICourse is removed and a new Course Medicinal Chemistry – Iis included.
35.	Pharmacy Practice & Pathophysiology – II	Pharmacy Practice & Pathophysiology – IICourse is removed and a new Course Pharmacology – Iis included.
36.	Pharmaceutical Technology – II	Pharmaceutical Technology – IICourse is removed and a new Course Pharmacognosy and Phytochemistry– Iis included.
37.	Pharmaceutical Jurisprudence	This course is removed.
38.	Physical Pharmaceutics Laboratory – II	Course name has been changed to Physical Pharmaceutics – II Practical
39.	Pharmaceutical Analysis and Physical Chemistry Laboratory – II	Pharmaceutical Analysis and Physical Chemistry Laboratory – IICourse is removed and a new Course Pharmaceutical Organic Chemistry – III Practical is included.
40.	Advanced Pharmaceutical Organic Chemistry Laboratory – II	Advanced Pharmaceutical Organic Chemistry Laboratory – IICourse is removed and a new Course Medicinal Chemistry – IPractical is included.
41.	Pharmacy Practice & Pathophysiology Laboratory – II	This course is removed.
42.	Environmental Sciences	This course is removed.
43.	Pharmacognosy and Phytochemistry – I	<p>1. Course name has been changed to Pharmacognosy and Phytochemistry – II</p> <p>2. Unit I is changed from history and development of pharmacognosy to metabolic pathways in higher plants</p> <p>3. Unit II is changed from general principles of cultivation and</p>

		<p>collection of vegetable drugs to secondary metabolites</p> <p>4. Unit III is changed from adulteration of crude drugs to isolation, identification and analysis of phytoconstituents.</p> <p>5. Unit IV is changed from detailed study of crude drugs including carbohydrates and lipids to industrial production, estimation and utilisation of phytoconstituents.</p> <p>6. Unit V is changed from detailed study of crude drugs includes volatile oils, saponins, sterols and alkaloids to basics of phytochemistry.</p>
44.	Medicinal Chemistry – I	<p>1. Course name has been changed to Medicinal Chemistry – II</p> <p>2. Unit I is changed from introduction to antihistamine agents</p> <p>3. Unit II is changed from adrenergic neurotransmitters, sympathomimetic agents to antianginal agents, diuretics, antihypertensive agents.</p> <p>4. Unit III is changed from adrenergic antagonists, cholinergic receptors and parasympathomimetic agents to anti-arrhythmic, antihyperlipidemic, coagulants and anticoagulants, drugs used in congestive heart failure.</p> <p>5. Unit IV is changed from cholinergic blockers, ganglionic blockers to drugs acting on endocrine system.</p> <p>6. Unit V is included with antidiabetic agents.</p>
45.	Pharmaceutical Dosage Forms and Cosmetic Technology – I	Pharmaceutical Dosage Forms and Cosmetic Technology – I is removed and a new Course Industrial Pharmacy – I is included.
46.	Pharmacology – I	<p>1. Course name has been changed to Pharmacology – II.</p> <p>2. Unit I is changed from general pharmacology to pharmacology of drugs acting on CVS</p> <p>3. Unit II is changed from pharmacokinetics to Drugs acting on CVS and urinary system.</p> <p>4. Unit III is changed from introduction to PNS, parasympathomimetics, parasympatholytics, sympathomimetics, sympatholytics, to Autocoids and related drugs.</p> <p>5. Unit IV is changed from neuromuscular blockers, skeletal muscle relaxants, local anesthetics to drugs acting on endocrine system.</p> <p>6. Unit V is changed from drugs acting on urinary system to endocrine system and bioassay.</p>
47.	Pharmaceutical Microbiology	This course is removed.
48.	Hospital and Clinical Pharmacy – I	This course is removed.
49.	Pharmacognosy and Phytochemistry Laboratory – I	<p>1. Course name has been changed to Pharmacognosy and Phytochemistry – II Practical</p> <p>2. Included the following topics – morphology of crude drugs, isolation detection of active principles, paper</p>

