

JSS Academy of Higher Education & Research

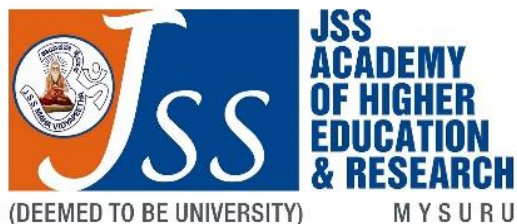
JSS College of Pharmacy

Sri Shivarathreshwara Nagara, Mysuru-570015

Ph: 0821-2548353, Fax: 0821-2548359, Email: jsscpsy@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 – I 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 2023-24 (B. Pharm – I Semester)

1. Commencement of Classes

B. Pharm – I Semester - 10th July 2023

2. Sessional Examination Schedule

I	II
06 th September	15 th 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
I Year I semester	Dr. Hemanth Kumar S (HKS)	I	Dr. Hemanth Kumar S (HKS)
		II	Dr. Sheshagiri Dixit (SD)
		III	Mr. Chetan I A (CIA)
		IV	Dr. Seema Mehdi (SM)

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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> As required
12.	Academic Council Board (ACB) <ul style="list-style-type: none"> Student Progression (Advanced/ Medium/ Slow learners) Mentors Diary- Student profile 	Class teachers and Program Coordinators	<ul style="list-style-type: none"> After each sessional exam Regular monitoring of Mentee
13.	Ethics committee	<ul style="list-style-type: none"> IAEC-SBC IEC-CSH 	<ul style="list-style-type: none"> Twice a year
14.	Class Timetable committee	Coordinator: VJ Member: BRP, NPK, URR, DT	<ul style="list-style-type: none"> Twice a year (June & Nov 2023)
15.	Women's cell/Prevention of Sexual Harassment Cell/Internal Complaints committee (ICC)	SNM & committee members	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> • Compendium- August 23 • Regular activity under each SDG
30.	Course handouts/ Teachers' diary/ Student Handbook/Faculty Handbook.	NPK & HYK	<ul style="list-style-type: none"> • July/ August 2023

31.	National Pharmacy Week (NPW) & Pharmacists Day	Coordinator: UM & IPA office bearers	<ul style="list-style-type: none"> Nov-Dec 2023
32.	Alumni association	Coordinator: HVG Member: SM	<ul style="list-style-type: none"> August/September 2023
33.	Herbal and College Garden	NPK	<ul style="list-style-type: none"> Regular monitoring
34.	ISO 9001:2015	Coordinator: SNM Member: SM	<ul style="list-style-type: none"> 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	KRSCM
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.IA(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 – I Semester

1. Course Details

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP101T	Human Anatomy and Physiology I– Theory	3	1	4
BP102T	Pharmaceutical Analysis I – (Theory)	3	1	4
BP103T	Pharmaceutics I - (Theory)	3	1	4
BP104T	Pharmaceutical Inorganic Chemistry – Theory	3	1	4
BP105T	Communication skills -Theory*	2	-	2
BP106RBT BP106RMT	Remedial Biology/ Remedial Mathematics -Theory*	2	-	2
BP107P	Human Anatomy and Physiology I – Practical	4	-	2
BP108P	Pharmaceutical Analysis I - Practical	4	-	2
BP109P	Pharmaceutics I - Practical	4	-	2
BP110P	Pharmaceutical Inorganic Chemistry - Practical	4	-	2
BP111P	Communication skills - Practical*	2	-	1
BP112RBP	Remedial Biology – Practical	2	-	1
Total		32/34[#]/36[*]	4	27/29[#]/30[*]

Applicable ONLY for the students who have studied Mathematics / Physics / Chemistry at HSC and appearing for Remedial Biology (RB) course.

\$ Applicable ONLY for the students who have studied Physics / Chemistry / Botany / Zoology at HSC and appearing for Remedial Mathematics (RM) course.

