

TEACHING PLAN FOR ACADEMIC YEAR 2020-2021

Name of the Teacher: Mrs. Jadhav P.B.

Subject: Pharmaceutical Jurisprudence


Class: Final Year. B. Pharm Sem VII

Academic Year: 2020-21

Sr. No.	Month	No. of Lectures available	Details of Topics to be covered
01	June	06	
			Legislation to regulate then profession of Pharmacy The Pharmacy act 1948
		1	Definitions, PCI
		1	Education Regulation, Approval of institution
		1	State & Joint pharmacy council
		1	President & vice President, Inspection, power of inspectors
		1	Registration of Pharmacists
			Legislation to regulate import, manufacture, distribution & sales of drugs & cosmetics
			The Drugs and Cosmetics Act 1940 & rules 1945 & amendments
		1	Introduction & Objective, Schedules
01	July	12	
		1	Definitions
		1	Administrative Bodies, D.T.A.B., DCC, CDL
		1	Government Analysts, Drug Inspector
		1	Licensing Authorities, Sale of Drug
		1	Restricted Licenses
		1	Registration of Pharmacists
			The Drugs and Magic Remedies Act & Rules 1976
		1	Introduction & Objective, Definitions
		1	Classes of Prohibited & Exempted Advertisements
		1	Offences & Penalties, Miscellaneous
			The Drugs Price Control Order 1998 with latest amendments
		1	Introduction & Objective, Definitions
		1	Price of bulk drug, Retail price of formulation
		1	Penalties, The second schedules & third schedules
02	August	10	
			Narcotic Drugs & Psychotropic substances act 1985.
		1	Introduction & Objective, Definitions, Illicit Traffic
		1	Authorities & Officers, Offences & Penalties
			Prevention of Food Adulteration Act 1954.
		1	Introduction & Objective, Definitions, central committee for food standards central food Laboratory
		1	Miscellaneous ,Offences & Penalties
			Consumer Protection Act.
		1	Introduction & Objective, Definitions, Consumer Protection council
		1	Consumer disputes redressal agencies
			Industrial Development & Regulation Act 1951.

		1	Introduction & Objective, Definitions, Salient features
		1	Salient features
		1	Industrial Safety & Health.
		3	Intellectual Property Rights(IPR)
		1	Introduction of IPR
03	September	10	
		1	Patents, Design
		1	Trademarks, Copyrights, Geographical Indications
			Patent System
		1	Introduction & Definition of Patent
		1	Criteria for obtaining patent (Novel Applications)
			Filing and Processing of Patents
		1	General procedure for securing patents in India.: Case studies
		1	Opposition to Grant of Patent, Patent infringement: Case studies
		1	Silent features of Indian Patents Act 1970 with latest amendments with special reference to
		1	Introduction of Patent Process
		1	Product & Process Patents.
		1	Provision of compulsory license
04	October	4	
		1	Exclusive Marketing Right, The Term of Patent, Patent offices in India
			Pharmaceutical patents in U. S. and the Hatch Waxman Act with reference to generic Drugs
		1	The Orange book
		1	The difference between New Drug Application (NDA) and Abbreviated, The contents of ANDA and bioequivalence
		1	Patent Certification(Para-I, Para-II, Para-III and Para-IV)
06	November	03	
		2	Drug Regulatory Affairs
		1	U.S. – Food & Drug Administration (FDA), Japan-Ministry of Health and Welfare (MHW), U.K. (MHRA)
		1	Europe- European Agency for the Evaluation of Medicinal Products
		2	World Wide Harmonization of Regulatory Affairs
		1	ICH & WHO

Total No. of lectures available in semester: 45

Name and signature:  Mrs. Jadhav P. B.
Department: Pharmaceutical Chemistry

Mr. S.B. Aglawe
Academic In charge

TEACHING PLAN FOR ACADEMIC YEAR 2020-2021

Name of the Teacher: Mrs. P. B. Jadhav

Subject: Pharmaceutical Organic Chemistry-II

Class: Second Year. B. Pharm Sem III

Academic Year: 2020-21

Sr. No.	Month	No. of Lectures available	Details of Topics to be covered
01	June	06	
		02	Benzene and its derivatives, Introduction
		02	Orbital picture, resonance in benzene, Huckel's rule
		02	Reactions of benzene - nitration, sulphonation, halogenation- reactivity,
02	July	12	Friedel craft's alkylation and acylation
		02	Friedel craft's alkylation and acylation
		02	Substituents, effect of substituents on reactivity and orientation of mono substituted benzene compounds towards electrophilic substitution reaction
			Phenols
		01	Methods of preparation and reactions of Phenol
		01	Acidity of phenols, effect of substituents on acidity
		01	Qualitative tests for phenols, structure and uses of phenol, cresols, resorcinol, naphthols
			Aromatic Amines
		01	Methods of preparation and reactions of Aromatic Amines
		02	Basicity of amines, effect of substituents on basicity, Nitrosation reaction
02	Coupling reaction, Sandmayer's reaction, Hinsberg Test, synthetic uses of aryl diazonium salt		
03	August	10	
		02	Fats and Oils Hydrolysis, Hydrogenation, Saponification and Rancidity of oils.
			Stereo Isomerism
		02	Optical isomerism Elements of symmetry, chiral and achiral molecules
		02	Optical activity, enantiomerism, diastereoisomerism, meso compounds
		02	D & L system of nomenclature of optical isomers, sequence rules, R & S system of nomenclature of optical isomers
		02	Geometrical isomerism , Nomenclature of geometrical isomers Cis & Trans
04	Sep	10	
		01	Nomenclature of geometrical isomers (E & Z, Syn & Anti systems)
		01	Methods of determination of configuration of geometrical

			isomers.
			Polynuclear hydrocarbons
		01	Introduction to Polynuclear hydrocarbons
		02	Synthesis, reactions and structure and medicinal uses of naphthalene
		02	Synthesis, reactions and structure and medicinal uses of phenanthrene
		02	Synthesis, reactions and structure and medicinal uses of anthracene
		01	Synthesis, reactions and structure and medicinal uses of diphenylmethane
05	Oct	04	
		02	Synthesis, reactions and structure and medicinal uses of triphenylmethane and their derivatives.
			Cycloalkanes
		01	Methods of preparation and reactions of Cycloalkanes
		01	Stability of cycloalkanes, Moffitt's modification
06	Nov	03	
		02	Sachse Mohr's theory (Theory of strainless rings), reactions of cyclopropane and cyclobutane
		01	reactions of cyclopropane and cyclobutane

Total number of lectures required to complete the syllabus: 45

Name and signature:  Mrs. P.B. Jadhav

Name of the department: Pharmaceutical Organic Chemistry II

Mr. S.B. Aglawe

Academic In-charge

TEACHING PLAN FOR ACADEMIC YEAR 2020- 2021

NAME OF THE TEACHER: MISS.BAGDANE S.B.

SUBJECT: PHARMACEUTICAL JURISPRUDENCE (BP505T) THEORY

CLASS: THIRD YEAR, B. PHARM (SEMESTER-V)

ACADEMIC YEAR: 2020-2021.

