JSS Academy of Higher Education and Research

JSS College of Pharmacy

Sri Shivarathreeshwara Nagara, Mysuru-570015

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An ISO 9001:2015 Certified Institution

(DEEMED TO BE UNIVERSITY) JSS ACADEMY OF HIGHER EDUCATION & RESEARCH MYSURU

B. Pharm – V Semester
Course Handout
2020-21

Accredited 'A+' Grade by NAAC	**1st in Karnataka & 3rd in INDIA to be rated with 4 stars**	**Ranked 1st among the YOUNG UNIVERSITIES in Karnataka**	**JSS College of Pharmacy, Mysuru – 10th Rank in INDIA 2020**	INTERNATIONAL CERTIFICATION Pharm D Program is Certified by Accreditation Council for Pharmacy Education (ACPE), USA

ARIIA ATAL RANKING OF INSTITUTIONS ON INNOVATION ACHIEVEMENTS

Ranked 4th in India for 2019

Academic Calendar 2020-21
(B. Pharm - V Semester)

Teacher's Incharge

Class	Class Teacher	Batch No.	Batch Teacher
III B.Pharm (V Semester)	Dr. Anand Kumar Tengli	I	Dr. Anand Kumar Tengli
		II	Mr. Vageesh R
		III	Dr. N. Paramakrishnan
		IV	Dr. M.P. Venkatesh

ACTIVITIES AND COORDINATORS 2020-21

Curricular & Co curricular activities

Sl. No	Activities	Coordinator/s
1.	Induction, learning skills and personality development programs for fresher's	DHP/MPG
2.	Selection of class representative in first week of commencement of each course	
3.	Anti ragging cell	HP/ BM
4.	Grievance and redressal cell	PKK
5.	Industrial Visits, Training and placements	TS/ABP
6.	Guest lectures & Seminars/ conferences/ training / workshop • organized at college • delivered/attended by staff	Respective department all HODs
7.	Internal Assessment Committee Chairperson Members	 GVP RSS/SNM/DAT/BMV
8.	• Academic Council Board • Identification of Advanced/ Medium/ Slow learners	Class Teachers Subject Teachers
9.	Ethics committee Meeting • Animal • Human	 KLK MR
10.	Time table	DHP TS/ URR/ VR/AMM/HYK

11.	Internal Quality Assurance Cell Chairperson Members	 PKK/ AMM/AKT/HVG/SP
12.	Women's cell (Prevention of Sexual Harassment Cell)	SNM
13.	Scholarship Bureau	RSC
14.	Compilation of publications (Research papers/books/chapters)	BMG
15.	Research Coordination Committee -Compilation of Ph.D details and funded projects - Plagiarism - Review of publications	Chairperson – DVG Members – BRP/SB/JS
16.	Pharmacy Education Unit (CCLPE)	PKK/KU/RSS
17.	Annual result analysis List of merit students	UG – Subject Teacher, Class teacher & Program committee PG – Course Coordinator & Abhishek (Office)
18.	GPAT and other competitive exams (TOEFL, GRE etc.)	BM/ CSH/MPG
19.	Library orientation	Librarian
20.	Soft Skills Training	ABP

Extracurricular activities

Sl. No.	Activities	Coordinator/s
21.	• Selection of Class Representatives, Pharmaceutical society members • Annual planning and execution of Student centered and professional activities including inauguration of IPS	MSS/ SRD
22.	JASPHARM	BS/ SM / CSH
23.	STUMAG	HYK
24.	Sports coordinators	MPV/HKS
25.	NSS coordinators	MPG / UM/ SND
26.	Cultural & Literary coordinators	KNS/CI

Other Institutional activities

Sl. No.	Activities	Coordinator/s
27.	Annual Day celebration / Graduation day	DAT/SM
28.	Course handouts/ Teachers diary/ Student handbook/Faculty handbook	HYK/PS
29.	National Pharmacy Week (NPW) & Pharmacists	VJ/ UM + IPA team

	Day	
30.	Alumni association	HVG/ AKT/SM/BS
31.	Herbal and College Garden	JS/ NPK/VR
32.	ISO	DHP/SNM
33.	Press and publicity	KLK /BMV/OFFICE
34.	Foreign students cell	MPV
35.	Governing council meeting	JUS/ Office
36.	Monthly/Annual report of college activities to JSS AHER and other agencies	HoDs/JUS/ST/AKT/AM/KU/NPK Asha (office)
37.	College website	HKS/KU
38.	Research & Consultancy Co-ordinator • Collaboration with Industries/organizations • Interdepartment/Interdisciplinary research	DVG/ SB/ KM
39.	Coordinator - JSSUonline.com	ABP/TS
40.	JSSU Newsletter	KLK SRD/ KNS
41.	Annual group photo session	MSS/ SRD
42.	Lab coat and Blazers	JS / Ningaraju
43.	Notice Board (SNB, LNB and IIPC), Departmental staff list	Nagaraju
44.	Stock verification	Office staff /Librarian
45.	Student Liaison	Divya S
46.	Student ID Cards /Attendance entry	Shivanna / Manjunath
47.	Retreat for Pharmacy Students	AKT/ HKS/BRJ
48.	Feedback	VJ
49.	Institute Innovation Cell	HVG/PKK
50.	Practice School	MPG/VJ

Program Committee

Sl. No.	Program committees	Chairperson	Member Secretary
51.	D.Pharm	PKK	BMV
52.	B.Pharm	PKK	DAT
53.	Pharm.D	MR	RSS
54.	M.Pharm	PKK	SNM
55.	B.Pharm – Practice	MR	BRJ
56.	PG Diploma	PKK	JS

M.Pharm Program Coordinators

Sl.	M.Pharm Program	Coordinator

No.		
57.	Pharmaceutics	VJ
58.	Industrial Pharmacy	ABP
59.	Pharmaceutical Regualatory Affairs	MPV
60.	Pharmaceutical Quality Assurance	HVG
61.	Pharmaceutical Chemistry	BRP
62.	Pharmaceutical Analysis	BMG
63.	Pharmacology	KLK
64.	Pharmacognosy	NPK
65.	Pharmacy Practice	SP

PG Diploma Program Coordinators

Sl. No.	PG Diploma Program	Coordinator
66.	Pharmacovigilance	CSH
67.	Medicine & Poison Information	RSS
68.	Clinical Research	JUS
69.	Nanotechnology	VJ
70.	Pharmaceutical Quality Assurance	HVG
71.	Pharmaceutical Regulatory Affairs	MPV
72.	Medical Devices	BMV
73.	Intellectual Property Rights	BMV
74.	Computer Aided Drug Design	DAT
75.	Food and Drug Analysis	RSC
76.	Regulatory Toxicology	SB
77.	Phytopharmaceutical and Industrial Applications	JS

