JSS Academy of Higher Education & Research

JSS College of Pharmacy

Sri Shivarathreeshwara Nagara, Mysuru-570015

Ph: 0821-2548353, Fax: 0821-2548359, Email: jsscpmy@jssuni.edu.in

Website: www.jssuni.edu.in

An ISO 9001:2015 Certified Institution

Accredited 'A+' Grade by NAAC

Course Handout

2023-24

Class: B. Pharm – V Semester

Name : _____

Roll No. : _____

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VISION

To be a leader in Pharmacy Education, Training and Research to Transform Individuals and Society.

MISSION

- To educate and inspire diverse group of future pharmacists and pharmaceutical scientists to be a leader in pharmaceutical sciences and pharmacy practice.
- To provide conducive environment and infrastructure that motivate and enable individuals to excel in research that benefits the society.
- To train and empower the individuals to advance the public health through quality pharmaceutical care services.
- To reach out the public through outreach programs to meet the changing needs of the society.
- To contribute to a sustainable future by adopting innovative technologies and advance pharmacy education and training.

CORE VALUES

- Innovation, Leadership, Excellence, Integrity, Respect, Professionalism

QUALITY POLICY

1. To provide accurate and unbiased assessment of Examinees/ Students.
2. To provide excellent work environment and to promote technical superiority.
3. To carry out work in such a way that student (customer) satisfaction, as well as confidence in college independence, competence, impartiality, and integrity are maintained.

MOBILE PHONE POLICY

- Staff members shall not keep their mobile phones switched on while conducting theory, practical classes and in library.
- Students' mobile phones should be put off in the college premises. If found ringing in the college premises the teachers are authorized to confiscate the mobiles and report to the principal.
- If found guilty, the confiscated mobile phones will not be returned to the student till completion of the course.

Academic Calendar 2022-23
(B. Pharm – III Semester)

1. **Commencement of Classes**

   B. Pharm – III Semester - 10th July 2023

2. **Sessional Examination Schedule**

I	II
06th September	15th November

3. **Closure of Term** - 21st November 2023
4. **End semester Examination** - 27th November 2023

Teacher's In charge

Class	Class Teacher	Batch No.	Batch Teacher
II Year III semester	Dr. Logesh R (LR)	I	Dr. Logesh R (LR)
		II	Dr. Nagashree K S (KSN)
		III	Dr. Anand Kumar Tengli (AKT)
		IV	Dr. S N Manjula (SNM)

ACTIVITIES AND COORDINATORS 2023-24

Curricular & Co curricular activities

Sl. No	Activities	Coordinator/s	Tentative schedule of meeting/activity
1.	Induction, learning skills, and personality development programs for freshers' day	Coordinator: AKT Members: BRJ, DT	July/August 2023
2.	Anti-ragging cell	Coordinators: JS, KSN, & Committee members	July/August 2023
3.	Grievance and redressal cell	Coordinator: GVP & Committee members	Meetings - twice/year
4.	Gender Sensitization Committee	Coordinator: SNM & Committee members	Meetings - twice/year

5.	Industrial Visits, Training, and placements	Coordinator: ABP Members: MGS, SM, SD, LR, UM	September 2023- June 2024
6.	Internal Quality Assurance Cell (IQAC) Team	Chairman- GVP Coordinator- HVG Member Secretary: SP Members: RSC, MPV, KSN, CIA, HP	4 meetings/year
7.	Guest lecture & Seminar/ Conference/ Training / Workshop/Webinar organized at college / delivered/ attended by staff- Validation of college data.	IQAC Team	Throughout the academic year
8.	Governing council meeting	GVP + IQAC Team AAO & Asha B	July 2023 and Feb 2024
9.	Preparation of documents and submission for NIRF, NAAC, NBA, PCI or any other agency	Team IQAC	• Throughout the academic year
10.	Internal Assessment Committee (IAC)	Coordinator: GVP Members: All program Coordinators (M Pharm, B. Pharm, D Pharm, Pharm D)	Meetings - twice/year Schedule as per the academic calendar
11.	ACPE committee- Interim report and others	Coordinator: MR /RSS Member: SP & UM	• As required
12.	Academic Council Board (ACB) • Student Progression (Advanced/ Medium/ Slow learners) • Mentors Diary- Student profile	Class teachers and Program Coordinators	• After each sessional exam • Regular monitoring of Mentee
13.	Ethics committee	• IAEC-SBC • IEC-CSH	• Twice a year
14.	Class Timetable committee	Coordinator: VJ Member: BRP, NPK, URR, DT	• Twice a year (June & Nov 2023)
15.	Women's cell/Prevention of Sexual Harassment Cell/Internal Complaints committee (ICC)	SNM & committee members	• Meetings twice a year (June & Nov • 2023)
16.	Scholarship Bureau	Coordinator: RSC Member: SRD	Soon after the announcement of the Scholarships