Sr. No.	Month	No. of Lectures available	Details of Topics to be covered
1	August	10	UNIT I
		01	Drugs and Cosmetics Act, 1940 and its rules 1945: Objectives, Definitions.
		01	Legal definitions of schedules to the Act and Rules.
		01	Import of drugs – Classes of drugs and cosmetics prohibited from import, Import under license or permit.
		03	Offences and penalties. Manufacture of drugs – Prohibition of manufacture and sale of certain drugs.
		02	Conditions for grant of license and conditions of license for manufacture of drugs, Manufacture of drugs for test, examination and analysis, manufacture of new drug.
		02	Loan license and repacking license.
2	August & September	10	UNIT II
		02	Drugs and Cosmetics Act, 1940 and its rules 1945. Detailed study of Schedule G, H, M, N, P, T.
		04	Schedule U, V, X, Y, Part XII B, Sch F & DMR (OA) Sale of Drugs – Wholesale, Retail sale and restricted license. Offences and penalties Labelling & packing of drugs- General labelling requirements and specimen labels for drugs and cosmetics, List of permitted colours. Offences and penalties.
		02	Administration of the Act and Rules – Drugs Technical Advisory Board, Central drugs Laboratory, Drugs Consultative Committee.
		02	Government drug analysts, Licensing authorities, controlling authorities, Drugs Inspectors.
3	September	10	UNIT III
		03	Pharmacy Act –1948: Objectives, Definitions, Pharmacy

			Council of India; its constitution and functions, Education Regulations, State and Joint state pharmacy councils; constitution and functions, Registration of Pharmacists, Offences and 122 Penalties.
		03	Medicinal and Toilet Preparation Act –1955: Objectives, Definitions, Licensing, Manufacture In bond and Outside bond, Export of alcoholic preparations, Manufacture of Ayurvedic, Homeopathic, Patent & Proprietary Preparations. Offences and Penalties.
		04	Narcotic Drugs and Psychotropic substances Act-1985 and Rules: Objectives, Definitions, Authorities and Officers, Constitution and Functions of narcotic & Psychotropic Consultative Committee, National Fund for Controlling the Drug Abuse, Prohibition, Control and Regulation, opium poppy cultivation and production of poppy straw, manufacture, sale and export of opium, Offences and Penalties.
4	October	08	Unit IV
		03	Study of Salient Features of Drugs and Magic Remedies Act and its rules: Objectives, Definitions, Prohibition of certain advertisements, Classes of Exempted advertisements, Offences and Penalties.
		02	Prevention of Cruelty to animals Act-1960: Objectives, Definitions, Institutional Animal Ethics Committee, CPCSEA guidelines for Breeding and Stocking of Animals, Performance of Experiments, Transfer and acquisition of animals for experiment, Records, Power to suspend or revoke registration, Offences and Penalties.
		03	National Pharmaceutical Pricing Authority: Drugs Price Control Order (DPCO)- 2013. Objectives, Definitions, Sale prices of bulk drugs, Retail price of formulations, Retail price and ceiling price of scheduled formulations, National List of Essential Medicines (NLEM).
5	November	07	Unit V
		03	Pharmaceutical Legislations – A brief review, Introduction, Study of drugs enquiry committee, Health survey and development committee, Hathi committee and Mudaliar committee. Code of Pharmaceutical ethics Definition, Pharmacist in relation to his job, trade, medical profession and his profession, Pharmacist's oath.
		01	Medical Termination of Pregnancy Act.

		01	Right to Information Act.
		02	Introduction to Intellectual Property Rights (IPR).

Total number of lectures available in the SEM- III: 45

S.B. Bagadane

Name and signature: MISS.BAGDANE S.B.

Mr. AGLAWE S.B.

Name of the department: Pharmaceutical Chemistry

Academic In charge

TEACHING PLAN FOR ACADEMIC YEAR 2020- 2021

NAME OF THE TEACHER: MISS.BAGDANE S.B.

SUBJECT: PHARMACEUTICAL MICROBIOLOGY (BP 303) THEORY

CLASS: SECOND YEAR, B. PHARM (SEM III)

ACADEMIC YEAR: 2020-2021.

Sr. No.	Month	No. of Lectures available	Details of Topics to be covered
1	August	10	UNIT I
		01	Introduction, history of microbiology, its branches, scope and its importance.
		01	Introduction to Prokaryotes and Eukaryotes
		01	Study of ultra-structure and morphological classification of bacteria
		03	Nutritional requirements, raw materials used for culture media and physical parameters for growth, growth curve, isolation and preservation methods for pure cultures,
		02	Cultivation of anaerobes, quantitative measurement of bacterial growth (total & viable count).
		02	Study of different types of phase contrast microscopy, dark field microscopy and electron microscopy. Definitions and examples of Probiotics and Prebiotics.
2	August & September	10	UNIT II
		02	Identification of bacteria using staining techniques (simple, Gram's & Acid fast staining) and biochemical tests (IMVIC).
		04	Study of principle, procedure, merits, demerits and applications of Physical, chemical and mechanical method of sterilization.
		02	Evaluation of the efficiency of sterilization methods.
		02	Equipment's employed in large scale sterilization. Sterility indicators.
3	September	10	UNIT III
		03	Study of morphology, classification, reproduction/replication and cultivation of Fungi and Virus.
		03	Factors influencing disinfection, antiseptics and their evaluation For bacteriostatic and bactericidal actions
		01	Evaluation of bactericidal & Bacteriostatic

		03	Sterility testing of products (solids, liquids, ophthalmic and other sterile products) according to IP, BP and USP.
4	October	08	Unit IV
		03	Designing of aseptic area, laminar flow equipments; study of different sources of contamination in an aseptic area and methods of prevention, clean area classification.
		02	Principles and methods of different microbiological assay. Methods for standardization of antibiotics, vitamins and amino acids.
		02	Assessment of a new antibiotic and testing of antimicrobial activity of a new substance.
		01	General aspects-environmental cleanliness.
5	November	07	Unit V
		03	Types of spoilage, factors affecting the microbial spoilage of pharmaceutical products, sources and types of microbial contaminants, assessment of microbial contamination and spoilage.
		02	Preservation of pharmaceutical products using antimicrobial agents, evaluation of microbial stability of formulations.
		01	Growth of animal cells in culture, general procedure for cell culture, Primary, established and transformed cell cultures.
		01	Application of cell cultures in pharmaceutical industry and research.

Total number of lectures available in the SEM- III: 45

S.B. Bagdane

Name and signature: MISS.BAGDANE S.B.

Mr. AGLAWE S.B.

Name of the department: Pharmaceutical Chemistry

Academic In charge

JAGDAMBA EDUCATION SOCIETY'S
S. N. D. COLLEGE OF PHARMACY
 BABHULGAON, TAL-YEOLA, DIST-NASHIK-423401

TEACHING PLAN 2020-2021

Subject : Pharmaceutical Analysis- IV (Practical) (Semester- VII)
Class : Final Year B. Pharm

Sl. No.	Title of experiment	Chemicals required	Glass wares required	Reference books
I	Spectrophotometric estimation of two-component formulations by simultaneous analysis. (minimum Five)			
1)	Paracetamol + Ibuprofen	Paracetamol, Ibuprofen, 0.1 N NaOH	10 ml Volumetric Flask, Pipette, Beaker,	Indian Pharmacopoeia by Ministry of Health and Family Welfare; Published by Controller of Publication, 2007, Vol. II & III Practical Pharmaceutical Chemistry by A.H. Beckett & J.B. Stenlake; CBS Publication; 4th edition; II; Page No. 282 to 288
2)	Paracetamol + Aceclophenac	Paracetamol, Aceclophenac ethanol, distilled water		
3)	Paracetamol + Diclophenac	Paracetamol, Diclophenac ethanol, distilled water		

4)	Paracetamol + Metformine	Paracetamol, distilled water	Metformine,	10 ml Volumetric Flask, Pipette, Beaker	Indian Pharmacopoeia by Ministry of Health and Family Welfare; Published by Controller of Publication, 2007, Vol. II & III
5)	Paracetamol + Caffeine	Paracetamol, water	Caffeine, distilled	10 ml Volumetric Flask, Pipette, Beaker	Practical Pharmaceutical Chemistry by A.H. Beckett & J.B. Stenlake; CBS Publication; 4th edition; II; Page No. 282 to 288
II Spectrophotometric analysis of two components by Q-Method. (minimum five)					
1)	Paracetamol + Ibuprofen	Paracetamol, NaOH	Ibuprofen, 0.1 N	10 ml Volumetric Flask, Pipette, Beaker,	Indian Pharmacopoeia by Ministry of Health and Family Welfare; Published by Controller of Publication, 2007, Vol. II & III
2)	Paracetamol + Aceclophenac	Paracetamol, ethanol, distilled water	Aceclophenac		
3)	Paracetamol + Diclophenac	Paracetamol, distilled water	Diclophenac ethanol,	10 ml Volumetric Flask	Indian Pharmacopoeia by Ministry of Health and Family Welfare; Published by Controller of Publication, 2007, Vol. II & III
4)	Paracetamol + Metformine	Paracetamol, distilled water	Metformine,	10 ml Volumetric Flask	Practical Pharmaceutical Chemistry by A.H. Beckett & J.B. Stenlake; CBS Publication; 4th edition; II; Page No. 282 to 288
5)	Paracetamol + Caffeine	Paracetamol, water	Caffeine, distilled	10 ml Volumetric Flask	Indian Pharmacopoeia by Ministry of Health and Family Welfare; Published by Controller of Publication, 2007, Vol. II & III

III IR-Spectral interpretation of aliphatic and aromatic compounds (minimum two)		
1)	Interpretation of aromatic compounds ex. Phenol and Benzyl alcohol	IR-Spectra
2)	Interpretation of aliphatic compounds ex. acetaldehyde and butane	IR-Spectra
Spectrometric Identification of Organic Compounds by Robert M. Silverstein and Francis X. Webster; Wiley Publication, 6th edition, Page No. 88,89.		
IV	Introductory experiments	
1.	Gas Chromatograph	
2.	SEM	

Total number of lectures available in the year: - 14/per batch

Mrs. Dabhade M. P.