Certificate Course Coordinators

Sl. No.	Certificate Course	Coordinator
78.	Pharmaceutical Quality Assurance	HVG
79.	Herbal Drug Standardization	JS
80.	Medicine Information	RSS

TEACHING STAFF LIST

Sl. No	NAME	QUALIFICATION	DESIGNATION	Department
1	Dr. T.M. Pramod Kumar (TMP)	M.Pharm., Ph.D.	Professor & Principal	Pharmaceutics
2	Dr. P.K. Kulkarni (PKK)	M.Pharm., Ph.D.	Professor & Vice Principal	Pharmaceutics
3	Dr. D. Vishakante Gowda (DVG)	M.Pharm., Ph.D.	Professor & Head	Pharmaceutics
4	Dr. Balamuralidhara V. (BMV)	M.Pharm., Ph.D.	Asst. Professor	Pharmaceutics
5	Dr. Gangadharappa H.V.(HVG)	M.Pharm., Ph.D.	Asst. Professor	Pharmaceutics
6	Dr. M.P. Venkatesh (MPV)	M.Pharm., Ph.D.	Asst. Professor	Pharmaceutics
7	Dr. Vikas Jain (VJ)	M.Pharm., Ph.D.	Asst. Professor	Pharmaceutics
8	Dr. Amit B Patil (ABP)	M.Pharm., Ph.D.	Asst. Professor	Pharmaceutics
9	Dr. Gowrav M P (MPG)	M.Pharm., Ph.D.	Lecturer	Pharmaceutics
10	Mr. Hemanth Kumar S (HKS)	M.Pharm	Lecturer	Pharmaceutics
11	Mrs. Asha Spandana K M (ASP)	M.Pharm	Lecturer	Pharmaceutics
12	Mr B Mahendran (BM)	M.Pharm	Lecturer	Pharmaceutics
13	Dr Shailesh T (TS)	M.Pharm., Ph.D.	Lecturer	Pharmaceutics
14	Smt Preethi S (PS)	M.Pharm	Lecturer	Pharmaceutics
15	Dr. M. Ramesh (MR)	M.Pharm., Ph.D.	Professor & Head	Pharmacy Practice
16	Mr. D.H. P. Gowda (DHP)	M.Sc., PGDCA.	Asst. Professor	Pharmacy Practice
17	Mrs. Shilpa Palaksha (SP)	M.Pharm.	Asst. Professor	Pharmacy Practice
18	Mrs. Savitha R S (RSS)	M.Pharm.	Asst. Professor	Pharmacy Practice
19	Mr. Jaidev Kumar B R (BRJ)	M.Pharm.	Lecturer	Pharmacy Practice
20	Dr. M Umesh (UM)	Pharm D.	Lecturer	Pharmacy Practice
21	Dr. Juny Sebstian (JUS)	M.Pharm., Ph.D.	Lecturer	Pharmacy Practice
22	Dr Sri Harsha Chalasani (CSH)	M.Pharm., Ph.D.	Lecturer	Pharmacy Practice
23	Dr. Krishna Undela (KU)	M.Pharm., Ph.D.	Lecturer	Pharmacy Practice
24	Dr Srikanth M S (MSS)	M.Pharm., Ph.D.	Lecturer	Pharmacy Practice
25	Mr Balaji S (BS)	M.Pharm	Lecturer	Pharmacy Practice
26	Dr U R Rakshith (URR)	Pharm D	Lecturer	Pharmacy Practice
27	Dr. B.M. Gurupadayya (BMG)	M.Pharm., Ph.D.	Professor	Pharma. Chemistry
28	Dr. Gurubasavaraj V Pujar (GVP)	M.Pharm., Ph.D.	Professor & Head	Pharma. Chemistry
29	Dr. Prashantha Kumar B R (BRP)	M.Pharm., Ph.D.	Asst. Professor	Pharma. Chemistry
30	Dr. R. S. Chandan (RSC)	M.Pharm., Ph.D.	Asst. Professor	Pharma. Chemistry
31	Dr. Anand Kumar Tengli (AKT)	M.Pharm., Ph.D.	Asst. Professor	Pharma. Chemistry
32	Dr. Durai Ananda Kumar	M.Pharm., Ph.D.	Asst. Professor	Pharma. Chemistry

	(DAT)			
33	Dr. Jaishree V (JV)	M.Pharm., Ph.D.	Asst. Professor	Pharma. Chemistry
34	Dr. H. Yogish Kumar (HYK)	M.Pharm., Ph.D.	Lecturer	Pharma. Chemistry
35	Dr. Sheshagiri Dixit (SRD)	M.Pharm., Ph.D.	Lecturer	Pharma. Chemistry
36	Mr. Chetan.I.A	M.Pharm	Lecturer	Pharma. Chemistry
37	Dr. K Mruthunjaya (KM)	M.Pharm., Ph.D.	Professor & Head	Pharmacognosy
38	Dr. J. Suresh (JS)	M.Pharm., Ph.D.	Professor	Pharmacognosy
39	Dr. N Paramakrishnan (NPK)	M.Pharm., Ph.D.	Lecturer	Pharmacognosy
40	Mr. Vageesh Revadigar (VR)	M.Pharm	Lecturer	Pharmacognosy
41	Ms. Haripriya G	M Pharm	Lecturer	Pharmacognosy
42	Dr. S. N. Manjula (SNM)	M.Pharm., Ph.D.	Professor & Head	Pharmacology
43	Dr. Saravana Babu C (SB)	M.Pharm., Ph.D.	Asso.Professor	Pharmacology
44	Dr. K L Krishna (KLK)	M.Pharm., Ph.D.	Asst. Professor	Pharmacology
45	Mrs. A M Mahalakshmi (AMM)	M.Pharm.	Lecturer	Pharmacology
46	Mrs. Seema Mehdi (SM)	M.Pharm	Lecturer	Pharmacology
47	Dr. Nagashree K S (KNS)	M.Pharm., Ph.D	Lecturer	Pharmacology

B.PHARM

Program Educational Objectives (PEOs):

PEO 1: To acquire the theoretical knowledge of pharmaceutical sciences

PEO 2: To acquire practical skills in

- isolation of medicinal compounds from natural sources
- synthesis and analysis of medicinal compounds
- screening medicinal compounds for pharmacological activities
- formulation of pharmaceutical dosage forms and their evaluation