17.	Compilation of publications (Research papers/ books/chapters)	Coordinator: SRD	1st of Every month
18.	Research Coordination & Consultancy Committee Compilation of Ph.D. details and funded projects Review of publications Collaboration with Industries/organizations Interdepartmental/ Interdisciplinary research	Chairman-SBC Members-All HoDs	At least 3 meetings/year
19.	Department Academic Integrity Panel (DAIP) - Plagiarism Check for PhD & M Pharm thesis	Chairman-TMP Member Secretary: BRP Member-VJ	During the submission of thesis by the students
20.	Pharmacy Education Unit – for CCLPE activities	MSS	At least 5 activities/ year
21.	Annual result analysis and List of merit students	Class teachers and M Pharm Course Coordinators	Soon after the exam results
22.	GPAT and other competitive exams (TOEFL, GRE etc.)	Coordinator: SNM Members: RAO, RJ	Planning of coaching Throughout the academic year
23.	Library orientation	Librarian	July/August 2023
24.	Library staff coordinator	Coordinator: HYK Members: PP, AAR, RG, DT, and AAP	Two meetings/year Yearly textbook requirements
25.	Soft Skills Training	Coordinator: ABP Member: MGS	At least 3 activities/year
26.	International Student Rotation	CSH	As and when
27.	Hackathon	RAO	At least two events/ year
28.	Golden Jubilee-Souvenir, press and publicity	Chairman- TMP/ GVP Members-BS, KSN, RJ, RG, CIA	August 2022- August 2023
29.	SDG- Activities and Compendium	CIA, PP	• Compendium- August 23 • Regular activity under each SDG
30.	Course handouts/ Teachers' diary/ Student Handbook/Faculty Handbook.	NPK & HYK	• July/ August 2023

31.	National Pharmacy Week (NPW) & Pharmacists Day	Coordinator: UM & IPA office bearers	• Nov-Dec 2023
32.	Alumni association	Coordinator: HVG Member: SM	• August/September 2023
33.	Herbal and College Garden	NPK	• Regular monitoring
34.	ISO 9001:2015	Coordinator: SNM Member: SM	• 2 Internal audits (July and December) • Surveillance/ Recertification audit
35.	Press and publicity	Coordinator: BRP Member: TS	During the Conferences/ workshop organized
36.	Foreign students' cell	MPV	At least 2 meetings
37.	Monthly/Annual report of college and JSSU Newsletter & Annual report of JSS AHER and other agencies	Coordinator: KM Members: PP, HP, AAP, DT, AAR	Monthly report
38.	College website updating	Coordinator: HKS Members: AKT, DT, RG, URR, MGS	Throughout the year
39.	JSSUonline.com Student promotion, Timetable, teacher allotment, and others	Coordinator - SRD	Throughout the year
40.	Annual group photo session	HP, RG	Feb 2024
41.	Lab coat and Blazers	JS and Ningaraju	August/Sep 2023
42.	Notice Board (SNB, LNB, and IIPC), Departmental staff list	Shadakshari	Throughout the year
43.	Stock verification	Ningaraju	April/May 2024
44.	Student Liaison	Coordinator: AAO Member: TS	Throughout the year
45.	Student ID Cards /Attendance entry	Shivanna & Kumar	Aug/Sep 2023
46.	Retreat for Pharmacy Students	AKT	Nov/Dec 2023
47.	Retreat for Teachers	JS	November 2023/May 2024
48.	Feedback	VJ & SA	April/May 2023
49.	Institute Innovation Cell	Coordinator: RAO Member: DT	Throughout the year
50.	Practice School	Coordinator: ST Member: KSN, PS, MSS, PP	Throughout the year

51.	MOUs-Collate College initiation activities	HP	June 2023 & Jan 2024
Extracurricular activities			
Sl. No.	**Activities**	**Coordinator/s**	**Tentative schedule of meeting/activity**
52.	Selection of Class Representatives, Pharmaceutical society members Annual planning and execution of Student-centered and professional activities including the inauguration of IPS	Coordinator: MPV Member: MSS	July 2023
53.	JASPHARM- College magazine	Coordinator: BS Member: AAP	July 2024
54.	STUMAG- College wall magazine	TSK, LR	At least 3 issues/year
55.	Sports coordinators	HYK, SND	Feb 2024
56.	NSS coordinators	Program Officer- URR Assistant PO - SND	Regular activities and special camp
57.	Cultural & Literary coordinators	PS, MGS, LR	Nov 2023
58.	Annual Day Celebration & Graduation Day	CIA, ASP	March 2024, July 2024
59.	Foreign languages	CIA, PP	Throughout the year
60.	College Calendar & Events	RSC, MPV	June / July 2023