Subject In-charge

Mr. Aglawe S. B.

Academic In-charge

TEACHING PLAN


2020-2021

Subject : Pharmaceutical Analysis (Theory) (Semester- VII)**Class: Final ~~Final~~ Year B. Pharm**

The following topics to be discussed with special reference to quality control and assurance of the pharmaceuticals, its scope and importance in the pharmaceutical industry along with suitable examples

Sr. No. & Unit No.	Lecture No.	Chapter Name and Teaching Point	Time (Hr.)
I		Infrared Spectroscopy	03
1.	1.	Origin of IR spectra & Molecular vibrations	
2.	2.	fundamental bands & Vibrational frequency	
3.	3.	Fermi resonance & Important spectral regions	
		FTIR	04
4.	1	Instrumentation	
5.	2	sample handling	
6.	3	different attachments used in recording FTIR	
7.	4	Analysis and Interpretation of organic compounds based on FTIR Spectra	
		Near Infrared (NIR)	01
8.	1	theory	
		Raman spectroscopy	02
9.	1	theory	
10.	2	instrumentation & applications	
II		Scanning Electron Microscopy (SEM)	03
11.	1	Introduction	
12.	2	principle	
13.	3	applications	
III		Travelling Electron Microscopy (TEM)	03
14.	1	Introduction	
15.	2	principle	
16.	3	applications	
IV		Gas Chromatography	08
17.	1	Theory	
18.	2	instrumentation: sample handling	
19.	3	instrumentation: columns	
20.	4	instrumentation: detectors	
21.	5	derivatisation and quantitation(area normalization,	

		percent area, Internal standard, and External standard method)	
22.	6	derivatisation and quantitation(area normalization, percent area, Internal standard, and External standard method)	
23.	7	derivatisation and quantitation(area normalization, percent area, Internal standard, and External standard method)	
24.	8	applications	
V			
Flash Chromatography			04
25.	1	theory	
26.	2	instrumentation	
27.	3	instrumentation	
28.	4	applications	
VI			
Super Critical Fluid Extraction and Super Critical Fluid Chromatography			04
29.	1	theory	
30.	2	instrumentation	
31.	3	instrumentation	
32.	4	applications	
VII			
Introduction to Automated methods of Analysis:			04
33.	1	Flow injection analysis	
VIII			
High performance Liquid Chromatography (HPLC)			11
34.	1	Theory	
35.	2	instrumentation	
36.	3	applications	
37.	4	Isocratic & Gradient types, Pumps	
38.	5	Columns	
39.	6	Detectors, Tubings, Degassing techniques	
40.	7	Quantitation techniques including Area normalization, percent area	
41.	8	Internal and external standard methods	
42.	9	Trouble shooting	
43.	10	System suitability testing	
44.	11	UPLC: Introduction and advantages over HPLC	
Total Hr.			47


Mrs. Dabhade M. P.
Subject In-charge

Mr. Aglawe S. B.
Academic In-charge

TEACHING PLAN FORMAT- (2020-21)**Pharmacognosy and Phtychemistry II**

SR .N O	NAME OF TOPIC	PRESCRI BED Hr.	REQUI RED Hr.	PLANNING DATES
1	Morphology, histology and powder characteristics & extraction & detection of: Cinchona.	3	9	3,4,5,AUG 2020
2	Morphology, histology and powder characteristics & extraction & detection of Cinnamon	3	9	10,11, 12,AUG 2020
3	Morphology, histology and powder characteristics & extraction & detection of Senna	3	9	17,18,19, AUG 2020
4	Morphology, histology and powder characteristics & extraction & detection of Clove	3	9	24,25,26,AUG 2020
5	Morphology, histology and powder characteristics & extraction & detection of Ephedra	3	9	1,2,7,SEPT 2020
6	Morphology, histology and powder characteristics & extraction & detection of Fennel	3	9	8,9,21,SEPT 2020
7	Morphology, histology and powder characteristics & extraction & detection of Coriander	3	9	15,16,28,SEPT 2020
8	Exercise involving isolation & detection of active principles a. Caffeine - from tea dust.	3	9	22,23,5,SEPT 2020
9	Exercise involving isolation & detection of active principles. b. Diosgenin from Dioscorea	3	9	6,7,12,OCT2020
10	Exercise involving isolation & detection of active principles c. Atropine from Belladonna	3	9	13,14,19, OCT 2020
11	Exercise involving isolation & detection of active principles d. Sennosides from Senna	3	9	20,21,26, OCT 2020
12	TLC of herbal extract	3	9	27,28,2, OCT2020
13	Distillation of volatile oils and detection of phytoconstitents by TLC	3	9	3,4,9,NOV 2020

14	Analysis of crude drugs by chemical tests: (i) Asafoetida (ii) Benzoin	3	9	23,24,25,NOV 2020
15	Analysis of crude drugs by chemical tests (iii) Colophony (iv) Aloes (v) Myrrh	3	9	30,1,2,DEC 2020

Total number of practical turns available in the year: - 15

Name and signature: Mrs. Sharma K.S *K.S. Sharma*

Mr. Aglawe S.B

Name of the department: Pharmacognosy

Academic In charge



Jagdamba Education Society's
SND COLLEGE OF PHARMACY
 Babhulgaon, Tal- Yeola, Dist-Nasik.
 Pharmacognosy and Phytochemistry II
 Third year B Pharm Sem V 2020-21

TEACHING PLAN FORMAT

SR. NO	NAME OF TOPIC	PRESCRIBED Hr.	REQUIRED Hr.	PLANNING DATES	DATE		TEACHING aids	REFERENCES
					STARTING OF TOPIC	COMPLETION OF TOPIC		
1	Metabolic pathways in higher plants and their determination	7	7	3,7,8,10,14,17, 21,	3,AUG 2020	21,AUG 2020	BLACK BOARD, LCD PROJECTOR	Kokate C. K., Gokhale S.B. and Purohit A.P., Textbook of Pharmacognosy, NiraliPrakashan, Pune, 2008
2	General introduction, composition, chemistry & chemical classes, bio sources, methods of extraction, therapeutic uses and commercial applications	14	14	22,24, 28,29,31,4,5,7, 11,12,14,18,19, 21	22,AUG 2020	21,SEPT 2020	BLACK BOARD, LCD PROJECTOR	Kokate C. K., Gokhale S.B. and Purohit A.P., Textbook of Pharmacognosy, NiraliPrakashan, Pune, 2008

	of following secondary metabolites							
3	Isolation, Identification and Analysis of Phytoconstitue nts	6	6	25,26,28,2,3,5,	25,SEPT 2020	5,OCT 2020	BLACK BOARD, LCD PROJECTOR	Rangari V.D., Pharmacog nosy & Phytochem istry (Vol I), Career Pub., Nashik,200 9
4	Industrial production, estimation and utilization of the following phytoconstitue nts:	10	10	9,10,12,16,17,1 9,23,24,26,30,3 1	9,OCT 2020	31,OCT 2020	BLACK BOARD, LCD PROJECTOR	Kokate C. K., Gokhale S.B. and Purohit A.P., Textbook of Pharmacogn osy , NiraliPrakas han, Pune, 2008
5	Basics of Phytochemistry :	8	8	7,9,21,23,27,28 ,30,5	7,NOV 2020	5,DEC 2020	BLACK BOARD, LCD PROJECTOR	Wallis T. E., Textbook of Pharmacog nosy. CBS Publisher & Distribut ors,

Name of Subject In charge: Mrs Sharma K.S

Academic in charge: Mr Aglawe S.B

TEACHING PLAN FOR ACADEMIC YEAR 2020-21

Name of the Teacher: Mr. Gaikwad S. S.