* Non University Examination (NUE)

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

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-I

Course code	Name of the course	Internal Assessment				University Exam		Total Marks	Credit points
		Continu-ous Mode	Sessional Exams		Total	Marks	Duration		
			Marks	Durati-on					
BP101T	Human Anatomy and Physiology I – Theory	10	15	1 Hour	25	75	3 Hrs	100	4
BP102T	Pharmaceut ical Analysis I – (Theory)	10	15	1 Hour	25	75	3 Hrs	100	4
BP103T	Pharmaceut ics I - (Theory)	10	15	1 Hour	25	75	3 Hrs	100	4
BP104T	Pharmace utical	10	15	1 Hour	25	75	3 Hrs	100	4

	Inorganic Chemistry – Theory								
BP105T	Communication skills -Theory*	5	10	1 Hours	15	35	1.5 Hrs	50	2
BP106R BT BP106R MT	Remedial Biology/ Remedial Mathematics -Theory*	5	10	1 Hours	15	35	1.5 Hrs	50	2
BP107P	Human Anatomy and Physiology I – Practical	5	10	4 Hours	15	35	4 Hrs	50	2
BP108P	Pharmaceutical Analysis I - Practical	5	10	4 Hours	15	35	4 Hrs	50	2
BP109P	Pharmaceutics I - Practical	5	10	4 Hours	15	35	4 Hrs	50	2
BP110P	Pharmaceutical Inorganic Chemistry - Practical	5	10	4 Hours	15	35	4 Hrs	50	2
BP111P	Communication skills - Practical*	5	5	2 Hours	10	15	2 Hrs	25	1
BP112R BP	Remedial Biology – Practical	5	5	2 Hours	10	15	2 Hrs	25	1
	Total	70/75^{\$}/ 80[#]	115/125^{\$}/ 130[#]	23/24^{\$}/ 26[#] Hrs.	185/200^{\$}/ 210[#]	490/525^{\$}/ 540[#]	31/33^{\$}/35[#] Hrs.	675/725^{\$}/ 750[#]	30

Applicable ONLY for the students studied Mathematics / Physics / Chemistry at HSC and appearing for Remedial Biology (RB) course.

\$ Applicable ONLY for the students studied Physics / Chemistry / Botany / Zoology at HSC and appearing for Remedial Mathematics (RM) course.

* Non University Examination (NUE)

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.

BP101T- HUMAN ANATOMY AND PHYSIOLOGY-I (THEORY)

Teacher/s: Dr. Seeema Mehdi (SM)

45 Hours (3 Hrs/ week)

Scope: This subject is designed to impart fundamental knowledge on the structure and functions of the various systems of the human body. It also helps in understanding both homeostatic mechanisms. The subject provides the basic knowledge required to understand the various disciplines of pharmacy.

Objectives: Upon completion of this course the student should be able to

- Explain the gross morphology, structure and functions of various organs of the human body.
- Describe the various homeostatic mechanisms and their imbalances.
- Identify the various tissues and organs of different systems of human body.
- Perform the various experiments related to special senses and nervous system.
- Appreciate coordinated working pattern of different organs of each system

Lecture wise programme:

	Topic	Hrs
1.	Introduction to human body Definition and scope of anatomy and physiology, levels of structural organization and body systems, basic life processes, homeostasis, basic anatomical terminology.	03
2.	Cellular level of organization Structure and functions of cell, transport across cell membrane, cell division, cell junctions. General principles of cell communication, intracellular signaling pathway activation by extracellular signal molecule, Forms of intracellular signaling: a) Contact-dependent b) Paracrine c) Synaptic d) Endocrine	04
3.	Tissue level of organization Classification of tissues, structure, location and functions of epithelial, muscular and nervous and connective tissue	03
4.	Integumentary system Structure and functions of skin	02
5.	Skeletal system Divisions of skeletal system, types of bone, salient features and functions of bones of axial and appendicular skeletal system Organization of skeletal muscle, physiology of muscle contraction,	06