Program committees			
Sl. No.	**Programs**	**Chairperson**	**Member Secretary**
1.	D. Pharm	GVP	MSS
2.	B. Pharm	GVP	MPV
3.	Pharm. D	TMP	CSH
4.	M. Pharm	TMP	RSC
5.	Diploma programs	GVP	RJ
Sl. No	**M. Pharm Program**		**Coordinator**
6.	Pharmaceutics	RAO	
7.	Industrial Pharmacy	ASP	
8.	Pharmaceutical Regulatory Affairs	MPV	
9.	Pharmaceutical Quality Assurance	HKS	
10.	Pharmaceutical Chemistry	HYK	
11.	Pharmaceutical Analysis	AKT	
12.	Pharmacology	SM	
13.	Pharmacognosy	NPK	
14.	Pharmacy Practice	UM	
15.	Pharmaceutical Biotechnology	RG	
Sl. No	**PG Diploma Program**	**Coordinator**	
16.	Pharmacovigilance	CSH	
17.	Medicine & Poison Information	UM	
18.	Clinical Research	SP	
19.	Pharmaceutical Quality Assurance	ST	
20.	Pharmaceutical Regulatory Affairs	MPV	
21.	Medical Devices	MGS	

22.	Intellectual Property Rights	ARR/HYK
23.	Computer Aided Drug Design	SD
24.	Food and Drug Analysis	RJ
25.	Regulatory Toxicology	SBC
26.	Phytopharmaceutical and Industrial Applications	NPK
27.	Quality Control	AKT
Sl. No	**Certificate Course**	**Coordinator**
28.	Pharmaceutical Quality Assurance	HKS
29.	Herbal Drug Standardization	HP
30.	Medicine Information	BRJ
31.	Clinical Research	SP
32.	Global Regulatory Affairs	MPV
33.	Food & Nutraceuticals	RJ
34.	Telemedicine	BRJ

Class and Batch Teachers-2023-24

Class	**Class Teacher**	**Batch Teacher I**	**Batch Teacher II**	**Batch Teacher III**	**Batch Teacher IV**
I B. Pharm	HKS	HKS	SD	CIA	SM
II B. Pharm	PP	PS	RG	PP	ST
III B. Pharm	LR	LR	KSN	AKT	SNM
IV B. Pharm	RJ	RJ	TSK	MSS	MGS
I Pharm. D	BRP	BRP	TSK	-	-
II Pharm. D	CSH	CSH	HP	-	-

III Pharm. D	HYK	HYK	ASP	-	-
IV Pharm. D	UM	UM	RAO	-	-
V Pharm. D	BRJ	BRJ	RSS	-	-
I D. Pharm	ARR	ARR	BS	PP	MSS
II D. Pharm	URR	URR	SND	DT	-

Note:

- All coordinators are informed to adhere the number of meetings to be scheduled for activities.
- Maintain the file for each activity and furnish to the office or regulatory bodies as and when required.
- Updating the minutes of meetings/activities coordinated in the google forms and college website.

List of Holidays

July 29	Sat	Last Day of Muharam	**Nov 30**	Thu	Kanakadasa Jayanthi
Aug 15	Tue	Independence Day	**Dec 25**	Mon	Christmas
Sep 18	Mon	Varasiddhi Vinayaka Vratha	**Jan 15**	Mon	Makar Sankranti
Sep 28	Thu	Id Milad	**Jan 26**	Fri	Republic Day
Oct 2	Mon	Gandhi Jayanthi	**Mar 8**	Fri	Maha Shivaratri
Oct 23	Mon	Ayudha Pooja	**Mar 29**	Fri	Good Friday
Oct 24	Tue	Vijaya Dashami	**Apr 9**	Tue	Ugadi
Oct 28	Sat	Maharshi Valmiki Jayanthi	**Apr 11**	Thu	Ramzan
Nov 1	Wed	Kannada Rajyotsava	**Apr 17**	Wed	Ramanavami
Nov 14	Tue	Bali Padyami			