Subject: PHARMACEUTICAL ENGINEERING (THEORY)

Class: Second Year. B. Pharm.

Academic Year: 2020-21

Sr. No.	Month	No. of Lectures available	Details of Topics to be covered
01	August	10	
		02	Size Reduction: Objectives, Mechanisms & Laws governing size reduction, factors affecting size reduction.
		02	Principles, construction, working, uses, merits and demerits of Hammer mill, ball mill, fluid energy mill, Edge runner mill & end runner mill.
		02	Size Separation: Objectives, applications & mechanism of size separation, official standards of powders, sieves, size separation
		01	Principles, construction, working, uses, merits and demerits of Sieve shaker, cyclone separator, Air separator, Bag filter & elutriation tank.
		01	Flow of fluids: Types of manometers, Reynolds number and its significance
		02	Bernoulli's theorem and its applications, Energy losses, Orifice meter, Venturimeter, Pitot tube and Rotometer.
02	September	12	
		03	Heat Transfer: Objectives, applications & Heat transfer mechanisms. Fourier's law, Heat transfer by conduction, convection & radiation. Heat interchangers & heat exchangers.
		01	Evaporation: Objectives, applications and factors influencing evaporation, differences between evaporation and other heat process.
		03	Principles, construction, working, uses, merits and demerits of Steam jacketed kettle, horizontal tube evaporator, climbing film evaporator, forced circulation evaporator, multiple effect evaporator & Economy of multiple effect evaporator.
		03	Distillation: Basic Principles and methodology of simple distillation, flash distillation, fractional distillation, distillation under reduced pressure, steam distillation & molecular distillation
		02	Drying: Objectives, applications & mechanism of drying process, measurements & applications of Equilibrium Moisture content, rate of drying curve.
03	October	12	
		02	Principles, construction, working, uses, merits and demerits of Tray dryer, drum dryer spray dryer, fluidized bed dryer, vacuum dryer, freeze dryer.
		02	Mixing: Objectives, applications & factors affecting mixing, Difference between solid and liquid mixing, mechanism of

			solid mixing, liquids mixing and semisolids mixing.
		02	Principles, Construction, Working, uses, Merits and Demerits of Double cone blender, twin shell blender, ribbon blender, Sigma blade mixer, planetary mixers, Propellers, Turbines, Paddles & Silverson Emulsifier
		02	Filtration: Objectives, applications, Theories & Factors influencing filtration, filter aids, filter medias.
		02	Principle, Construction, Working, Uses, Merits and demerits of plate & frame filter, filter leaf, rotary drum filter, Meta filter & Cartridge filter, membrane filters and Seidtz filter.
		02	Principles, construction, working, uses, merits and demerits of Perforated basket centrifuge Non-perforated basket centrifuge
04	November	08	
		01	Centrifugation: Objectives, principle & applications of Centrifugation,
		01	Principles, construction, working, uses, merits and demerits , semi continuous centrifuge & super centrifuge
		01	Introduction of Corrosion and its prevention:
		02	Factors affecting during materials selected for Pharmaceutical plant construction
		03	Theories of corrosion, types of corrosion and there prevention.
05	December	03	
		03	Ferrous and nonferrous metals, inorganic and organic non metals, basic of material handling systems.

Total number of lectures available in the Semester: - 45

Name of the department: Pharmaceutics

Mr. Gaikwad S. S.
(Subject In-charge)

Mr. Aglawe S. B.
(Academic In-charge)

TEACHING PLAN FOR ACADEMIC YEAR 2020-21

Name of the Teacher: Mr. Gaikwad S. S.

Subject: BIO-PHARMACEUTICS & PHARMACOKINETICS

Class: Final Year. B. Pharm.

Academic Year: 2020-21

Sr. No.	Month	No. of Lectures available	Details of Topics to be covered
01	August	10	
		02	Introduction to biopharmaceutics and its importance in dosage form design.
		02	Absorption: Factors affecting, mechanisms, first pass effect, pH partition hypothesis.
		02	Distribution: Physiological barriers, factors affecting, apparent volume of distribution
		02	Metabolism: Phase I & phase factors affecting. Bioactivation & Tissue Toxicity
		02	Elimination: Routes renal & non renal, factors affecting, clearance concept.
02	September	13	
		02	Compartment models: Introduction to compartmental and non-compartmental analysis.
		02	Concepts and their importance in the study of pharmacokinetics. One compartment open model.
		02	Assessment of pharmacokinetic parameters from plasma and urine data after i.v. bolus, i.v. infusion, with loading dose and oral administration.
		02	Assessment of pharmacokinetic parameters from plasma and urine data after i.v. injection with loading dose and oral administration.
		03	Percent absorbed time plot and determination of absorption and elimination rates based on one compartment model.
		02	Introduction to two compartment model.
03	October	11	
		02	Non-Linear Pharmacokinetics: Detection of non-linearity (saturation mechanism). Michaelis Menten equation.
		02	Definition of V_{max} and K_m . Determination of V_{max} and K_m . Significance of nonlinear pharmacokinetics.
		01	Biopharmaceutical classification system.
		02	Theories of dissolution
		02	Dissolution test apparatus(U.S.P/LP/B.P), in vitro in vivo correlation
		02	Mathematical models
04	November	08	
		02	Bioavailability and Bioequivalence:

			Definition and concept of absolute & relative bioavailability.
		02	Methods of assessing bioavailability.
		02	Measures of bioavailability
		02	Bioequivalence study introduction to various study designs.
05	December	03	
		01	Review of regulatory requirements for conducting bioequivalence study
		02	Bio-waivers, biosimilars.

Total number of lectures available in the Semester: - 45

Name of the department: Pharmaceutics

Mr. Gaikwad S. S.
(Subject In-charge)

Mr. Aglawe S. B.
(Academic In-charge)

LABORATORY (PRACTICAL) PLAN FOR ACADEMIC YEAR 2020-21

NAME OF THE TEACHER: Mr. Gaikwad S. S. SUBJECT: PHARMACEUTICAL ENGINEERING (PRACTICAL)
 CLASS: SECOND YEAR. B. PHARM. (SEM III) ACADEMIC YEAR: 2020-21

Sl. No.	Title of Experiment	Chemicals required	Glassware required	Equipment required	Books for reference
INTRODUCTION					
1	Description of Construction, working and application of any two Pharmaceutical Machinery such as Rotary tablet Machine, capsule filling machine, tablet coating machine, autoclave, oven and dehumidifier.	--	--	Rotary tablet Machine, capsule filling machine, tablet coating machine	1. Lachman L, Lieberman. The Theory and Practice of Industrial Pharmacy, Third Edition, Varghese Publication. 2. Remington JP. Remington: the science and practice of pharmacy. 21st ed. USA: Lippincott Williams and Wilkins; 2006. Sakarkar D. M., Sudke S. G. Laboratory Manual of Pharmaceutical Engineering. Nirali Prakashan
2	Determination of moisture content and loss on drying.	Paracetamol	Desiccator, beaker,	Hot Air oven, Weighing Balance, Thermometer	Sakarkar D. M., Sudke S. G. Laboratory Manual of Pharmaceutical Engineering. Nirali Prakashan
3	Construction of drying curves (for calcium carbonate and starch)	Calcium carbonate, Starch	Desiccator, beaker, Petri plates,	Hot Air oven, Weighing Balance, Thermometer	Sakarkar D. M., Sudke S. G. Laboratory Manual of Pharmaceutical Engineering. Nirali Prakashan
4	Determination of radiation constant of any one of - brass/ iron/unpainted and painted glass.	--	--	Brass Cylinder, Thermometer, wooden sheet, stop watch, pair of tongue, tripod stand, gas burner.	Sakarkar D. M., Sudke S. G. Laboratory Manual of Pharmaceutical Engineering. Nirali Prakashan.
5	Steam distillation- To calculate the efficiency of steam distillation.	o-Nitro phenol, p-Nitro phenol.	Conical bottom flask, RBF,	Thermometer	Sakarkar D. M., Sudke S. G. Laboratory Manual of Pharmaceutical Engineering. Nirali Prakashan.