neuromuscular junction

6. **Joints** **02**
Structural and functional classification, types of movements
7. **Body fluids and blood** **05**
Body fluids, composition and functions of blood, hemopoiesis, formation of hemoglobin, anemia, mechanisms of coagulation, blood grouping, Rh factors, transfusion, its significance and disorders of blood, Reticulo endothelial system
8. **Lymphatic system** **05**
Lymphatic organs and tissues, lymphatic vessels, lymph circulation and functions of lymphatic system
9. **Peripheral nervous system** **04**
Classification of peripheral nervous system: Structure and functions of sympathetic and parasympathetic nervous system.
Origin and functions of spinal and cranial nerves.
10. **Special senses** **04**
Structure and function of eye, ear, nose and tongue and their disorders
11. **Cardiovascular system** **07**
Heart – anatomy of heart, blood circulation, blood vessels, structure and functions of artery, vein and capillaries, elements of conduction system of heart and heart beat, its regulation by autonomic nervous system, cardiac output, cardiac cycle. Regulation of blood pressure, pulse, electrocardiogram and disorders of heart.

Theory Sessional examination syllabus

Sessional No.	Syllabus
	Chapters no.
I	1 to 7
II	8 to 11

BP107P-HUMAN ANATOMY AND PHYSIOLOGY-I (PRACTICALS)

Teacher: Dr. Seeema Mehdi (SM) & Dr. Dittu

60 Hours (4 Hrs/week)

Title of Experiments

1. Study of compound microscope.
2. Microscopic study of epithelial and connective tissue
3. Microscopic study of muscular and nervous tissue
4. Identification of axial bones
5. Identification of appendicular bones
6. Introduction to hemocytometry.
7. Enumeration of white blood cell (WBC) count
8. Enumeration of total red blood corpuscles (RBC) count
9. Determination of bleeding time
10. Determination of clotting time
11. Estimation of hemoglobin content
12. Determination of blood group.
13. Determination of erythrocyte sedimentation rate (ESR).
14. Determination of heart rate and pulse rate.
15. Recording of blood pressure.

Recommended Books (Latest Editions)

1. Essentials of Medical Physiology by K. Sembulingam and P. Sembulingam. Jaypee
2. brothers medical publishers, New Delhi.
3. Anatomy and Physiology in Health and Illness by Kathleen J.W. Wilson, Churchill
4. Livingstone, New York
5. Physiological basis of Medical Practice-Best and Tailor. Williams & Wilkins
6. Co,Riverview,MI USA
7. Text book of Medical Physiology- Arthur C,Guyton andJohn.E. Hall. Miamisburg, OH,
8. U.S.A.
9. Principles of Anatomy and Physiology by Tortora Grabowski. Palmetto, GA, U.S.A.

10. Textbook of Human Histology by Inderbir Singh, Jaypee brother's medical publishers,
11. New Delhi.
12. Textbook of Practical Physiology by C.L. Ghai, Jaypee brother's medical publishers,
13. New Delhi.
14. Practical workbook of Human Physiology by K. Srinageswari and Rajeev Sharma,
15. Jaypee brother's medical publishers, New Delhi.

Reference Books (Latest Editions)

1. Physiological basis of Medical Practice-Best and Tailor. Williams & Wilkins Co,
Riverview, MI USA
2. Text book of Medical Physiology- Arthur C, Guyton and John. E. Hall. Miamisburg, OH,
U.S.A.
3. Human Physiology (vol 1 and 2) by Dr. C.C. Chatterrje ,Academic Publishers Kolkata

BP102T- PHARMACEUTICAL ANALYSIS (THEORY)

Teacher/s: Dr. Sheshagiri Dixit (SRD)

45 Hours (3 Hrs/ week)

Scope: This course deals with the fundamentals of analytical chemistry and principles of electrochemical analysis of drugs

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

- understand the principles of volumetric and electro chemical analysis
- carryout various volumetric and electrochemical titrations
- develop analytical skills

Course Materials

1. A.H. Beckett & J.B. Stenlake's, Practical Pharmaceutical Chemistry Vol I & II, Stahlone Press of University of London, 4th edition.
2. A.I. Vogel, Text Book of Quantitative Inorganic analysis
3. P. Gundu Rao, Inorganic Pharmaceutical Chemistry, 3rd Edition
4. Bentley and Driver's Textbook of Pharmaceutical Chemistry
5. John H. Kennedy, Analytical chemistry principles
6. Indian Pharmacopoeia.