CONTACT DETAILS OF TEACHING FACULTY

Sl. No	NAME	QUALIFICATION	DESIGNATION	DEPARTMENT
1.	Dr. T.M. Pramod Kumar (TMP)	M.Pharm., Ph.D.	Professor & Principal	Pharmaceutics
2.	Dr. Gurubasavaraj V Pujar (GVP)	M.Pharm., Ph.D.	Professor & Vice Principal	Pharma. Chemistry
3.	Dr. Balamuralidhara V. (BMV)	M.Pharm., Ph.D.	Assoc. Professor & Head	Pharmaceutics
4.	Dr.K. Bangarurajan (KBR)	M.Pharm., Ph.D.	Professor	Pharmaceutics
5.	Dr. Gangadharappa H.V. (HVG)	M.Pharm., Ph.D.	Assoc. Professor	Pharmaceutics
6.	Dr. M.P. Venkatesh (MPV)	M.Pharm., Ph.D.	Assoc. Professor	Pharmaceutics
7.	Dr. Vikas Jain (VJ)	M.Pharm., Ph.D.	Assoc. Professor	Pharmaceutics
8.	Dr. Amit B Patil (ABP)	M.Pharm., Ph.D.	Assoc. Professor	Pharmaceutics
9.	Dr. Hemanth Kumar S (HKS)	M.Pharm., Ph.D.	Asst. Professor	Pharmaceutics
10.	Dr. Osmani Mir Riyaz Ali MahafezAli (RAO)	M.Pharm., Ph.D.	Asst. Professor	Pharmaceutics
11.	Dr. Asha Spandana K M (ASP)	M.Pharm., Ph.D.	Lecturer	Pharmaceutics
12.	Dr. Shailesh T(TS)	M.Pharm., Ph.D.	Lecturer	Pharmaceutics
13.	Ms. Preethi S (PS)	M.Pharm	Lecturer	Pharmaceutics
14.	Ms. Akhila AR (AAR)	M.Pharm	Lecturer	Pharmaceutics
15.	Mr. Trideva Sastri K (TSK)	M.Pharm	Lecturer	Pharmaceutics
16.	Dr.Meghana G S(MGS)	M.Pharm., Ph.D.	Lecturer	Pharmaceutics
17.	Dr. Savitha R S (RSS)	M.Pharm.	Assoc. Professor & Head	Pharmacy Practice
18.	Dr. M. Ramesh (MR)	M.Pharm., Ph.D.	Professor	Pharmacy Practice
19.	Ms. Shilpa Palaksha (SP)	M.Pharm.	Assoc. Professor	Pharmacy Practice
20.	Mr. D.H. P. Gowda (DHP)	M.Sc., PGDCA.	Asst. Professor	Pharmacy Practice
21.	Dr. M Umesh (UM)	Pharm D.	Asst. Professor	Pharmacy Practice
22.	Dr. Sri Harsha Chalasani (CSH)	M.Pharm., Ph.D.	Asst. Professor	Pharmacy Practice
23.	Dr. Jaidev Kumar B R (BRJ)	M.Pharm.	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. Acsah Annie Paul (AAP)	Pharm D	Lecturer	Pharmacy Practice
28.	Dr Siddartha N Durappanavar (SND)	Pharm D	Resident	Pharmacy Practice
29.	Dr. B.M. Gurupadayya (BMG)	M.Pharm., Ph.D.	Professor & Head	Pharma. Chemistry
30.	Dr. R. S. Chandan (RSC)	M.Pharm., Ph.D.	Assoc. Professor	Pharma. Chemistry
31.	Dr. Prashantha Kumar B R (BRP)	M.Pharm., Ph.D.	Assoc. Professor	Pharma. Chemistry
32.	Dr. Anand Kumar Tengli (AKT)	M.Pharm., Ph.D.	Assoc. Professor	Pharma. Chemistry
33.	Dr. H. Yogish Kumar (HYK)	M.Pharm., Ph.D.	Lecturer	Pharma. Chemistry
34.	Dr. Sheshagiri Dixit (SD)	M.Pharm., Ph.D.	Lecturer	Pharma. Chemistry
35.	Dr Rupshee Jain (RJ)	M.Pharm., Ph.D.	Lecturer	Pharma. Chemistry
36.	Mr. Chetan.I.A(CIA)	M.Pharm	Lecturer	Pharma. Chemistry

37.	Dr. Prabitha P (PP)		M.Pharm., Ph.D.	Lecturer	Pharma. Chemistry
38.	Dr. J. Suresh (JS)		M.Pharm., Ph.D.	Professor & Head	Pharmacognosy
39.	Dr. K Mruthunjaya	(KM)	M.Pharm., Ph.D.	Professor	Pharmacognosy
40.	Dr. N Paramakrishnan	(NPK)	M.Pharm., Ph.D.	Asst. Professor	Pharmacognosy
41.	Ms. Haripriya G	(HG)	M Pharm	Lecturer	Pharmacognosy
42.	Dr. Logesh R (LR)		M.Pharm., Ph.D.	Lecturer	Pharmacognosy
43.	Mr. Rajaguru A	(RG)	M.Pharm	Lecturer	Pharmaceutical Biotechnology
44.	Mr. Siva Armugam	(SA)	M.Pharm	Lecturer	Pharmaceutical Biotechnology
45.	Dr. K L Krishna	(KLK)	M.Pharm., Ph.D.	Assoc. Professor& Head	Pharmacology
46.	Dr. S. N. Manjula	(SNM)	M.Pharm., Ph.D.	Professor	Pharmacology
47.	Dr. Saravana Babu C (SB)		M.Pharm., Ph.D.	Professor	Pharmacology
48.	Dr. Seema Mehdi	(SM)	M.Pharm., Ph.D.	Lecturer	Pharmacology
49.	Dr. Nagashree K S	(KSN)	M.Pharm ., Ph.D	Lecturer	Pharmacology
50.	Dr. Dithu Thekkekkara	(DT)	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 2023-24 Class: B. Pharm – V Semester