				Erlenmeyer flask, graduated cylinder, receiver distilling still, condenser. Capillary tube			Pharmaceutical Engineering. Nirali Prakashan.
6	To determine the overall heat transfer coefficient by heat exchanger.	--		Distillation flask, condenser, bend tubes,		Thermometer	Sakarkar D. M., Sudke S. G. Laboratory Manual of Pharmaceutical Engineering. Nirali Prakashan.
7	Determination of humidity of air - i) From wet and dry bulb temperatures - use of ii) Dew point method	i) Distilled water ii) Distilled water 7 Ice		i) Test tube ii) copper vessel		i) Assmanns psychrometer, barometer ii) Thermometer & Humidity chart	Sakarkar D. M., Sudke S. G. Laboratory Manual of Pharmaceutical Engineering. Nirali Prakashan.
8	To evaluate size distribution of tablet granulations - Construction of various size frequency curves including arithmetic and logarithmic probability plots.	Calcium carbonate/sodium chloride/sodium bicarbonate, citric acid		--		Sieves of various numbers like (#10,20,44,60,80,100, and 120), Sieve shaker, weighing balance, weight box.	Sakarkar D. M., Sudke S. G. Laboratory Manual of Pharmaceutical Engineering. Nirali Prakashan.
9	To verify the laws of size reduction using ball mill and determining Kicks, Rittinger's, Bond's coefficients, power requirement and critical speed of Ball Mill.	Calcium carbonate granules		--		Ball mill, Metal ball, sieve set (# 10, 22,44,60,80,100, and 120), Sieve shaker, weighing balance, weight box.	Sakarkar D. M., Sudke S. G. Laboratory Manual of Pharmaceutical Engineering. Nirali Prakashan.
10	Demonstration of any two equipments such as colloid mill, planetary mixer, fluidized bed dryer, Spray dryer, Laminar Air	--		--		Planetary mixer, Spray dryer	I. Lachman L. Lieberman, The Theory and Practice of Industrial Pharmacy, Third Edition, Varghese Publication.

	Flow, Ball Mill and such other major equipments				2. Remington JP. Remington: the science and practice of pharmacy. 21st ed. USA: Lippincott Williams and Wilkins; 2006.
11	Factors affecting Rate of Filtration and Evaporation (Surface area, Concentration and Thickness/viscosity).	i) Kaolin, Glycerin, Distilled water ii) Glycerin, Sodium chloride	i) Erlenmeyer flask, Buckner funnel, beaker, measuring cylinder ii) Beaker, Scale	i) Suction pump, stand, stop watch, weighing balance, weight box ii) Water bath, thermometer, weighing balance, Bunsen burner, tripod stand, weight box	Sakarkar D. M., Sudke S. G. Laboratory Manual of Pharmaceutical Engineering. Nirali Prakashan.
12	To study the effect of time on the Rate of Crystallization	Urea, sodium hydroxide, boric acid	Beaker, glass rod, funnel	Bunsen burner, tripod stand, weight box	Sakarkar D. M., Sudke S. G. Laboratory Manual of Pharmaceutical Engineering. Nirali Prakashan.
13	To calculate the uniformity Index for given sample by using Double Cone Blender.	Powder samples	--	Double cone blender, Scup	Sharma H., Mittal S., Jain D. Process Optimization for Double-Cone Blender and Application of Statistics. International Journal of Pharmaceutical Research, 2011, Volume 3, Issue 4, 18-23.

Total number of practical turns available in the year: - 13

Name of the department: Pharmaceutics

Mr. Gaikwad S. S.

(Subject In-charge)

Mr. Aglawe S. B.

(Academic In-charge)

TEACHING PLAN

Subject: Medicinal Chemistry II
Dept: Pharm.Chemistry

Class : T.Y. B.Pharm (PCI Pattern 2018 SemVI)
Year: 2020-21

SR. NO	NAME OF TOPIC	Prescribed hr.	Required hr.	PLANNING DATES	DATE		TEACHING AIDS	REFERENCES
					STARTING OF TOPIC	COMPLETION OF TOPIC		
1.	Unit I	10	10	4,5,6,11,12,13,18,19,20,21 Aug 2020	4 Aug 2020	21 Aug 2020	Black board	1. Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry, Lippincott Co. Philadelphia. 2. Foye's Principles of Medicinal Chemistry by Lemke, 6th edition, Lippincott William Wilkins.
1.1	Antihistaminic agents							
1.2	H1-antagonists: H2-antagonists:							
1.3	Gastric Proton pump inhibitors							
1.4	Anti-neoplastic agents							
2	Unit II	10	10	25,26,27Aug 1,2,3,8,9,10,15 sep	25 Aug 2020	15 sep 2020	Black board	1. Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry, Lippincott Co. Philadelphia 2. Principles of Medicinal Chemistry by Kadam SS, Mahadik KR, Bothara KG, Vol. I & II, 10th Edition, Nirali Prakashan.
2.1	Anti-anginal							
2.2	Diuretics							
2.3	Anti-hypertensive Agents							

3.	Unit III	10	10	16,17,22,23, 24,29,30sep 1,6,7 oct 2020	16 Aug 2020	7 oct 2020	Black board	1. Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry, 2. Foye's Principles of Medicinal Chemistry 6 th edition, Lippincott William Wilkins. 3. The Organic Chemistry of Drug Synthesis, Vol. 1,2,3,4 by Lednicer Daniel, 1st edition, John Wiley & Sons INC.
3.1	Anti-arrhythmic Drugs							
3.2	Anti- hyperlipidemic agents							
3.3	Coagulant & Anticoagulants							
3.4	Drugs used in Congestive Heart Failure:							
4.	Unit IV	08	08	8,9,13,14, 15,20,21,22 oct 2020	8 sep 2020	22 oct 2020	Black board	1.Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry,
4.1	Drugs acting on Endocrine system							
4.2	Sex hormones							
3.3	Drugs for erectile dysfunction							
3.4	Oral contraceptives:							
3.5	Thyroid and antithyroid drugs							
4.	Unit V	07	07	27,28,30,oct 3,4,5,6 Nov	27 oct 2020	6 Nov. 2020	Black board	1.Wilson and Gisvold's Textbook of
	Antidiabetic							

4.1	agents			2020				
4.2	Local Anesthetics							Organic Medicinal and Pharmaceutical Chemistry,

No. of lectures available in semester : 45

Name of Subject In charge: ~~Ms. Waghmare S.A.~~ ^{Ms. Waghmare S.A.}

Academic In charge: Mr. Aglawe Sachin

TEACHING PLAN

Subject: Medicinal Chemistry III
Dept: Pharm.Chemistry

Class : Final Y. B.Pharm (pattern 2015 SemVII)
Year: 2020-21

SR. NO	NAME OF TOPIC	Prescribed hr.	Required hr.	PLANNING DATES	DATE		TEACHING AIDS	REFERENCES
					STARTING OF TOPIC	COMPLETION OF TOPIC		
1.	Unit I <u>Antibiotics</u> Beta Lactam antibiotics Aminoglycosides Tetracyclines Lincomycine Polypeptides	15	15	4,5,10,11,12,17,18,19,24, 25 26,31 Aug 1,2,7, sep	4 Aug 2020	7 sep 2020	Blackboard	1. Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry, Lippincott Co. Philadelphia. 2. Foye's Principles of Medicinal Chemistry by Lemke, 6 th edition, Lippincott William Wilkins.
2	Unit II <u>Antineoplastic agents</u> including recent drugs and monoclonal antibodies	08	08	8,9,14,15,16,21,22,23, sep	8 sep 2020	23 sep 2020	Blackboard	1. Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry, Lippincott Co. Philadelphia 2.Principles of Medicinal Chemistry by Kadam SS, Mahadik KR, Bothara KG, Vol. I & II, 10th Edition, Nirali Prakashan.
3.	Unit III <u>Anti-infective</u>	22	22	28,29,30 sep 2020	28 sep	23 nov	Blackboard	1. Wilson and Gisvold's

1	agents			5,6,7,12,	2020	2020		Textbook of Organic Medicinal and Pharmaceutical Chemistry,
3.2	Synthetic antibacterial agents			15,16,21,22, 23,20,21,26, 27,28 oct 2020				
3.3	Anti-tubercular Agents & Antileprotic agents			2,3,9,10,11, 23,Nov,2020				2. Foye's Principles of Medicinal Chemistry 6th edition, Lippincott William Wilkins,
3.4	Antifungal agents . Antimalarials Antiamebic agent							3. The Organic Chemistry of Drug Synthesis, Vol. 1,2,3,4 by Lednicer Daniel, 1st edition, John Wiley & Sons INC.
3.5	Anthelmintics Antiviral agents							

No. of lectures available in semester : 45

Name of Subject In charge: Ms.  Wajumare S.A.