Lecture wise Programme

TOPICS

- 1. Pharmaceutical analysis:** Definition and scope
 - i. Different techniques of analysis 02
 - ii. Methods of expressing concentration 02
 - iii. Primary and secondary standards 02
 - iv. Preparation and standardization of various molar and normal solutions- Oxalic acid, sodium hydroxide, hydrochloric acid, sodium thiosulphate, sulphuric acid, potassium permanganate and ceric 02

ammonium sulphate

2. **Errors:** Sources of errors, types of errors, methods of minimizing errors, accuracy, precision and significant figures 02
3. **Acid base titration:** Theories of acid base indicators, classification of acid base titrations and theory involved in titrations of strong, weak, and very weak acids and bases, neutralization curves 06
4. **Non aqueous titration:** Solvents, acidimetry and alkalimetry titration and estimation of Sodium benzoate and Ephedrine HCl 04
5. **Precipitation titrations:** Mohrs method, Volhard's, Modified Volhard's, Fajans method, estimation of sodium chloride. 04
6. **Complexometric titration:** Classification, metal ion indicators, masking and demasking reagents, estimation of Magnesium sulphate, and calcium gluconate 03
7. **Gravimetry:** Principle and steps involved in gravimetric analysis. Purity of the precipitate: co-precipitation and post precipitation, Estimation of barium sulphate. 03
Basic Principles, methods and application of diazotisation titration.

Redox titrations

8. Concepts of oxidation and reduction 03
9. Types of redox titrations (Principles and applications) 05
Cerimetry, Iodimetry, Iodometry, Bromatometry, Dichrometry, Titration with potassium iodate

Electrochemical methods of analysis

10. **Conductometry** - Introduction, Conductivity cell, Conductometric titrations, applications. 02
11. **Potentiometry** - Electrochemical cell, construction and working of reference (Standard hydrogen, silver chloride electrode and calomel electrode) and indicator electrodes (metal electrodes and glass electrode), methods to determine end point of potentiometric titration and applications. 03
12. **Polarography** - Principle, Ilkovic equation, construction and working of 02

dropping mercury electrode and rotating platinum electrode, applications

Theory Internal assessment syllabus

Internal assessment No.	Syllabus
	Chapters no.
I	1 – 4, 6
II	5, 7 - 12

BP108P - PHARMACEUTICAL ANALYSIS (PRACTICALS)

Teacher/s: Mr. Hemanth/Kalyani, Ruby/Monika and Erica 60 Hours (4 Hrs/ week)

General Requirements: Graph paper, pencil, Scale, Scissors, Butter Paper,

Observation Book-75 pages (plain)

Gum Tube or stick, Matchbox, Laboratory Napkin

List of Experiments:

I Limit Test of the following

- (1) Chloride
- (2) Sulphate
- (3) Iron
- (4) Arsenic

II Preparation and standardization of

- (1) Sodium hydroxide
- (2) Sulphuric acid
- (3) Sodium thiosulfate
- (4) Potassium permanganate
- (5) Ceric ammonium sulphate

III Assay of the following compounds along with Standardization of Titrant

- (1) Ammonium chloride by acid base titration
- (2) Ferrous sulphate by Cerimetry
- (3) Copper sulphate by Iodometry
- (4) Calcium gluconate by complexometry
- (5) Hydrogen peroxide by Permanganometry

(6) Sodium benzoate by non-aqueous titration

(7) Sodium Chloride by precipitation titration

IV Determination of Normality by electro-analytical methods

(1) Conductometric titration of strong acid against strong base

(2) Conductometric titration of strong acid and weak acid against strong base

(3) Potentiometric titration of strong acid against strong base

Recommended Books: (Latest Editions)

1. A.H. Beckett & J.B. Stenlake's, Practical Pharmaceutical Chemistry Vol I & II, Stahlone Press of University of London

2. A.I. Vogel, Text Book of Quantitative Inorganic analysis

3. P. Gundu Rao, Inorganic Pharmaceutical Chemistry

4. Bentley and Driver's Textbook of Pharmaceutical Chemistry

5. John H. Kennedy, Analytical chemistry principles

6. Indian Pharmacopoeia

BP103T – PHARMACEUTICS -I (THEORY)

Teacher/s: Dr. Hemanth Kumar S (HKS) & Dr. T M Pramod Kumar 45 Hours (3 Hrs/week)

Scope: This course is designed to impart a fundamental knowledge on the preparatory pharmacy with art and science of preparing the different conventional dosage forms.