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				University Exam		Total Marks	Credit points
		Continuous Mode	Sessional Exams		Total	Marks	Duration		
			Marks	Duration					
BP501T	Medicinal Chemistry-II - Theory	10	15	1 Hour	25	75	3 Hours	100	4
BP502T	Industrial Pharmacy I – Theory	10	15	1 Hour	25	75	3 Hours	100	4
BP503T	Pharmacology II – Theory	10	15	1 Hour	25	75	3 Hours	100	4
BP504T	Pharmacognosy & Phytochemistry II –Theory	10	15	1 Hour	25	75	3 Hours	100	4
BP505T	Pharmaceutical Jurisprudence - Theory	10	15	1 Hours	15	75	3 Hours	100	4
BP506P	Industrial Pharmacy I - Practical	5	10	4 Hours	15	35	4 Hours	50	2
BP507P	Pharmacology II - Practical	5	10	4 Hours	15	35	4 Hours	50	2
BP508P	Pharmacognosy & Phytochemistry II Practical	5	10	4 Hours	15	35	4 Hours	50	2
Total		**65**	**105**	**17 Hrs.**	**160**	**480**	**27 Hrs.**	**650**	**26**

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 course including internal assessment. For example, to be declared as PASS and to get grade, the student must 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 should be completed before the commencement of next 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 3. 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	September November	May / June

Question pattern for university theory examinations for 75 marks paper

I. Multiple Choice Questions (MCQs)
(Answer all the questions) = 20 x 01 = 20
I. Long Answers (2 out of 3) = 2 x 10 = 20
II. Short Answers (7 out of 9) = 7 x 05 = 35

Total = 75 marks

Question pattern for university theory examinations for 50 marks paper

I. Long Answers (2 out of 3) = 2 x 10 = 20
II. Short Answers (6 out of 8) = 6 x 05 = 30

Total = 50 marks

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 based on 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 are 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 (*)

	Topics	Hrs
1	**Antihistaminic agents**	
	A. Histamine, receptors and their distribution in the human body	**1**
	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	**2**
	C. H_2-antagonists: Cimetidine*, Famotidine, Ranitidine	**1**
	Gastric Proton pump inhibitors: Omeprazole, Lansoprazole, Rabeprazole,	**1**

Pantoprazole

2 Anti-neoplastic agents

A. Alkylating agents: Meclorethamine*, Cyclophosphamide, Melphalan, Chlorambucil, Busulfan, Thiotepa. **5**

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.

3 Drugs acting on Cardiovascular system

A. Anti-anginal: **3**

- **Vasodilators:** Amyl nitrite, Nitroglycerin*, Pentaerythritol tetranitrate, Isosorbide dinitrite*, Dipyridamole.
- **Calcium channel blockers:** Verapamil, Bepridil hydrochloride, Diltiazem hydrochloride, Nifedipine, Amlodipine, Felodipine, Nicardipine, Nimodipine.

B. Diuretics **3**

- Carbonic anhydrase inhibitors: Acetazolamide*, Methazolamide, Dichlorphenamide.
- Thiazides: Chlorthiazide*, Hydrochlorothiazide, Hydroflumethiazide, Cyclothiazide,
- Loop diuretics: Furosemide*, Bumetanide, Ethacrynic acid.
- Potassium sparing Diuretics: Spironolactone, Triamterene, Amiloride.
- Osmotic Diuretics: Mannitol

C. Anti-hypertensive Agents **4**

- Timolol, Captopril, Lisinopril, Enalapril, Benazepril hydrochloride, Quinapril hydrochloride, Methyldopate hydrochloride,* Clonidine hydrochloride, Guanethidine monosulphate, Guanabenz acetate, Sodium nitroprusside, Diazoxide, Minoxidil, Reserpine, Hydralazine hydrochloride.

D. Anti-arrhythmic Drugs **3**

- Quinidine sulphate, Procainamide hydrochloride, Disopyramide phosphate*, Phenytoin sodium, Lidocaine hydrochloride, Tocainide hydrochloride, Mexiletine hydrochloride, Lorcainide hydrochloride, Amiodarone, Sotalol.