Academic In charge: Mr. Aglawe Sachin .



Jagdamba Education Society's
SND COLLEGE OF PHARMACY
 Babhulgaon, Tal- Yeola, Dist-Nasik.
 Pharmacology-III
 Final year B Pharm Sem VII 2020-2021

TEACHING PLAN FORMAT

SR. NO	NAME OF TOPIC	PRESCRIBED Hr.	REQUIRED Hr.	PLANNING DATES	DATE		TEACHING aids	REFERENCES
					STARTING OF TOPIC	COMPLETION OF TOPIC		
1	General principles of chemotherapy of infections and mechanism of drug resistance.	01	01	1 AUGUST 2020	1 AUGUST 2020	1 AUGUST 2020	BLACK BOARD, LCD PROJECTOR	1. Barar FSK: Essentials of Pharmacotherapeutic. 2. Tripathi KD
2	Classification, mechanism of action, antibacterial spectrum, resistance, therapeutic uses, adverse effects and contraindications of: a. Penicillins, cephalosporins and β -lactamase Inhibitors b. Sulfonamides and urinary antiseptics c. Amino	23	25	6,7, 8, 13,14,15,20,21, 22,27,28,29 AUG 2020 3,4,5,10,11,12, 17,18,19,24,25, 26 SEPT 2020 1 OCT 2020	06 AUGUST 2020	1 OCT 2020	BLACK BOARD, LCD PROJECTOR	1 Barar FSK: Essentials of Pharmacotherapeutics 2. Tripathi KD: Essentials of Medical Pharmacology 3. Satoskar RS and Bhandarkar SD: Pharmacology & Pharmacotherapeutics,

	glycosides and macrolides d. Quinolones and fluoroquinolones e. Tetracycline and chloramphenicol f. Tuberculosis and leprosy including National TB programmes (DOTS) g. Antimalarials, anthelmintics and antiamebics h. Antiviral (Including anti-HIV drugs) and antifungals i. Antineoplastic drugs							
3	Endocrine Pharmacology	05	05	2,3,8,9,10 OCT 2020	2 OCT 2020	10 OCT 2020	BLACK BOARD, LCD PROJECTOR	1. Barar FSK: Essentials of Pharmacotherapy. 2. Tripathi KD
4	Adrenocorticosteroids and corticosteroid antagonists	04	04	15,16,17,22 OCT 2020	15 OCT 2020	22 OCT 2020	BLACK BOARD, LCD PROJECTOR	1. Barar FSK: Essentials of Pharmacotherapy. 2. Tripathi KD
5	Thyroid and antithyroid	04	04	23,24,29,30 OCT 2020	23 OCT 2020	30 OCT 2020	BLACK BOARD, LCD PROJECTOR	1. Barar FSK:

	drugs							Essentials of Pharmacotherapeutic. 2. Tripathi KD
6	Insulin, Oral hypoglycemic agents, Glucagon	05	05	31 OCT 2020 5,6,7,12 NOV 2020	31 OCT 2020	12 NOV 2020	BLACK BOARD, LCD PROJECTOR	1.Barar FSK: Essentials of Pharmacotherapeutic. 2. Tripathi KD
7	Androgens, Estrogens, Progestin and oral contraceptives	03	03	13,14,19 NOV 2020	13 NOV 2020	19 NOV 2020	BLACK BOARD, LCD PROJECTOR	1.Barar FSK: Essentials of Pharmacotherapeutic. 2. Tripathi KD

Name of Subject In charge: MS. Bhingare A. V. 

Academic In charge: Mr Aglawe S. B. 



Jagdamba Education Society's
SND COLLEGE OF PHARMACY
Babhulgaon, Tal- Yeola, Dist-Nasik.
Pharmacology-III
Final year B Pharm Sem VII 2020-21

TEACHING PLAN FORMAT (Practical)

Sr. No.	Title of Experiment	Required hours	planning date			s i g n
			Batch-A	Batch-B	Batch- C	
1.	To find out the concentration of given drugs using three point bioassay method on suitable isolated tissue preparations	3 hrs.	6 AUGUST 2020	7 AUGUST 2020	8 AUGUST 2020	
2.	To find out the concentration of given drugs using three point bioassay method on suitable isolated tissue preparations	3 hrs.	13 AUGUST 2020	14 AUGUST 2020	15 AUGUST 2020	
3.	To find out the concentration of given drugs using four point bioassay method on suitable isolated tissue preparations	3 hrs.	20 AUGUST 2020	21 AUGUST 2020	22 AUGUST 2020	

	To find out the concentration of given drugs using four point bioassay method on suitable isolated tissue preparations	3 hrs.	27 AUGUST 2020	28 AUGUST 2020	29 AUGUST 2020	
5.	To study the Critical appraisal of marketed fixed dose combinations	3 hrs.	3 SEPT 2020	4 SEPT 2020	5 SEPT 2020	
6.	To study the Critical appraisal of marketed fixed dose combinations	3 hrs.	10 SEPT 2020	11 SEPT 2020	12 SEPT 2020	
7.	To study the Critical appraisal of marketed fixed dose combinations	3 hrs.	17 SEPT 2020	18 SEPT 2020	19 SEPT 2020	
8.	To study the Critical appraisal of marketed fixed dose combinations	3 hrs.	24 SEPT 2020	25 SEPT 2020	26 SEPT 2020	
9.	To study the Critical appraisal of marketed fixed dose combinations	3 hrs.	1 October 2020	2 October 2020	3 October 2020	
10.	To study the Critical appraisal of marketed fixed dose combinations	3 hrs.	8 October 2020	9 October 2020	10 October 2020	
11.	To study the Prescription auditing and standard treatment protocols	3 hrs.	15 October 2020	16 October 2020	17 October 2020	
12.	To study the Prescription auditing and standard treatment protocols	3 hrs.	22 October 2020	23 October 2020	24 October 2020	
13.	To study the Prescription auditing and standard treatment protocols	3 hrs.	29 October 2020	30 October 2020	31 October 2020	

14.	To study the Prescription auditing and standard treatment protocols	3 hrs.	5 November 2020	6 November 2020	7 November 2020
15.	To study the Prescription auditing and standard treatment protocols	3 hrs.	12 November 2020	13 November 2020	14 November 2020
16.	To study the Prescription auditing and standard treatment protocols	3 hrs.	19 November 2020	20 November 2020	21 November 2020
17.	To study the Prescription auditing and standard treatment protocols	3 hrs.	26 November 2020	27 November 2020	28 November 2020

Name of Subject In charge: MS. BHINGARE A. V.

Academic In charge: Mr AGLAWE S. B.