Objectives: Upon completion of this course the student should be able to:

- Know the history of profession of pharmacy
- Understand the basics of different dosage forms, pharmaceutical incompatibilities and pharmaceutical calculations
- Understand the professional way of handling the prescription
- Preparation of various conventional dosage forms

Course Content:

1. Historical background and development of profession of pharmacy: 04 Hours

History of profession of Pharmacy in India in relation to pharmacy education, industry and organization, Pharmacy as a career, Pharmacopoeias: Introduction to IP, BP, USP and Extra Pharmacopoeia.

2. Dosage forms: Introduction to dosage forms, classification and definitions 02 Hours

3. Prescription: Definition, Parts of prescription, handling of Prescription and Errors in prescription.

Posology: Definition, Factors affecting posology. Pediatric dose calculations based on age, body weight and body surface area. 04 Hours

4. Pharmaceutical calculations: Weights and measures – Imperial & Metric system, Calculations involving percentage solutions, alligation, proof spirit and isotonic solutions based on freezing point and molecular weight. **04 Hours**

5. Powders: Definition, classification, advantages and disadvantages, Simple & compound powders – official preparations, dusting powders, effervescent, efflorescent and hygroscopic powders, eutectic mixtures. Geometric dilutions **04 Hours**

6. Liquid dosage forms: Advantages & Disadvantages of liquid dosage forms. Excipients used in formulation of liquid dosage forms. Solubility enhancement techniques

02 Hours

a. Monophasic liquids: Definitions and preparations of Gargles, Mouthwashes, Throat Paint, Eardrops, Nasal drops, Enemas, Syrups, Elixirs, Liniments and Lotions. **02 Hours**

b. Biphasic liquids:

Suspensions: Definition, advantages and disadvantages, classifications.

Preparation of suspensions; Flocculated and Deflocculated suspension, stability problems and methods to overcome. **04 Hours**

Emulsions: Definition, classification, emulsifying agent, test for the identification of type of Emulsion, Methods of preparation & stability problems and methods to overcome.

04 Hours

7. Semisolid dosage forms: Definitions, classification, mechanisms and factors influencing dermal penetration of drugs. Preparation of ointments, pastes, creams and gels. Excipients used in semi solid dosage forms. Evaluation of semi solid dosages forms **07 Hours**

Recommended Books: (Latest Editions)

1. H.C. Ansel et al., Pharmaceutical Dosage Form and Drug Delivery System, Lippincott Williams and Walkins, New Delhi.
2. Carter S.J., Cooper and Gunn's-Dispensing for Pharmaceutical Students, CBS publishers, New Delhi.
3. M.E. Aulton, Pharmaceutics, The Science & Dosage Form Design, Churchill Livingstone, Edinburgh.
4. Indian pharmacopoeia.
5. British pharmacopoeia.
6. Lachmann. Theory and Practice of Industrial Pharmacy, Lea & Febiger Publisher, The University of Michigan.
7. Alfonso R. Gennaro Remington. The Science and Practice of Pharmacy, Lippincott Williams, New Delhi.
8. Carter S.J., Cooper and Gunn's. Tutorial Pharmacy, CBS Publications, New Delhi.
9. E.A. Rawlins, Bentley's Text Book of Pharmaceutics, English Language Book Society,

Elsevier Health Sciences, USA.

10. Isaac Ghebre Sellassie: Pharmaceutical Pelletization Technology, Marcel Dekker, INC, New York.
11. Dilip M. Parikh: Handbook of Pharmaceutical Granulation Technology, Marcel Dekker, INC, New York.
12. Francoise Nieloud and Gilberte Marti-Mestres: Pharmaceutical Emulsions and Suspensions, Marcel Dekker, INC, New York.