PEO 3: To develop competent Pharmacists with ethical attitude, research intuition, leadership qualities, to participate in public health programs and engage in life-long learning

Program Outcomes (POs):

1. Ability to acquire knowledge of pharmaceutical sciences
2. Ability to design and conduct experiments, to analyze and interpret data
3. Ability to demonstrate effective planning, develop and implement plans within time frame.
4. Ability to function effectively individually and on teams, including diverse and multidisciplinary, to accomplish a task.
5. Ability to understand and appreciate the role of pharmacist in healthcare services.
6. Understanding of professional, ethical, legal, security and social issues and responsibilities.
7. Ability to understand contemporary issues relating to pharmacy profession and challenges ahead.
8. Awareness of ethical and professional responsibilities.
9. Possess the necessary interpersonal and communication skills to be a productive member of the team in work environment.
10. Ability to use current techniques, skills, and modern tools.
11. A strong background and motivation to pursue life-long learning

COURSE HAND OUT 2020-21 Class: V Semester - B. Pharm

1. Course Details

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP501T	Medicinal Chemistry II – Theory	3	1	4
BP502T	Industrial Pharmacy-I - Theory	3	1	4
BP503T	Pharmacology II – Theory	3	1	4
BP504T	Pharmacognosy and Phytochemistry II – Theory	3	1	4
BP505T	Pharmaceutical Jurisprudence – Theory	3	1	4
BP506P	Industrial Pharmacy-I – Practical	4	-	2
BP507P	Pharmacology II – Practical	4	-	2
BP508P	Pharmacognosy and Phytochemistry II – Practical	4	-	2
	Total	**27**	**5**	**26**

2. Evaluation:

a. Internal assessment: Continuous mode

The marks allocated for Continuous mode of Internal Assessment, as per the scheme given below.

Table 1: Scheme for awarding internal assessment: Continuous mode

THEORY		
Criteria	**Maximum Marks**	
Attendance	4	2
Academic activities (Average of any 3 activities e.g. quiz, assignment, open book test, field work, group discussion and seminar)	3	1.5
Student – Teacher interaction	3	1.5
Total	**10**	**5**
PRACTICALS		
Attendance	2	
Based on Practical Records, Regular viva voce, etc.	3	
Total	**5**	

Table 2: Guidelines for the allotment of marks for attendance

Percentage of Attendance	Theory	Practical
95 – 100	4	2
90 – 94	3	1.5
85 – 89	2	1
80 – 84	1	0.5
Less than 80	0	0

b. Sessional Exams

Two Sessional exams shall be conducted for each theory / practical course as per the schedule fixed by the college(s). The scheme of question paper for theory and practical Sessional examinations is given below. The average marks of two Sessional exams shall be computed for internal assessment as per the requirements.

Sessional exam shall be conducted for 30 marks for theory and shall be computed for 15 marks. Similarly Sessional exam for practical shall be conducted for 40 marks and shall be computed for 10 marks.

Question paper pattern for theory Sessional examinations

For subjects having University examination

I. Multiple Choice Questions (MCQs)		
(Answer all the questions)	=	10 x 1 = 10
I. Long Answers (Answer 1 out of 2)	=	1 x 10 = 10
II. Short Answers (Answer 2 out of 3)	=	2 x 5 = 10

Total	=	30 marks

For subjects having Non University Examination

I. Long Answers (Answer 1 out of 2)	=	1 x 10 = 10
II. Short Answers (Answer 4 out of 6)	=	4 x 5 = 20

Total	=	30 marks

Question paper pattern for practical sessional examinations

I. Synopsis	=	10
II. Experiments	=	25
III. Viva voce	=	05

Total	=	40 marks
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3. End semester examinations

The End Semester Examinations for each theory and practical course through semesters I to VIII shall be conducted by the university except for the subjects notified as non-university examinations

Table 3: Scheme for internal assessments and university examination - Semester-V

Course code	Name of the course	Internal Assessment				End Semester Exams		Total Marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
BP501T	Medicinal Chemistry II – Theory	10	15	1 Hr	25	75	3 Hrs	100
BP502T	Industrial Pharmacy-I – Theory	10	15	1 Hr	25	75	3 Hrs	100
BP503T	Pharmacology II – Theory	10	15	1 Hr	25	75	3 Hrs	100
BP504T	Pharmacognosy and Phytochemistry II – Theory	10	15	1 Hr	25	75	3 Hrs	100
BP505T	Pharmaceutical Jurisprudence– Theory	10	15	1 Hr	25	75	3 Hrs	100
BP506P	Industrial Pharmacy-I – Practical	5	10	4 Hrs	15	35	4 Hrs	50
BP507P	Pharmacology II – Practical	5	10	4 Hrs	15	35	4 Hrs	50
BP508P	Pharmacognosy and Phytochemistry II – Practical	5	10	4 Hrs	15	35	4 Hrs	50
Total		**65**	**105**	**17 Hrs**	**170**	**480**	**27 Hrs**	**650**

Question paper pattern for end semester theory examinations

For 75 marks paper

I. Multiple Choice Questions (MCQs)
(Answer all the questions) = 20 x 1 = 20
I. Long Answers (Answer 2 out of 3) = 2 x 10 = 20
II. Short Answers (Answer 7 out of 9) = 7 x 5= 35

Total = 75 marks

For 50 marks paper

I. Long Answers (Answer 2 out of 3) = 2 x 10 = 20
II. Short Answers (Answer 6 out of 8) = 6 x 5 = 30

Total = 50 marks

For 35 marks paper

I. Long Answers (Answer 1 out of 2) = 1 x 10 = 10
II. Short Answers (Answer 5 out of 7) = 5 x 5 = 25

Total = 35 marks

Question paper pattern for end semester practical examinations

I. Synopsis	=	5
II. Experiments	=	25
III. Viva voce	=	5
	Total =	35 marks

4. Promotion and award of grades

A student shall be declared PASS and eligible for getting grade in a course of B.Pharm. programme if he/she secures at least 50% marks in that particular course including internal assessment. For example, to be declared as PASS and to get grade, the student has to secure a minimum of 50 marks for the total of 100 including continuous mode of assessment and end semester theory examination and has to secure a minimum of 25 marks for the total 50 including internal assessment and end semester practical examination.

5. Carry forward of marks

In case a student fails to secure the minimum 50% in any Theory or Practical course as specified (in promotion and award of grades), then he/she shall reappear for the university examination of that course. However his/her marks of the Internal Assessment shall be carried over and he/she shall be entitled for grade obtained by him/her on passing.