Jagdamba Education Society's
SND COLLEGE OF PHARMACY
 Babhulgaon, Tal- Yeola, Dist-Nasik.
 Pharmacology -II
 Third year B Pharm Sem V 2020-21

TEACHING PLAN FORMAT

S R. N O	NAME OF TOPIC	PR ES CR IBE D Hr.	RE QU IRE D Hr.	PLANNIN G D A T E S	DATE		TEACHIN G a i d s	REFER E N C E S
					STAR T I N G	COM P L E T I O N		
1	Pharmacology of drugs acting on cardiovascular system	10	10	2,3,4,10,11,12,17,18,19,24 AUGUST 2020	2 AUG UST 2020	24 AUG UST 2020	BLACK BOARD, LCD PROJECT OR	1.Barar FSK: Essentials of Pharmacot herapeutic. 2. Tripathi KD
2	Pharmacology of drugs acting on cardiovascular system 2. Pharmacology of drugs acting on	10	10	25,26,31 AUGUST 2020 1,2,7,8,9,14, 15 SEPT 2020	25 AUG UST 2020	15 SEPT 2020	BLACK BOARD, LCD PROJECT OR	1.Barar FSK: Essentials of Pharmacot herapeutic. 2. Tripathi KD

	urinary system							
4	Autocoids and related drugs	10	10	16,21,22,23, 28,29,30 SEPT 2020 5,6,7 OCT 2020	16 SEPT 2020	7 OCT 2020	BLACK BOARD, LCD PROJECT OR	1.Barar FSK: Essentials of Pharmacot herapeutic. 2. Tripathi KD
5	Pharmacology of drugs acting on endocrine system	8	8	7, 12,13,14,19 20,21,26 OCT 2020	7 OCT 2020	26 OCT 2020	BLACK BOARD, LCD PROJECT OR	1.Barar FSK: Essentials of Pharmacot herapeutic. 2. Tripathi KD
6	1. Pharmacology of drugs acting on endocrine system 2. Bioassay	7	7	27,28 OCT 2020 2,3,4,9,10 NOV 2020	27 OCT 2020	10 NOV 2020	BLACK BOARD, LCD PROJECT OR	1.Barar FSK: Essentials of Pharmacot herapeutic. 2. Tripathi KD

Name of Subject In charge: Mrs.Bhingare Amruta Valmik 

Academic In charge: Mr Aglawe S.B 


Jagdamba Education Society's
SND COLLEGE OF PHARMACY
Babhulgaon, Tal- Yeola, Dist-Nasik.

Pharmacology-II
Third year B Pharm Sem V 2020-2021

SR.NO	NAME OF TOPIC	PRESCRIBED Hr.	REQUIRED Hr.	PLANNING DATES
1	Introduction to <i>in-vitro</i> pharmacology and physiological salt solutions.	3	9	AUGUST 2020
2	Effect of drugs on isolated frog heart.	3	9	AUGUST 2020
3	Effect of drugs on blood pressure and heart rate of dog	3	9	AUGUST 2020
4	Study of diuretic activity of drugs using rats/mice	3	9	AUGUST 2020
5	DRC of acetylcholine using frog rectus abdominis muscle.	3	9	SEPTEMBER 2020
6	Effect of physostigmine and atropine on DRC of acetylcholine using frog rectus abdominis muscle and rat ileum respectively.	3	9	SEPTEMBER 2020
7	Bioassay of histamine using guinea pig ileum by matching method.	3	9	SEPTEMBER 2020
8	Bioassay of oxytocin using rat uterine horn by interpolation method	3	9	SEPTEMBER 2020
9	Bioassay of serotonin using rat fundus strip by three point bioassay.	3	9	OCT 2020
10	Bioassay of acetylcholine using rat ileum/colon by four	3	9	OCT 2020

	point bioassay			
11	Determination of PA ₂ value of prazosin using rat anococcygeus muscle (by Schilds plot method).	3	9	OCT 2020
12	Determination of PD ₂ value using guinea pig ileum	3	9	OCT 2020
13	Effect of spasmogens and spasmolytics using rabbit jejunum.	3	9	NOV 2020
14	Anti-inflammatory activity of drugs using carrageenan induced paw-edema model.	3	9	NOV 2020
15	Analgesic activity of drug using central and peripheral methods	3	9	NOV 2020

Total number of practical turns available in the year: - 15

Name and signature: Mrs. Bhingare Amruta Valmik 

Academic In charge: Mr. Aglawe S.B 

LABORATORY (PRACTICAL) PLAN FOR ACADEMIC YEAR 2020-2021

NAME OF THE TEACHER: Mr. AGLAWE S.B.

SUBJECT: PHARMACEUTICAL MICROBIOLOGY

CLASS: SECOND YEAR. B. PHARM. (SEM III)

ACADEMIC YEAR: 2020-21

INTRODUCTION					
Sr. No.	Title of Experiment	Chemicals required	Glassware required	Equipment required	Books for reference
1	Introduction and study of different equipments and processing, e.g., B.O.D. incubator, laminar flow or aseptic hood, autoclave, hot air sterilizer, deep freezer, refrigerator, microscopes used in experimental microbiology	--	--	B.O.D. incubator, laminar flow ,aseptic hood, autoclave, hot air sterilizer, deep freezer, refrigerator, microscopes	Kokare C. R., Hugo W. B. and Russell A. D., Indian Pharmacopoeia
2	Sterilization of glassware, preparation and	Agar, peptone, yeast extract, meat extract,	Test tubes, beaker, cotton, Petri plates	--	Kokare C. R., Hugo W. B. and Russell A. D., Indian Pharmacopoeia

	sterilization of media.	sodium chloride, D/W, Disinfectants			
3	Sub culturing of bacteria and fungus. Nutrient stabs and slants preparations	Agar, peptone, yeast extract, meat extract, sodium chloride, D/W, Disinfectants	Test tubes, beaker, cotton, Petri plates		Kokare C. R., Hugo W. B. and Russell A. D., Indian Pharmacopoeia
4	Isolation of pure culture by streak plate technique.	Agar, peptone, yeast extract, meat extract, sodium chloride, D/W, Disinfectants	Test tubes, beaker, cotton, Petri plates		Kokare C. R., Hugo W. B. and Russell A. D., Indian Pharmacopoeia
5	Isolation of pure culture by pour plate technique.	Agar, peptone, yeast extract, meat extract, sodium chloride, D/W, Disinfectants	Test tubes, beaker, cotton, Petri plates		Kokare C. R., Hugo W. B. and Russell A. D., Indian Pharmacopoeia
6	Isolation of pure culture by spread plate technique.	Agar, peptone, yeast extract, meat extract, sodium chloride, D/W, Disinfectants	Test tubes, beaker, cotton, Petri plates		Kokare C. R., Hugo W. B. and Russell A. D., Indian Pharmacopoeia
7	Observation of motility of bacteria by hanging drop	Agar, peptone, yeast extract, meat extract,	Test tubes, beaker, cotton, Petri plates	Microscope	Kokare C. R., Hugo W. B. and Russell A. D., Indian Pharmacopoeia

	technique	sodium chloride, D/W, Disinfectants	Test tubes, beaker, cotton, Petri plates	Microscope	Kokare C. R., Hugo W. B. and Russell A. D., Indian Pharmacopoeia
8	Identification of isolated bacteria by simple Staining	Agar, peptone, yeast extract, meat extract, sodium chloride, D/W, Disinfectants	Test tubes, beaker, cotton, Petri plates	Microscope	Kokare C. R., Hugo W. B. and Russell A. D., Indian Pharmacopoeia
9	Identification of isolated bacteria by acid fast Staining	Agar, peptone, yeast extract, meat extract, sodium chloride, D/W, Disinfectants	Test tubes, beaker, cotton, Petri plates	Microscope	Kokare C. R., Hugo W. B. and Russell A. D., Indian Pharmacopoeia
10	Identification of isolated bacteria by Gram Staining	Agar, peptone, yeast extract, meat extract, sodium chloride, D/W, Disinfectants	Test tubes, beaker, cotton, Petri plates	Microscope	Kokare C. R., Hugo W. B. and Russell A. D., Indian Pharmacopoeia
11	Sterility testing of different pharmaceutical products. a. Injections	Agar, peptone, yeast extract, meat extract, sodium chloride, D/W, Disinfectants	Test tubes, beaker, cotton, Petri plates		Kokare C. R., Hugo W. B. and Russell A. D., Indian Pharmacopoeia
12	Microbiological assay of	Agar, peptone, yeast	Test tubes, beaker,	-	Kokare C. R., Hugo W. B. and

	antibiotics by cup plate method and other methods	extract, meat extract, sodium chloride, D/W, Disinfectants	cotton, Petri plates	Russell A. D., Indian Pharmacopocia
13	Biochemical test of any one microorganism	Agar, peptone, yeast extract, meat extract, sodium chloride, D/W, Disinfectants	Test tubes, beaker, cotton, Petri plates	Kokare C. R., Hugo W. B. and Russell A. D., Indian Pharmacopocia

Total number of practical turns available in the year: - 13

Name and signature: Mr. Aglawe S.B.