Theory Internal assessment syllabus

Internal assessment No.	Syllabus
	Chapters no.
I	1 – 6a
II	6b - 9

BP109P - PHARMACEUTICS I (PRACTICALS)

Teacher/s: Dr. Hemanth Kumar S (HKS) & Ms. Preethi S (PS)

60 Hours (4 Hrs/week)

1. Syrups

- a) Syrup IP'66
- b) Compound syrup of Ferrous Phosphate BPC'68

2. Elixirs

- a) Piperazine Citrate elixir
- b) Paracetamol pediatric elixir

3. Linctus

- a) Terpin Hydrate Linctus IP'66
- b) Iodine Throat Paint (Mandles Paint)

4. Solutions

- a) Strong solution of ammonium acetate
- b) Cresol with soap solution
- c) Lugol's solution

5. Suspensions

- a) Calamine lotion
- b) Magnesium Hydroxide mixture
- c) Aluminium Hydroxide gel

6. Emulsions

- a) Turpentine Liniment
- b) Liquid paraffin emulsion

7. Powders and Granules

- a) ORS powder (WHO)
- b) Effervescent granules

c) Dusting powder

d) Divded powders

8. Suppositories

a) Glycero gelatin suppository

b) Coca butter suppository

c) Zinc Oxide suppository

8. Semisolids

a) Sulphur ointment

b) Non staining-iodine ointment with methyl salicylate

c) Carbopal gel

9. Gargles and Mouthwashes

a) Iodine gargle

b) Chlorhexidine mouthwash

BP104T - PHARMACEUTICAL INORGANIC CHEMISTRY (THEORY)

Teacher/s: Mr. Chetan I A (CIA)

45 Hrs (3 Hrs/week)

Scope: This subject deals with the monographs of inorganic drugs and pharmaceuticals.

Objectives: Upon completion of course student shall be able to

- know the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals
- understand the medicinal and pharmaceutical importance of inorganic compounds

Lecture wise Programme:

	Topic	Hrs
1.	Impurities in pharmaceutical substances: History of Pharmacopoeia, Sources and types of impurities, principle involved in the limit test for Chloride, Sulphate, Iron, Arsenic, Lead and Heavy metals, modified limit test for Chloride and Sulphate General methods of preparation, assay for the compounds superscripted with asterisk (*), properties and medicinal uses of inorganic compounds belonging to the following classes	10
2.	Acids, Bases and Buffers: Buffer equations and buffer capacity in general, buffers in pharmaceutical systems, preparation, stability, buffered isotonic solutions, measurements of tonicity, calculations and methods of adjusting isotonicity. Major extra and intracellular electrolytes: Functions of major physiological ions, Electrolytes used in the	03

replacement therapy: Sodium chloride*, Potassium chloride, Calcium gluconate* and Oral Rehydration Salt (ORS), Physiological acid base balance.	04
Dental products: Dentifrices, role of fluoride in the treatment of dental caries, Desensitizing agents, Calcium carbonate, Sodium fluoride, and Zinc eugenol cement.	03
3. Gastrointestinal agents	
a. Acidifies: Ammonium chloride* and Dil. HCl	01
b. Antacid: Ideal properties of antacids, combinations of antacids, Sodium Bicarbonate*, Aluminum hydroxide gel, Magnesium hydroxide mixture	03 02
c. Cathartics: Magnesium sulphate, Sodium orthophosphate, Kaolin and Bentonite	
d. Antimicrobials: Mechanism, classification. Potassium permanganate, Boric acid, Hydrogen peroxide*, Chlorinated lime*, Iodine and its preparations	04
4. Miscellaneous compounds	
a. Expectorants: Potassium iodide, Ammonium chloride*.	02
b. Emetics: Copper sulphate*, Sodium potassium tartarate	02
c. Haematinics: Ferrous sulphate*, Ferrous gluconate	01
d. Poison and Antidote: Sodium thiosulphate*, Activated charcoal, Sodium nitrite	02
e. Astringents: Zinc Sulphate, Potash Alum	01
5. Radiopharmaceuticals	
Radio activity, Measurement of radioactivity, Properties of α , β , γ radiations, Half life, radio isotopes and study of radio isotopes - Sodium iodide I ¹²¹ , Storage conditions, precautions & pharmaceutical application of radioactive substances.	07