6. Improvement of internal assessment

A student shall have the opportunity to improve his/her performance only once in the Sessional exam component of the internal assessment. The re-conduct of the Sessional exam shall be completed before the commencement of next end semester theory examinations.

7. Re-examination of end semester examinations

Reexamination of end semester examination shall be conducted as per the schedule given in Table 4. The exact dates of examinations will be notified from time to time.

Table 4: Tentative schedule of university examinations and supplementary examinations

Semester	Regular examinations	Supplementary examinations
I, III, V and VII	November / December	May / June
II, IV, VI and VIII	May / June	November / December

8. Grading of performances

Letter grades and grade points allocations

Based on the performances, each student shall be awarded a final letter grade at the end of the semester for each course.

Table 5: Letter grades and grade points equivalent to percentage of marks and performances

Percentage of Marks Obtained	Letter Grade	Grade Point	Performance
90.00 – 100	A+	10	Outstanding
80.00 – 89.99	A	9	Excellent
70.00 – 79.99	B	8	Good
60.00 – 69.99	C	7	Fair
50.00 – 59.99	D	6	Average
Less than 50	F	0	Fail
Absent	AB	0	Fail

A learner who remains absent in any form of evaluation/examination, letter grade allocated to him/her should be assigned a letter grade of AB and a corresponding grade point of zero. He/she should reappear for the said evaluation/examination in due course.

9. Declaration of class

The class shall be awarded on the basis of CGPA as follows:

First Class with Distinction = CGPA of. 7.50 and above
First Class = CGPA of 6.00 to 7.49
Second Class = CGPA of 5.00 to 5.99

10. Attendance: The marks is allotted based on the attendance percentage (Table 2)

11. Chamber consultation hours: Any time during college hours.

12. Tutorial Class: Objective of the tutorial is to enhance the learning ability and help students in better understanding of the subject. This provides a best opportunity for the students to clarify their subject doubts. This involves discussions, presentations on specified topics, assignments and evaluation.

BP 501T. MEDICINAL CHEMISTRY-II (Theory)

Teacher: Dr. Anand Kumar Tengli (AKT) 45 Hours (3 Hrs/ week)

Scope: This subject is designed to impart fundamental knowledge on the structure, chemistry and therapeutic value of drugs. The subject emphasizes on structure activity relationships of drugs, importance of physicochemical properties and metabolism of drugs. The syllabus also emphasizes on chemical synthesis of important drugs under each class.

Objectives: Upon completion of the course the student shall be able to:

Theory:

1. explain the importance of a drug with respect to its chemical class, pharmacological activity and therapeutic value.
2. summarize the classification of various categories of therapeutic agents based on their chemical nature/mechanism of action
3. describe the mode of action, drug targets and structure & activity relationship (SAR)of a drugs belonging to the chemical class.
4. explain the possible metabolic pathways of the drugs and the adverse effects
5. write the principle and reaction associated with the synthesis of selected drug molecules

Lecture wise programme:

Study of the development of the following classes of drugs, Classification, mechanism of action, uses of drugs mentioned in the course, Structure activity relationship of selective class of drugs as specified in the course and synthesis of drugs superscripted (*)

Chapter No.	Title	No. of Hours

1	**Antihistaminic agents** A. Histamine, receptors and their distribution in the human body B. **H_1–antagonists:** Diphenhydramine hydrochloride*, Dimenhydrinate, Doxylamines cuccinate, Clemastine fumarate, Diphenylphyraline hydrochloride, Tripelenamine hydrochloride, Chlorcyclizine hydrochloride, Meclizine hydrochloride, Buclizine hydrochloride, Chlorpheniramine maleate, Triprolidine hydrochloride*, Phenidamine tartarate, Promethazine hydrochloride*, Trimeprazine tartrate, Cyproheptadine hydrochloride, Azatidine maleate, Astemizole, Loratadine, Cetirizine, Cromolyn sodium **C. H_2-antagonists:** Cimetidine*, Famotidine, Ranitidine **Gastric Proton pump inhibitors:** Omeprazole, Lansoprazole, Rabeprazole, Pantoprazole	**1** **2** **1** **1**
2	**Anti-neoplastic agents** **A. Alkylating agents:** Meclorethamine*, Cyclophosphamide, Melphalan, Chlorambucil, Busulfan, Thiotepa. **B. Antimetabolites:** Mercaptopurine*, Thioguanine, Fluorouracil, Floxuridine, Cytarabine, Methotrexate*, Azathioprine **C. Antibiotics:** Dactinomycin, Daunorubicin, Doxorubicin, Bleomycin **D. Plant products:** Etoposide, Vinblastin sulphate, Vincristin sulphate **E. Miscellaneous:** Cisplatin, Mitotane.	**5**
3	**Drugs acting on Cardiovascular system** **A. Anti-anginal:** • **Vasodilators:** Amyl nitrite, Nitroglycerin*, Pentaerythritol tetranitrate, Isosorbide dinitrite*, Dipyridamole. • **Calcium channel blockers:** Verapamil, Bepridil hydrochloride, Diltiazem hydrochloride, Nifedipine, Amlodipine, Felodipine, Nicardipine, Nimodipine..	**3**
	B. Diuretics • Carbonic anhydrase inhibitors: Acetazolamide*, Methazolamide, Dichlorphenamide. • Thiazides: Chlorthiazide*, Hydrochlorothiazide, Hydroflumethiazide, Cyclothiazide, • Loop diuretics: Furosemide*, Bumetanide, Ethacrynic acid. • Potassium sparing Diuretics: Spironolactone, Triamterene,	**3**

	Amiloride. • Osmotic Diuretics: Mannitol	
	C. Anti-hypertensive Agents • Timolol, Captopril, Lisinopril, Enalapril, Benazepril hydrochloride, Quinapril hydrochloride, Methyldopate hydrochloride,* Clonidine hydrochloride, Guanethidine monosulphate, Guanabenz acetate, Sodium nitroprusside, Diazoxide, Minoxidil, Reserpine, Hydralazine hydrochloride.	**4**
	D. Anti-arrhythmic Drugs • Quinidine sulphate, Procainamide hydrochloride, Disopyramide phosphate*, Phenytoin sodium, Lidocaine hydrochloride, Tocainide hydrochloride, Mexiletine hydrochloride, Lorcainide hydrochloride, Amiodarone, Sotalol.	**3**
	E. Anti-hyperlipidemic agents: Clofibrate, Lovastatin, Cholesteramine and Cholestipol **F. Coagulant & Anticoagulants:** Menadione, Acetomenadione, Warfarin*, Anisindione, clopidogrel. **G. Drugs used in Congestive Heart Failure:** Digoxin, Digitoxin, Nesiritide, Bosentan, Tezosentan.	**2** **2** **3**