E. Anti-hyperlipidemic agents: Clofibrate, Lovastatin, Cholesteramine and **2**

Cholestipol

F. Coagulant & Anticoagulants: Menadione, Acetomenadione, Warfarin*, Anisindione, clopidogrel. **2**

G. Drugs used in Congestive Heart Failure: Digoxin, Digitoxin, Nesiritide, Bosentan, Tezosentan. **3**

4 Drugs acting on Endocrine system

A. Sex hormones: Testosterone, Nandralone, Progestrones, Oestriol, Oestradiol, Oestrione, Diethyl stilbestrol. **2**

B. Drugs for erectile dysfunction: Sildenafil, Tadalafil. **1**

C. Oral contraceptives: Mifepristone, Norgestril, Levonorgestrol **1**

D. Corticosteroids: Cortisone, Hydrocortisone, Prednisolone, Betamethasone, Dexamethasone **2**

E. Thyroid and antithyroid drugs: L-Thyroxine, L-Thyronine, Propylthiouracil, Methimazole. **2**

F. Antidiabetic agents **4**

- Insulin and its preparations
- Sulfonyl ureas: Tolbutamide*, Chlorpropamide, Glipizide, Glimepiride.
- Biguanides: Metformin.
- Thiazolidinediones: Pioglitazone, Rosiglitazone.
- Meglitinides: Repaglinide, Nateglinide.
- Glucosidase inhibitors: Acrabose, Voglibose.

5 Local Anesthetics: SAR of Local anesthetics **3**

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.*

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) & Dr. Meghana (MGS) 45 Hours (3H / 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	Hours
1.	**Pre-formulation Studies:** Introduction to preformulation, goals and	**2**

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 **2**

b. Chemical Properties: Hydrolysis, oxidation, reduction, racemisation, polymerization. BCS classification of drugs & its significant **2**

Application of preformulation considerations in the development of solid, liquid oral and parenteral dosage forms and its impact on stability of dosage forms.

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. **4**

b. Tablet coating: Types of coating, coating materials, formulation of coating composition, methods of coating, equipment employed and defects in coating. **2**

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. **3**

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**

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 **2**

b. Production procedure, production facilities and controls. **2**

c. Formulation of injections, sterile powders, large volume parenteral and lyophilized products. **2**

d. Containers and closures selection, filling and sealing of ampoules, vials and infusion fluids. Quality control tests of parenteral products. **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. Meghana. G. S (MGS) **60 Hours (4 H/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 disperses 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: Dr. S N Manjula (SNM) **45 Hours (3 Hours/ 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 cardiovascular 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 cardiovascular 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	02

		and Vitamin-D.	
	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 bioassays.	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:

Dr. S N Manjula (SNM) & Dr. Nagashree K S (KSN) **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.

BP 504T. PHARMACOGNOSY AND PHYTOCHEMISTRY II (Theory)

Teacher/s: Dr. Logesh R (LR) **45 Hours (4 Hours/ week)**

Scope: The subject involves the fundamentals of Pharmacognosy like scope, classification of crude drugs, their identification and evaluation, phytochemicals present in them and their medicinal properties.

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

1. to know the techniques in the cultivation and production of crude drugs
2. to know the crude drugs, their uses and chemical nature
3. know the evaluation techniques for the herbal drugs
4. to carry out the microscopic and morphological evaluation of crude drugs

Course Content:

Lecture wise Program:

Chapter No.	Title`	No. of 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.	**4 hrs**
2.	b) Study of utilization of radioactive isotopes in the investigation of Biogenetic studies	**3hrs**
3.	**General introduction, composition, chemistry & chemical classes, bio sources, therapeutic uses and commercial applications of following secondary metabolites:** **Alkaloids:** Vinca, Rauwolfia, Belladonna, Opium, **Phenylpropanoids and Flavonoids:** Lignans, Tea, Ruta	**3 hrs**
4.	**Steroids, Cardiac Glycosides & Triterpenoids:** Liquorice, Dioscorea, Digitalis	**2 hrs**
5.	**Volatile oils:** Mentha, Clove, Cinnamon, Fennel, Coriander, **Tannins:** Catechu, Pterocarpus	**3 hrs**
6.	**Resins:** Benzoin, Guggul, Ginger, Asafoetida, Myrrh, Colophony **Glycosides:** Senna, Aloes, Bitter Almond	**3 hrs**