		chromatography, TLC, analysis of crude drugs by chemical tests.
50.	Medicinal Chemistry Laboratory – I	This course is removed.
51.	Pharmacology Laboratory – I	<ol style="list-style-type: none"> 1. Course name has been changed to Pharmacology – II Practical. 2. Included the following topics – effect of drugs on heart, BP, heart rate, diuretic activity, DRC, bioassay, determination of PA2 value and PD2 value, anti-inflammatory and analgesic activity. 3. Excluded all the topics
52.	Pharmaceutical Microbiology Laboratory	This course is removed and a new course Industrial Pharmacy Practical included.
53.	Pharmaceutical Dosage Forms and Cosmetic Technology Laboratory – I	This course is removed.
54.	Pharmacognosy and Phytochemistry–II	Pharmacognosy and Phytochemistry–II Course is removed and a new Course Herbal Drug Technology is included.
55.	Medicinal Chemistry – II	<ol style="list-style-type: none"> 1. Course name has been changed to Medicinal Chemistry – III. 2. Unit I is changed from general Anesthetics, Sedative and hypnotics to antibiotics (beta lactam, aminoglycosides, tetracyclins) 3. Unit II is changed from skeletal muscle relaxants, antipsychotics to antibiotics (macrolides), antimalarials. 4. Unit III is changed from anticonvulsants, CNS stimulants to antitubercular, urinary tract antiinfectives, antiviral agents. 5. Unit IV is changed from Drugs acting on CVS to antifungal, antiprotozoal agents, anthelmintics. 6. Unit V is changed from diuretics, coagulants and anticoagulants, oral hypoglycemic agents, drugs acting on GIT to introduction to drug design, combinatorial chemistry.
56.	Pharmaceutical Dosage Forms and Cosmetic Technology –II	Pharmaceutical Dosage Forms and Cosmetic Technology –II Course is removed and a new Course Biopharmaceutics and Pharmacokinetics is included.
57.	Pharmacology – II	<ol style="list-style-type: none"> 1. Course name has been changed to Pharmacology – III. 2. Unit I is changed from CNS pharmacology, general anaesthetics to drugs acting on respiratory system and GIT 3. Unit II is changed from psychopharmacological agents, antiepiletics, narcotic analgesics and antagonists to chemotherapy – general principles, sulphonamides and cotrimoxazole, antibiotics. 4. Unit III is changed from drugs acting on CVS (antihypertensive, antianginal, antiarrhythmic drugs) to antitubercular, antileprotic, antifungal, antiviral, anthelmintics, antimalarial and antiamoebic agents 5. Unit IV is changed from antihyperlipidemic, hematinics,

		<p>anticoagulants fibrinolytics, antiplatelet drugs, blood and plasma expanders to chemotherapy of UTI and STD, malignancy, immunopharmacology.</p> <p>6. Unit V is changed from drugs acting on respiratory system to toxicology and chronopharmacology.</p>
58.	Pharmaceutical Biotechnology	<p>1. Unit I is changed from bioprocess technology to introduction, enzyme biotechnology</p> <p>2. Unit II is changed from enzyme biotechnology to recombinant DNA technology.</p> <p>3. Unit IV is changed from animal biotechnology, molecular biology and engineering to microbial biotransformation and mutation.</p> <p>4. Unit V is changed from molecular biology database to fermentation technology.</p>
59.	Hospital & Clinical Pharmacy – II	Hospital & Clinical Pharmacy – II Course is removed and a new Course Quality Assurance is included.
60.	Pharmacognosy and Phytochemistry Laboratory –II	Pharmacognosy and Phytochemistry Laboratory –II Course is removed and a new Course Herbal Drug Technology is included.
61.	Medicinal Chemistry Laboratory – II	<p>1. Course name has been changed to Medicinal Chemistry – III Practical.</p> <p>2. Includes the following topics – preparation of intermediates by microwave, drawing structures and reactions using chemdraw, determination of physicochemical properties.</p>
62.	Pharmaceutical Dosage Forms and Cosmetic Technology Laboratory –II	This course is removed.
63.	Pharmacology Laboratory – II	<p>1. Course name has been changed to Pharmacology – III Practical.</p> <p>2. Includes the following topics – dose calculation, antiallergic activity, antiulcer, GIT motility, hypoglycaemic, pyrogen test, oral toxicity, acute skin and eye irritation, pharmacokinetic parameters, biostatistics methods.</p>
64.	Pharmaceutical Biotechnology Laboratory	This course is removed.
65.	Formulative Pharmacy and Biopharmaceutics – I	Formulative Pharmacy and Biopharmaceutics – I Course is removed and a new Course Industrial Pharmacy – II is included.
66.	Advanced Pharmacognosy – I	This course is removed.
67.	Modern Methods of Pharmaceutical Analysis – I	<p>1. Course name has been changed to Instrumental Methods of Pharmaceutical Analysis.</p> <p>2. The following topics are included in Unit II – Flame photometry, atomic absorption spectroscopy, nepheloturbidimetry.</p> <p>3. Atomic absorption spectroscopy, nephelometry and</p>