4.	**Drugs acting on Endocrine system** **A. Sex hormones:** Testosterone, Nandralone, Progestrones, Oestriol, Oestradiol, Oestrione, Diethyl stilbestrol. **B. Drugs for erectile dysfunction:** Sildenafil, Tadalafil. **C. Oral contraceptives:** Mifepristone, Norgestril, Levonorgestrol **D. Corticosteroids:** Cortisone, Hydrocortisone, Prednisolone, Betamethasone, Dexamethasone **E. Thyroid and antithyroid drugs:** L-Thyroxine, L-Thyronine, Propylthiouracil, Methimazole. **F. Antidiabetic agents** • Insulin and its preparations • Sulfonyl ureas: Tolbutamide*, Chlorpropamide, Glipizide, Glimepiride. • Biguanides: Metformin. • Thiazolidinediones: Pioglitazone, Rosiglitazone. • Meglitinides: Repaglinide, Nateglinide. • Glucosidase inhibitors: Acrabose, Voglibose.	**2** **1** **1** **2** **2** **4**
5.	**Local Anesthetics:** SAR of Local anesthetics **A.** SAR of Local anesthetics • **Benzoic Acid derivatives**; Cocaine, Hexylcaine, Meprylcaine, Cyclomethycaine, Piperocaine. • **Amino Benzoic acid derivatives**: Benzocaine*, Butamben, Procaine*, Butacaine, Propoxycaine, Tetracaine, Benoxinate. • **Lidocaine/Anilide derivatives**: Lignocaine, Mepivacaine, Prilocaine, Etidocaine. • **Miscellaneous**: Phenacaine, Diperodon, Dibucaine.*	**3**

Theory Sessional examination syllabus

Sessional No.	Syllabus Chapters no.
I	1, 2 and 4
II	3 and 5

Recommended Books (Latest Editions)

1. Wilson and Giswold's Organic medicinal and Pharmaceutical Chemistry.

2. Foye's Principles of Medicinal Chemistry.

3. Burger's Medicinal Chemistry, Vol I to IV.

4. Introduction to principles of drug design- Smith and Williams.

5. Remington's Pharmaceutical Sciences.

6. Martindale's extra pharmacopoeia.

7. Organic Chemistry by I.L. Finar, Vol. II.

8. The Organic Chemistry of Drug Synthesis by Lednicer, Vol. 1to 5.

9. Indian Pharmacopoeia.

10. Text book of practical organic chemistry- A.I.Vogel.

BP 502T. INDUSTRIAL PHARMACY-I (Theory)

Teacher/s: Dr. M. P. Venkatesh (MPV) **45 Hours (3 Hrs/ week)**

Scope: Course enables the student to understand and appreciate the influence of pharmaceutical additives and various pharmaceutical dosage forms on the performance of the drug product.

Objectives: Upon completion of the course the student shall be able to

1. explain the preformulation parameters to develop various dosage forms including stability studies
2. classify the various dosage forms including cosmetics
3. describe manufacturing techniques and in process quality control tests for various dosage forms.
4. appraise the packing materials for finished products.

Practical:

1. Formulate and evaluate solid, semi solid and liquid dosage forms
2. Perform the in process quality control tests for solid, semi solid and liquid dosage forms
3. Evaluate glass containers for quality tests

Lecture wise Programme

	Topic	Hrs
1.	**Preformulation Studies:** Introduction to preformulation, goals and objectives, study of physicochemical characteristics of drug substances. ***a. Physical properties:*** Physical form (crystal & amorphous), particle size, shape, flow properties, solubility profile (pKa, pH, partition coefficient), polymorphism ***b. Chemical Properties:*** Hydrolysis, oxidation, reduction, racemisation, polymerization. BCS classification of drugs & its significant Application of preformulation considerations in the development of solid, liquid oral and parenteral dosage forms and its impact on stability of dosage forms.	**2** **2** **2** **2**
2.	**Tablets:** a. Introduction, ideal characteristics of tablets, classification of tablets. Excipients, Formulation of tablets, granulation methods, compression and processing problems. Equipments and tablet tooling. b. Tablet coating: Types of coating, coating materials, formulation of coating composition, methods of coating, equipment employed and	**4** **2**

	defects in coating. c. Quality control tests: In process and finished product tests	 **1**
3.	**Liquid orals:** Formulation and manufacturing consideration of solutions, suspensions and emulsions; Filling and packaging; evaluation of liquid orals official in pharmacopoeia	**3**
4.	**Capsules:** a. ***Hard gelatin capsules:*** Introduction, Production of hard gelatin capsule shells. Size of capsules, Filling, finishing and special techniques of formulation of hard gelatin capsules, manufacturing defects. In process and final product quality control tests for capsules. **b.** ***Soft gelatin capsules:*** Nature of shell and capsule content, size of capsules, importance of base adsorption and minim/gram factors, production, in process and final product quality control tests. Packing, storage and stability testing of soft gelatin capsules and their applications.	 **3** **3**
5.	**Pellets:** Introduction, formulation requirements, pelletization process, equipments for manufacture of pellets	**2**
6.	**Parenteral Products :** a. Definition, types, advantages and limitations. Preformulation factors and essential requirements, vehicles, additives, importance of isotonicity b. Production procedure, production facilities and controls. c. Formulation of injections, sterile powders, large volume parenterals and lyophilized products. d. Containers and closures selection, filling and sealing of ampoules, vials and infusion fluids. Quality control tests of parenteral products.	 **2** **2** **2** **2**
7.	**Ophthalmic Preparations:** Introduction, formulation considerations; formulation of eye drops, eye ointments and eye lotions; methods of preparation; labeling, containers; evaluation of ophthalmic preparations	**2**
8.	**Cosmetics:** Formulation and preparation of the following cosmetic preparations: lipsticks, shampoos, cold cream and vanishing cream, tooth pastes, hair dyes and sunscreens.	**4**
9.	**Pharmaceutical Aerosols:** Definition, propellants, containers, valves, types of aerosol systems; formulation and manufacture of aerosols; Evaluation of aerosols; Quality control and stability studies.	**2**
10.	**Packaging Materials Science:** Materials used for packaging of pharmaceutical products, factors influencing choice of containers, legal and official requirements for containers, stability aspects of packaging materials, quality control tests.	**3**

Theory Internal assessment syllabus

Internal assessment No.	Syllabus Chapters no.
I	1 to 4
II	5 to 10

BP 506P. INDUSTRIAL PHARMACY-I (Practical)