Name of the department: Pharmaceutics


Mr. Aglawe S.B.
Academic Incharge

LABORATORY (PRACTICAL) PLAN FOR ACADEMIC YEAR 2020-21

Name of the Teacher: Mr. Aglawe S.B.

Subject: STERILE PRODUCTS

Class: Final Year. B. Pharm.

Academic Year: 2020-21

Sr. No.	Title of Experiment	Chemicals required	Glassware required	Books for reference
1	Validation of aseptic area.	--		1) Atmaram Pawar and R S Gaud, Modern Dispensing Pharmacy, 3 rd edition reprint, 2010, Career Publications
2	Pharmacopoeial evaluation of glass and plastic containers and rubber closures used for injectable.	Chloroform, water.		2) Indian Pharmacopoeia, 1996, Volumes I, II & Published by The Indian Pharmacopoeia Commission, Ghaziabad,
3	Formulation and quality control of SVPs-WFI	Aniseoil, water, talc	Beaker, Measuring cylinder, mortar	
4	Formulation and quality control of SVPs- Calcium gluconate injection.	Dill oil, water	paste, funnel ,density bottle	
5	Formulation and quality control of SVPs-Ascorbic acids.	Tincture cardamom, Tincture Cinamom, citric acid, sodium citrate, syrup		
6	Formulation and quality control of LVPs-Sodium Chloride I v infusion	Magnesium Citrate		
7	Formulation and quality control of LVPs- Dextrose I V infusion.	Iodine, potassium iodide, alcohol		
8	Accelerated stability testing of a SVP or LVP marketed samples	Iodine, potassium iodide, alcohol, water		

9	Formulation, packaging and quality control of Eye drop and Eye ointment	Boric acid chlorinated lime, sodium carbonate,	Ministry of Health & Family Welfare 3. Cooper and Gunn :Dispensing for Pharmaceutical Students, 12th Ed, CBS Publication 4. Leon Lachman and Lieberman; The theory and practice of pharmacy, 3rd Ed, CBS Publication, 1986
10	Formulation, packaging and quality control of Eye ointment.	Glycerine, Borax	
11	Evaluation of marketed lyophilized products as reconstitutable solution or suspension for injection, Parenteral suspensions or emulsions.	Glycerine, Tannic acid	
12	Formulation and quality control of LVPs-Dextrose & Sodium Chloride I v infusion	Dextrose & Sodium Chloride	

Total number of practical turns available in the year: -12

Name and signature: Mr. AGLAWE S.B.
Name of the department: PHARMACEUTICS

Mr. AGLAWE S.B.
Academic Incharge

TEACHING PLAN FOR ACADEMIC YEAR 2020-21

Name of the Teacher: Mr. S.B. Aglawe

Subject: STERILE PRODUCTS

Class: Final Year, B. Pharm.

Academic Year: 2020-21

Sr. No.	Month	No. of Lectures available	Details of Topics to be covered
01	August	12	
		05	Sterile formulations
		02	Pre-formulation: Physicochemical properties of drug Substances.
		01	General requirements
		02	routes of administration, significance of tonicity adjustment and sterility.
		05	Packaging of Parenterals
		01	Various materials used, factors influencing choice of containers,
		02	packaging components and types, official quality control tests and methods of evaluation,
		02	prefilled syringes, blow-fill-seal technique
		05	GMP-Design of Parenteral Production Facility
		02	Product characteristics, personnel, batch Vs continuous operation,
	September	12	
		02	development of facility layout, environmental control zones, filling area design, heating ventilation air conditioning (HVAC)
		01	HEPA filter testing and rating, laminar area flow systems.
		08	Small Volume Parenterals
		01	Classification, formulation of solutions, types of vehicles,
		02	selection of vehicles and added substance, processing and manufacturing of SVPs,
		01	Pilot plant scale up for SVPs.
		02	Special types of SVPs: Formulation of peptides and proteins, freeze dried products.
		01	Parenterals suspensions, emulsions and Reconstituted products.
		01	Quality control for SVP and stability aspects
		05	Large Volume Parenterals
		01	Types of LVPs, concept of formulation, influence of physiological factors, stabilization of LVPs,
	October	12	
		03	processing and manufacturing of LVPs, Parenteral Nutrition, intravenous admixture and Peritoneal dialysis fluid. Pilot plant scale up for LVPs.

		01	Quality control for LVP and stability aspects
		04	Lyophilization basics
		02	Introduction, Principle, steps involved and Application of Freeze drying process.
		02	Component, Parameters, Construction and Working of Lyophilizer/ Freeze dryer
		05	Ophthalmic Products
		02	General requirements, formulation, types of dosage forms, evaluation of ophthalmic product
		02	
	November	06	
		01	Contact lens and lens care products
		05	Blood Products
		02	Collection and storage of whole human blood, fractionation of plasma.
		02	Quality control of blood products.
		01	Plasma Volume Expanders
	December	12	
		03	Surgical Products
		01	Definition Sutures and Ligatures of different types, Primary wound dressing,
		01	absorbents, surgical cotton, surgical gauzes bandages,
		01	Advances (Superporous hydrogels) absorbent foam (polyurethane) dressings, Qualitycontrol testing.

Total number of lectures available in the year: - 45

Name and signature: Mr. S.B. Aglawe 

Name of the department: PHARMACEUTICS


Mr. S.B. Aglawe

Academic In charge

TEACHING PLAN FOR ACADEMIC YEAR 2020-21

Name of the Teacher: Mr. S.B. Aglawe

Subject: PHYSICAL PHARMACEUTICS-I

Class: Second Year. B. Pharm.

Academic Year: 2020-21

Sr. No.	Month	No. of Lectures available	Details of Topics to be covered
01	August	12	
		12	Solubility of drugs
		02	Solubility expressions
		02	mechanisms of solute solvent interactions, ideal solubility parameters
		02	solvation & association, quantitative approach to the factors influencing solubility of drugs, diffusion principles in biological systems
		02	Solubility of gas in liquids, solubility of liquids in liquids, Solubility of Solids in liquids
		03	Raoult's law, real solutions. Partially miscible liquids(Phase equilibria, Phase rule, One , two and three component systems, ternary phase diagram, Critical solution temperature and applications
		01	Distribution law, its limitations and applications
	September	12	
		10	States of Matter and properties of matter
		01	State of matter
		01	changes in the state of matter, latent heats, vapour pressure, sublimation critical point
		01	eutectic mixtures, gases, Liquefaction of gases,
		01	aerosols- inhalers, relative humidity, liquid complexes
		02	liquid crystals, glassy states, solid crystalline, amorphous(Methods of crystal analysis: X-Ray Diffraction, Bragg's equation.)
		01	polymorphism (Definition, Different shapes of polymorphs, Example and its Pharmaceutical applications, Brief introduction of Detection techniques)
		03	Refractive index, optical rotation, dielectric constant, dipole moment, dissociation constant, determinations and applications
		08	Surface and interfacial phenomenon
		01	Liquid interface, surface & interfacial tensions
		01	surface free energy
	October	12	
		02	measurement of surface & interfacial tensions
		01	spreading coefficient, adsorption at liquid interfaces
		01	surface active agents

		01	H.L.B Scale, solubilisation, detergency
		01	adsorption at solid interface.
		08	Complexation and protein binding
		02	Introduction, Classification of Complexation, Applications
		02	methods of analysis, protein binding
		02	Complexation and drug action
	November	06	
		02	crystalline structures of complexes and thermodynamic treatment of stability constants
		07	pH, buffers and Isotonic solutions
		01	pH scale, pH determination (electrometric and calorimetric)
		01	applications of buffers
		02	buffer equation, buffer capacity
	December	12	
		02	buffers in pharmaceutical and biological systems
		01	buffered isotonic solutions

Total number of lectures available in the year: - 45

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