		turbidimetry were excluded and chromatography (column, paper and Thin layer), electrophoresis are included in Unit III. 4. Unit IV is changed from NMR spectroscopy to Gas chromatography and HPLC. 5. Unit V is changed from Mass spectroscopy to Ion exchange chromatography and affinity chromatography.
68.	Medicinal Chemistry – III	Medicinal Chemistry – III Course is removed and a new Course Novel Drug Delivery System is included.
69.	Pharmacology – III	Pharmacology – III Course is removed and a new Course Pharmacy Practice is included.
70.	Professional Electives	Professional Electives Course is changed to new elective courses.
71.	Formulative Pharmacy and Biopharmaceutics Laboratory – I	This Course is removed.
72.	Advanced Pharmacognosy Laboratory – I	This Course is removed.
73.	Modern Methods of Pharmaceutical Analysis Laboratory – I	1. Course name has been changed to Instrumental Methods of Pharmaceutical Analysis Practical. 2. Included experiments involving colorimetry, fluorimetry, nepheloturbidimetry, paper chromatography, TLC, Column chromatography, HPLC, Gas chromatography.
74.	Medicinal Chemistry Laboratory – III	This Course is removed.
75.	Pharmacology Laboratory – III	This Course is removed.
76.		
77.	Formulative Pharmacy and Biopharmaceutics – II	Formulative Pharmacy and Biopharmaceutics – II Course is removed and a new Course Biostatistics and Research Methodology is included.
78.	Advanced Pharmacognosy – II	This Course is removed.
79.	Modern Methods of Pharmaceutical Analysis – II	This Course is removed.
80.	Medicinal Chemistry – IV	This Course is removed.
81.	Pharmacology – IV	Pharmacology – IV Course is removed and a new Course Social and Preventive Pharmacy is included.
82.	Formulative Pharmacy and Biopharmaceutics Laboratory – II	This Course is removed.
83.	Advanced Pharmacognosy Laboratory – II	This Course is removed.
84.	Modern Methods of Pharmaceutical	This Course is removed.

	Analysis Laboratory – II	
85.	Medicinal Chemistry Laboratory – IV	This Course is removed.
86.	Pharmacology Laboratory – IV	This Course is removed.

The following courses were new courses

Remedial Biology/Remedial Mathematics

Remedial Biology Practical

Environmental sciences

Pharmaceutical Engineering Practical

Pharmaceutical Jurisprudence.

Practice School.

Electives

Pharmaceutical Marketing – Theory

Pharmaceutical Regulatory Science – Theory

Pharmacovigilance – Theory

Quality Control and Standardizations of Herbals – Theory

Computer Aided Drug Design – Theory

Cell and Molecular Biology – Theory

Cosmetic Science – Theory

Experimental Pharmacology – Theory

Advanced Instrumentation Techniques – Theory

The overall percentage of content change in the syllabus is 93.04%

Ph.D. Syllabus

The overall percentage of content change in the syllabus is 0%

The meeting came to an end with vote of thanks by the Chairperson.

Chair Person

04/05/2017

DEAN

FACULTY OF PHARMACY

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