Teacher/s: Dr. Amit Patil (ABP) & Mr. B Mahendran (BM) 60 Hours (4 Hours/week)

1. Preformulation study for prepared granules
2. Preparation and evaluation of Paracetamol tablets
3. Preparation and evaluation of Aspirin tablets
4. Coating of tablets
5. Preparation and evaluation of Tetracycline capsules
6. Preparation of Calcium Gluconate injection
7. Preparation of Ascorbic Acid injection
8. Preparation of Paracetamol Syrup
9. Preparation of Eye drops
10. Preparation of Pellets by extrusion spheronization technique
11. Preparation of Creams (cold / vanishing cream)
12. Evaluation of Glass containers

Recommended Books: (Latest Editions)

1. Pharmaceutical dosage forms - Tablets, volume 1 -3 by H.A. Liberman, Leon Lachman & J.B.Schwartz
2. Pharmaceutical dosage form - Parenteral medication vol- 1&2 by Liberman & Lachman
3. Pharmaceutical dosage form disperse system VOL-1 by Liberman & Lachman
4. Modern Pharmaceutics by Gilbert S. Banker & C.T. Rhodes, 3rd Edition
5. Remington: The Science and Practice of Pharmacy, 20th edition Pharmaceutical Science (RPS)
6. Theory and Practice of Industrial Pharmacy by Liberman & Lachman
7. Pharmaceutics - The science of dosage form design by M.E.Aulton, Churchill livingstone, Latest edition

8. Introduction to Pharmaceutical Dosage Forms by H. C.Ansel, Lea & Febiger, Philadelphia, 5th edition, 2005
9. Drug stability - Principles and practice by Cartensen & C.J. Rhodes, 3rd Edition, Marcel Dekker Series, Vol 107.

BP 503T. PHARMACOLOGY-II (Theory)

Teacher/s: Mrs. A.M. Mahalakshmi **45 Hours (3 Hrs/ week)**

Scope: This subject is intended to impart the fundamental knowledge on various aspects (classification, mechanism of action, therapeutic effects, clinical uses, side effects and contraindications) of drugs acting on different systems of body and in addition, emphasis on the basic concepts of bioassay.

Objectives: Upon the completion of the course student shall be able to

Theory:

1. Describe the mechanisms and Pharmacological actions of different classes of drugs
2. Outline the major adverse effects and drug interactions
3. Correlate and apply the basic pharmacological knowledge in clinical uses of drugs
   Explain the principles and methods of bioassays

Practical:

1. Describe the composition and uses of various physiological salt solutions
2. Describe the principle and procedure employed in isolated tissue experiments
3. Perform various bioassays using simulated software
4. Perform various *in vivo* pharmacological experiments using simulated software and interpret the results obtained.

Lecture wise program

Chapter No.		Topics	Hours
1.	**Pharmacology of drugs acting on cardio vascular system**		**10**
	a.	Introduction to hemodynamic and electrophysiology of heart	02
	b.	Drugs used in congestive heart failure	02
	c.	Anti-hypertensive drugs.	02
	d.	Anti-anginal drugs.	02
	e.	Anti-arrhythmic drugs.	02
	f.	Anti-hyperlipidemic drugs.	
2.	**A) Pharmacology of drugs acting on cardio vascular system**		**10**

	a.	Drug used in the therapy of shock.	01
	b.	Hematinics, coagulants and anticoagulants.	02
	c.	Fibrinolytics and anti-platelet drugs	02
	d.	Plasma volume expanders	02
	B) Pharmacology of Drugs acting on Urinary system		
	a. Diuretics		02
	b. Anti-diuretics		01
3.	**Autocoids and related drugs**		**10**
	a.	Introduction to autacoids and classification	01
	b.	Histamine, 5-HT and their antagonists.	02
	c.	Prostaglandins, Thromboxanes and Leukotrienes.	02
	d.	Angiotensin, Bradykinin and Substance P.	02
	e.	Non-steroidal anti-inflammatory agents	01
	f.	Anti-gout drugs	01
	g.	Antirheumatic drugs	01
4.	**Pharmacology of drugs acting on endocrine system**		**08**
	Basic concepts in endocrine pharmacology.		01
	a.	Anterior Pituitary hormones- analogues and their inhibitors.	02
	b.	Thyroid hormones- analogues and their inhibitors.	01
	c.	Hormones regulating plasma calcium level- Parathormone, Calcitonin and Vitamin-D.	02
	d.	Insulin, Oral Hypoglycemic agents and glucagon.	01
	e.	ACTH and corticosteroids.	01
5.	**Pharmacology of drugs acting on endocrine system**		**07**
	a.	Androgens and Anabolic steroids.	02
	b.	Estrogens, progesterone and oral contraceptives.	
	c.	Drugs acting on the uterus.	01
6.	**Bioassay**		
	a.	Principles and applications of bioassay.	01
	b.	Types of bioassay	01
	c.	Bioassay of insulin, oxytocin, vasopressin, ACTH, d-tubocurarine, digitalis, histamine and 5-HT	02

Theory Internal assessment syllabus

Internal assessment No.	Syllabus Chapters no.
I	1 to 3b
II	3c to 6

BP 507 P. PHARMACOLOGY-II (Practical)

Teacher/s: Mrs. A.M. Mahalakshmi **60 Hours (4 hrs / week)**

Exp No.	Topics
1.	Introduction to *in-vitro* pharmacology and physiological salt solutions.
2.	Effect of drugs on isolated frog heart.
3.	Effect of drugs on blood pressure and heart rate of dog.
4.	Study of diuretic activity of drugs using rats/mice.
5.	DRC of acetylcholine using frog rectus abdominis muscle.
6.	Effect of physostigmine and atropine on DRC of acetylcholine using frog rectus abdominis muscle and rat ileum respectively.
7.	Bioassay of histamine using guinea pig ileum by matching method.
8.	Bioassay of oxytocin using rat uterine horn by interpolation method.
9.	Bioassay of serotonin using rat fundus strip by three point bioassay.
10.	Bioassay of acetylcholine using rat ileum/colon by four point bioassay.
11.	Determination of PA_2 value of prazosin using rat anococcygeus muscle (by Schilds plot method).
12.	Determination of PD_2 value using guinea pig ileum.
13.	Effect of spasmogens and spasmolytics using rabbit jejunum.
14.	Anti-inflammatory activity of drugs using carrageenan induced paw-edema model.
15.	Analgesic activity of drug using central and peripheral methods

***Note**: All laboratory techniques and animal experiments are demonstrated by simulated experiments by softwares and videos*

Recommended Books (Latest Editions)