7.	**Iridoids, Other terpenoids & Naphthaquinones:** Gentian, Artemisia, taxus, carotenoids	**3hrs**
8.	**Isolation, Identification and Analysis of Phytoconstituents** **a) Terpenoids:** Menthol, Citral, Artemisin **b) Glycosides:** Glycyrhetinic acid & Rutin	**3 hrs**
9.	**c) Alkaloids:** Atropine, Quinine, Reserpine, Caffeine **d) Resins:** Podophyllotoxin, Curcumin	**3 hrs**
10.	**Industrial production, estimation and utilization of the following phytoconstituents:** Forskolin, Sennoside, Artemisinin, Diosgenin, Digoxin,	**5 hrs**
11.	Atropine, Podophyllotoxin, Caffeine, Taxol, Vincristine and Vinblastine	**5 hrs**
12.	**Basics of Phytochemistry** Modern methods of extraction, application of latest techniques like Spectroscopy in the isolation, purification and identification of crude drugs.	**4 hrs**
13.	Chromatography and electrophoresis in the isolation, purification and identification of crude drugs	**4 hrs**

Theory Sessional examination Ssyllabus

Sessional No.	**Syllabus Chapters no.**
I	1 to 8
II	9 to 13

BP408 P. PHARMACOGNOSY AND PHYTOCHEMISTRY II (Practical)

Teacher/s: Dr. Logesh R (LR) **60 Hours (4 Hrs/ week)**

1. Analysis of crude drugs by chemical tests: (i)Tragacanth (ii) Acacia (iii)Agar (iv)

Gelatin (v) starch (vi) Honey (vii) Castor oil

2. Determination of stomatal number and index

3. Determination of vein islet number, vein islet termination and palisade ratio. 4. Determination of size of starch grains, calcium oxalate crystals by eye piece micrometer

5. Determination of Fiber length and width

6. Determination of number of starch grains by Lycopodium spore method

7. Determination of Ash value

8. Determination of Extractive values of crude drugs

9. Determination of moisture content of crude drugs

10. Determination of swelling index and foaming

Recommended Books: (Latest Editions)

1. W.C.Evans, Trease and Evans Pharmacognosy, 16th edition, W.B. Sounders & Co.,

London, 2009.

2. Tyler, V.E., Brady, L.R. and Robbers, J.E., Pharmacognosy, 9th Edn., Lea and Febiger, Philadelphia, 1988.

3. Text Book of Pharmacognosy by T.E. Wallis

4. Mohammad Ali. Pharmacognosy and Phytochemistry, CBS Publishers & Distribution, New Delhi.

5. Text book of Pharmacognosy by C.K. Kokate, Purohit, Gokhlae (2007), 37th Edition, Nirali Prakashan, New Delhi.

6. Herbal drug industry by R.D. Choudhary (1996), Ist Edn, Eastern Publisher, New Delhi.

7. Essentials of Pharmacognosy, Dr.SH.Ansari, IInd edition, Birla publications, New Delhi, 2007

8. Practical Pharmacognosy: C.K. Kokate, Purohit, Gokhlae

9. Anatomy of Crude Drugs by M.A. Iyengar

BP505T. Pharmaceutical Jurisprudence (Theory)

Teacher/s: Dr. Shailesh T (ST) & Dr. Asha Spandana (ASP) 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:
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

Lecturer wise program

Chapter No.	Title`	No. of hours
1.	**Drugs and Cosmetics Act, 1940 and its rules 1945:** Objectives, Definitions, Legal definitions of schedules to the Act and Rules Import of drugs - Classes of drugs and cosmetics prohibited from import, Import under license or permit. Offences and penalties**.** Manufacture of drugs - Prohibition of manufacture and sale of certain drugs, 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.	**10 hours**
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) 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. Administration of the Act and Rules - Drugs Technical Advisory Board, Central drugs Laboratory, Drugs Consultative Committee, Government drug analysts, licensing authorities, controlling authorities, Drugs Inspectors.	**10 hours**
3.	**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.	**3 hours**
4.	**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.	**3 hours**
5.	**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	**4 hours**

	of poppy straw, manufacture, sale and export of opium, Offences and Penalties	
6.	**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	**3 hours**
7.	**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.	**2 hours**
8.	**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 hours**
9.	**Pharmaceutical Legislations:** A brief review, Introduction, Study of drugs enquiry committee, Health survey and development committee, Hathi committee and Mudaliar committee.	**2 hours**
10.	**Code of Pharmaceutical ethics** Definition, Pharmacist in relation to his job, trade, medical profession and his profession, Pharmacist's oath.	**2 hours**
11.	**Medical Termination of Pregnancy Act**	**1 hour**
12.	**Right to Information Act**	**1 hour**
13.	**Introduction to Intellectual Property Rights (IPR)**	**1 hour**

Theory Sessional examination syllabus

Sessional No.	**Syllabus Chapters no.**
I	1-3
II	4-13

Recommended books: (Latest Edition)

1. Forensic Pharmacy by B. Suresh
2. Textbook of Forensic Pharmacy by B. M. Mithal
3. Handbook of drug law-by M. L. Mehra
4. A textbook 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