1. Rang H. P., Dale M. M., Ritter J. M., Flower R. J., Rang and Dale's Pharmacology, Churchil Livingstone Elsevier
2. Katzung B. G., Masters S. B., Trevor A. J., Basic and clinical pharmacology, Tata Mc Graw-Hill.
3. Goodman and Gilman's, The Pharmacological Basis of Therapeutics

4. Marry Anne K. K., Lloyd Yee Y., Brian K. A., Robbin L.C., Joseph G. B., Wayne A. K., Bradley R.W., Applied Therapeutics, The Clinical use of Drugs, The Point Lippincott Williams & Wilkins.
5. Mycek M.J, Gelnet S.B and Perper M.M. Lippincott's Illustrated Reviews- Pharmacology.
6. K.D.Tripathi. Essentials of Medical Pharmacology. JAYPEE Brothers Medical Publishers (P) Ltd, New Delhi.
7. Sharma H. L., Sharma K. K., Principles of Pharmacology, Paras medical publisher
8. Modern Pharmacology with clinical Applications, by Charles R.Craig & Robert.
9. Ghosh MN. Fundamentals of Experimental Pharmacology. Hilton & Company, Kolkata.
10. Kulkarni SK. Handbook of experimental pharmacology. Vallabh Prakashan.

BP504 T. PHARMACOGNOSY AND PHYTOCHEMISTRY-II (Theory)

Teacher/s: Dr. N. Paramakrishnan (NPK) 45 Hours (3 Hrs/ week)

Scope: The main purpose of subject is to impart the students the knowledge of how the secondary metabolites are produced in the crude drugs, how to isolate and identify and produce them industrially. Also this subject involves the study of producing the plants and phytochemicals through plant tissue culture, drug interactions and basic principles of traditional system of medicine

Objectives: Upon completion of the course, the student shall be able

Theory:

1. know the modern extraction techniques, characterization and identification of the herbal drugs and phytoconstituents
2. understand the preparation and development of herbal formulation
3. understand the herbal drug interactions
4. carryout isolation and identification of phytoconstituents

Practical:

1. explain the different biosynthetic pathways of metabolites
2. write the modern methods of extraction and latest techniques of spectroscopy in the isolation, purification and identification of crude drugs.
3. choose the method of production and estimation of important phytoconstituents
4. describe the types and applications of plant tissue culture
5. write the method of preparation and standardization of ayurvedic formulations

Lecture wise programme:

Chapter	Topic	Hours
1	**Metabolic pathways in higher plants and their determination** a) Brief study of basic metabolic pathways and formation of different secondary metabolites through these pathways- Shikimic acid pathway, Acetate pathways and Amino acid pathway. b) Study of utilization of radioactive isotopes in the investigation of Biogenetic studies	5 2
2	General introduction, composition, chemistry & chemical classes, biosources, therapeutic uses and commercial applications of following secondary metabolites: **Alkaloids:** Vinca, Rauwolfia, Belladonna, Opium,	2

	Phenylpropanoids and Flavonoids: Lignans, Tea, Ruta **Steroids, Cardiac Glycosides & Triterpenoids**: Liquorice, Dioscorea, Digitalis **Volatile oils**: Mentha, Clove, Cinnamon, Fennel, Coriander, **Tannins:** Catechu, Pterocarpus **Resins:** Benzoin, Guggul, Ginger, Asafoetida, Myrrh, Colophony **Glycosides:** Senna, Aloes, Bitter Almond **Iridoids, Other terpenoids & Naphthaquinones:** Gentian, Artemisia, taxus, carotenoids	1 2 2 2 2 2 1
3	Isolation, Identification and Analysis of Phytoconstituents a) Terpenoids: Menthol, Citral, Artemisin b) Glycosides: Glycyrhetinic acid & Rutin c) Alkaloids: Atropine,Quinine,Reserpine,Caffeine d) Resins: Podophyllotoxin, Curcumin	1 2 2 1
4	Industrial production, estimation and utilization of the following phytoconstituents: Forskolin, Sennoside, Artemisinin, Diosgenin, Digoxin, Atropine, Podophyllotoxin, Caffeine, Taxol, Vincristine and Vinblastine	10
5	**Basics of Phytochemistry** Modern methods of extraction, application of latest techniques like Spectroscopy, chromatography and electrophoresis in the isolation, purification and identification of crude drugs.	08

Theory Internal assessment syllabus

Internal assessment No.	Syllabus Chapters no.
I	1 to 3a
II	3b to 5

BP 508 P. PHARMACOGNOSY AND PHYTOCHEMISTRY- II (Practical)

Teacher/s: Dr. N. Paramakrishnan (NPK) & Ms. Haripriya G

60 Hours (4 Hrs/ week)

List of Experiments:

1. Morphology, histology and powder characteristics & extraction & detection of:
Cinchona, Cinnamon, Senna, Clove, Ephedra, Fennel and Coriander
2. Exercise involving isolation & detection of active principles
   a. Caffeine - from tea dust.
   b. Diosgenin from Dioscorea
   c. Atropine from Belladonna
   d. Sennosides from Senna
3. Separation of sugars by Paper chromatography
4. TLC of herbal extract
5. Distillation of volatile oils and detection of phytoconstitutents by TLC
6. Analysis of crude drugs by chemical tests: (i) Asafoetida (ii) Benzoin (iii) Colophony (iv) Aloes (v) Myrrh

Recommended Books: (Latest Editions)

1. W.C.Evans, Trease and Evans Pharmacognosy, 16th edition, W.B. Sounders & Co., London, 2009.
2. Mohammad Ali. Pharmacognosy and Phytochemistry, CBS Publishers & Distribution, New Delhi.
3. Text book of Pharmacognosy by C.K. Kokate, Purohit, Gokhlae (2007), 37th Edition, Nirali Prakashan, New Delhi.
4. Herbal drug industry by R.D. Choudhary (1996), Ist Edn, Eastern Publisher, New Delhi.
5. Essentials of Pharmacognosy, Dr.SH.Ansari, IInd edition, Birla publications, New Delhi, 2007
6. Herbal Cosmetics by H.Pande, Asia Pacific Business press, Inc, New Delhi.
7. A.N. Kalia, Textbook of Industrial Pharmacognosy, CBS Publishers, New Delhi, 2005.
8. R Endress, Plant cell Biotechnology, Springer-Verlag, Berlin, 1994.
9. Pharmacognosy & Pharmacobiotechnology. James Bobbers, Marilyn KS, VE Tylor.
10. The formulation and preparation of cosmetic, fragrances and flavours.
11. Remington's Pharmaceutical sciences.
12. Text Book of Biotechnology by Vyas and Dixit.
13. Text Book of Biotechnology by R.C. Dubey.

BP 505 T. PHARMACEUTICAL JURISPRUDENCE (Theory)

Teacher: Dr. Shailesh. T (TS) **45 Hours (3 Hours/ week)**

Scope:

- This course is designed to impart basic knowledge on important legislations related to the profession of pharmacy in India.

Objectives: Upon completion of the course, the student shall be able to understand:

Theory:

1. The Pharmaceutical legislations and their implications in the development and marketing of pharmaceuticals.
2. Various Indian pharmaceutical Acts and Laws
3. The regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals
4. The code of ethics during the pharmaceutical practice

Lecture wise Programme:

Chapter No	Topics	Hours
1	**Drugs and Cosmetics Act, 1940 and its rules 1945:**	
	Objectives, Definitions, Legal definitions of schedules to the Act and Rules	2
	Import of drugs – Classes of drugs and cosmetics prohibited from import, Import under license or permit. Offences and penalties.	2
	Manufacture of drugs – Prohibition of manufacture and sale of certain drugs	2
	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, loan license and repacking license	4
2	**Drugs and Cosmetics Act, 1940 and its rules 1945:**	
	Detailed study of Schedule G, H, M, N, P,T,U, V, X, Y, Part XII B, Sch F & DMR (OA)	3
	Sale of Drugs – Wholesale, Retail sale and Restricted license. Offences and penalties	2
	Labeling & Packing of drugs- General labeling requirements and specimen labels for drugs and cosmetics, List of permitted colors. Offences and penalties.	2
	Administration of the Act and Rules – Drugs Technical Advisory Board, Central drugs Laboratory, Drugs Consultative Committee, Government	3

	drug analysts, Licensing authorities, controlling authorities, Drugs Inspectors	
3	**a. 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 Penalties **b. 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. **c. 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 3 3
4	**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 **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 **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)	3 2 3
5	**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 **Medical Termination of Pregnancy Act** **Right to Information Act** **Introduction to Intellectual Property Rights (IPR)**	2 2 1 1 2

Theory Internal assessment syllabus

Internal assessment No.	Syllabus Chapters no.
I	1 to 3a
II	3b to 5

Recommended Books (Latest edition):

1. Forensic Pharmacy by B. Suresh.
2. Text book of Forensic Pharmacy by B.M. Mithal
3. Hand book of drug law-by M.L. Mehra
4. A text book of Forensic Pharmacy by N.K. Jain
5. Drugs and Cosmetics Act/Rules by Govt. of India publications.
6. Medicinal and Toilet preparations act 1955 by Govt. of India publications.
7. Narcotic drugs and psychotropic substances act by Govt. of India publications
8. Drugs and Magic Remedies act by Govt. of India publication
9. Bare Acts of the said laws published by Government. Reference books (Theory)

JSS Academy of Higher Education & Research
JSS College of Pharmacy, Mysuru

Schedule and Link for Online Classes – B.Pharm

(w.e.f 18-05-2020)

B.Pharm – V Sem

Day	10:00 AM to 10:50 AM	11:00 AM to 11:50 AM	12:00 PM to 12:50 PM
Mon	Medicinal Chemistry II	Industrial Pharmacy I	Pharmacology II
Tue	Pharmacognosy and Phytochemistry II	Pharmaceutical Jurisprudence	Medicinal Chemistry II
Wed	Medicinal Chemistry II	Industrial Pharmacy I	Pharmacology II
Thu	Pharmacognosy and Phytochemistry II	Pharmaceutical Jurisprudence	Industrial Pharmacy I
Fri	Medicinal Chemistry II	Industrial Pharmacy I	Pharmacology II
Sat	Pharmacognosy and Phytochemistry II	Pharmaceutical Jurisprudence	Pharmacology II

JSS Academy of Higher Education & Research

JSS College of Pharmacy

Sri Shivarathreeshwara Nagara, Mysore-570015

CLASSTIME TABLE – 2020-21

Lunch Break: 1.00 to 2.00 PM
Tea Break: 10.40 to 11.10 AM
3.50 PM to 4.05 PM

Class: B. PHARM (Semester- V)

Time / Day	9.00-9.50AM	9.50-10.40AM	TEA BREAK	11.10-12.05PM	12.05–1.00PM	LUNCH BREAK	2.00-2.55PM	2.55-3.50PM	TEA BREAK	4.05-5.00PM	5.00-5.55PM
Monday	Medicinal Chemistry- II AKT	Pharmacognosy & Phytochemistry-II NPK		Pharmacology II SM	Industrial Pharmacy - I MPV		Pharmacognosy & Phytochemistry-II NPK	Pharmaceutical Jurisprudence ST		----------	
Tuesday	Pharmaceutical Jurisprudence ST	Industrial Pharmacy - I MPV		Pharmaceutical Jurisprudence BMV	Pharmacology II AMM		←-------- Industrial Pharmacy - I--- ←----------Pharmacology II ---------- ←-------------Pharmacognosy --------			----------ABP—Batch – I----→ ----------X-Batch II-------→ ----------NPK-Batch III------→	
Wednesday	----------	Medicinal Chemistry- II AKT		Industrial Pharmacy - I MPV	Pharmaceutical Jurisprudence BMV		←---Industrial Pharmacy - I---- ←----------Pharmacology II ---------- ←-------------Pharmacognosy -------			----------BM-Batch - II------→ ---------- X----Batch III------→ ----------NPK-Batch IV--→	
Thursday	Pharmacology II SB	Medicinal Chemistry- II AKT		Pharmacognosy & Phytochemistry-II NPK	-------		←------- Industrial Pharmacy - I---- ←----------Pharmacology II ---------- ←-------------Pharmacognosy --------			----------BM----Batch - III----------→ ---------- --X----Batch IV----------→ ----------NPK-Batch I----------→	
Friday	----------	---------		Pharmacology II (Tu) SNM	Industrial Pharmacy - I (Tu) MPV		←--------Industrial Pharmacy - I---- ←----------Pharmacology II ---------- ←-------------Pharmacognosy --------			----------ABP---Batch – IV------→ ---------- X------Batch I------→ ----------HP-Batch II---------→	
Saturday	----------	----------		Pharmacognosy & Phytochemistry-II (Tu) NPK	Medicinal Chemistry- II (Tu) AKT		----------				

*** Effective from: 24th June 2020**

Note: 1. No tea break for practical's

Time table Coordinator

Principal

Copy: SNB/LNB/SCF/e-copy-Teachers/ Office in charge-Time table / Time table Coordinator