Sri ShivarathreeshwaraNagara, Mysore-570015

*CLASS TIME TABLE – 2023-24

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	CAP DHP	Pharmacognosy & Phytochemistry-II Logesh		Pharmacology II SNM	Medicinal Chemistry- II AKT		Pharmacognosy & Phytochemistry-II Logesh	Pharmaceutical Jurisprudence ST		----------	
Tuesday	Pharmaceutical Jurisprudence ST(Tu)	Industrial Pharmacy – I (Tu) MPV		Medicinal Chemistry- II (Tu) AKT	Pharmacology II SNM		←-------- Industrial Pharmacy - I--- ←----------Pharmacology II ---------- ←-------------Pharmacognosy --------			----------MGS—Batch – I----→ ----------SNM-Batch II-------→ ----------Logesh-Batch III-------→	
Wednesday	----------	Medicinal Chemistry- II AKT		Industrial Pharmacy - I MPV	Pharmacology II SNM		←---Industrial Pharmacy - I---- ←----------Pharmacology II ---------- ←-------------Pharmacognosy ------			----------MGS-Batch - II-----→ ---------- SNM---Batch III-----→ ----------Logesh-Batch IV--→	
Thursday	----------	Medicinal Chemistry- II AKT		Pharmacognosy & Phytochemistry-II Logesh	Pharmaceutical Jurisprudence ASP		←-------- Industrial Pharmacy - I---- ←----------Pharmacology II ---------- ←-------------Pharmacognosy --------			----------MGS—Batch - III----------→ ---------- --KSN—Batch IV----------→ ----------Logesh-Batch I----------→	
Friday	----------	--------		Pharmacology II (Tu) SNM	Industrial Pharmacy - I MGS		←--------Industrial Pharmacy - I---- ←----------Pharmacology II ---------- ←-------------Pharmacognosy --------			----------MGS—Batch – IV-----→ ---------- KSN------Batch I------→ ----------Logesh-Batch II---------→	
Saturday	Pharmacognosy & Phytochemistry-II (Tu) Logesh	Industrial Pharmacy - I MGS		Pharmaceutical Jurisprudence ASP	----------		----------				

*** Effective from: 10th July - 2023**

Note: 1. No tea break for practicals

Time table Coordinator

Principal

PRINCIPAL
JSS College of Pharmacy
Sri Shivarathreeshwara Nagar
MYSORE-570 015

Copy: SNB/LNB/SCF/e-copy-Teachers/ Office incharge-Time table / Time table Coordinator
OPC8.1SOP(2)F(1)

OPC8.1SOP(2)F(1)

(Dr. T. M. Pramod Kumar)
Principal
JSS CP, Mysuru

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	←--- Physical Pharmaceutics ------ ←----Pharm.Organic Chemistry-II -- CAP ←----- Pharm.Engineering ←---MicroB -------			-------Batch – I---------PS------→ ------Batch – III-----HYK-------→ --Batch – IV-----ST---------→ ------Batch II - -X----------→						Pharmaceutical Microbiology RG	Pharmaceutical Engineering RAO

Tuesday	----------	----------		----------			Physical Pharmaceutics PS	Pharmaceutical Microbiology RG		Physical Pharmaceutics (Tu) PS	
Wednesday	----------	----------		----------	----------		Pharm. Organic Chemistry II PP	Physical Pharmaceutics PS		**Pharmaceutical Engineering** ST	**Pharmaceutical Engineering (Tu)** RAO

Thursday	←--- Physical Pharmaceutics ---------- ←---------- Microbiology---------- ←----------Pha. Org.Chem-II---------- ←-----Pharm. Engineering ---------- ←----------Pharm.Organic Chemistry-II -- ←-----Pharm.Engineering ---------- ←--- Physical Pharmaceutics ---------- ←---------- Microbiology---------- -------- ←-Pha.Org.Chem-II ------- ←-Pharm. Engg----- ←--- Physical Pharmaceutics ---------- ←---------- Microbiology---------- ←----Pharm.Organic Chemistry-II -- ←-----Pharm.Engineering ---------- ←---------- Microbiology---------- ←----Pharm.Organic Chemistry-II -- ←-----Pharm.Engineering ----------		-------Batch –II---------TS------→ ------Batch – III-------X---------→ ----------Batch – IV-----SRD--→ ----------Batch – I-----ST-----→ -------Batch – III-------PS-------→ ------Batch – IV--------X--------→ ----------Batch – I-----PP---→ ----------Batch – II-----RAO-----→ -------Batch – IV-------TS-------→ -Batch –----X----→------ ----------Batch – II-----PP----→ ----------Batch – III-----AS-----→		Pharm. Organic Chemistry II PP Pharm. Organic Chemistry II(Tu) PP	**Pharmaceutical Engineering ST** Physical Pharmaceutics PS		Microbiology RG Pharm. Organic **Chemistry II PP**	Ph Micro Bio (Tu) RG ----------