Recommended Books (Latest Editions)

1. A.H. Beckett & J.B. Stenlake's, Practical Pharmaceutical Chemistry Vol I & II, Stahlone Press of University of London, 4th edition.
2. A.I. Vogel, Text Book of Quantitative Inorganic analysis
3. P. Gundu Rao, Inorganic Pharmaceutical Chemistry, 3rd Edition
4. M.L Schroff, Inorganic Pharmaceutical Chemistry
5. Bentley and Driver's Textbook of Pharmaceutical Chemistry
6. Anand & Chatwal, Inorganic Pharmaceutical Chemistry
7. Indian Pharmacopoeia

Theory Sessional examination syllabus

Sessional No.	Syllabus Chapter No.
I	1 to 3c
II	3d to 5

BP110P - PHARMACEUTICAL INORGANIC CHEMISTRY (PRACTICAL)

Teacher/s: Mr. Chetan I A (CIA) & Ms. Samyukta

60 Hours (4 Hrs / Week)

I Limit tests for following ions

1. Limit test for Chlorides and Sulphates
2. Modified limit test for Chlorides and Sulphates
3. Limit test for Iron
4. Limit test for Heavy metals
5. Limit test for Lead
6. Limit test for Arsenic

II Identification test

1. Magnesium hydroxide
2. Ferrous sulphate
3. Sodium bicarbonate
4. Calcium gluconate
5. Copper sulphate

III Test for purity

1. Swelling power of Bentonite
2. Neutralizing capacity of aluminum hydroxide gel
3. Determination of potassium iodate and iodine in potassium Iodide

IV Preparation of inorganic pharmaceuticals

1. Boric acid
2. Potash alum
3. Ferrous sulphate

BP105T - COMMUNICATION SKILLS (THEORY)

Teacher/s: Arivu Team

30 Hrs (2 Hrs/week)

Scope: This course will prepare the young pharmacy student to interact effectively with doctors, nurses, dentists, physiotherapists and other health workers. At the end of this course the student will get the soft skills set to work cohesively with the team as a team player and will add value to the pharmaceutical business.

Objectives:

Upon completion of the course the student shall be able to

1. understand the behavioral needs for a Pharmacist to function effectively in the areas of pharmaceutical operation
2. communicate effectively (Verbal and Non Verbal)
3. effectively manage the team as a team player
4. develop interview skills
5. develop Leadership qualities and essentials

Lecture wise Programme:

	Topic	Hrs
1.	Communication Skills Introduction, Definition, The Importance of Communication The Communication Process – Source, Message, Encoding, Channel, Decoding, Receiver, Feedback, Context	03
2.	Barriers to communication Physiological Barriers, Physical Barriers, Cultural Barriers, Language Barriers, Gender Barriers, Interpersonal Barriers, Psychological Barriers, Emotional barriers	02
3.	Perspectives in Communication Introduction, Visual Perception, Language, Other factors affecting our perspective - Past Experiences, Prejudices, Feelings, Environment	03
4.	Elements of Communication Introduction, Face to Face Communication - Tone of Voice, Body Language (Non-verbal communication), Verbal Communication, Physical Communication	05
5.	Communication Styles Introduction, The Communication Styles Matrix with example for each -Direct Communication Style, Spirited Communication Style, Systematic Communication Style, Considerate Communication Style	02
6.	Basic Listening Skills Introduction, Self-Awareness, Active Listening, Becoming an Active Listener, Listening in Difficult Situations	03

7.	Effective Written Communication Introduction, When and When Not to Use Written Communication - Complexity of the Topic, Amount of Discussion' Required, Shades of Meaning, Formal Communication Writing Effectively: Subject Lines, Put the Main Point First, Know Your audience, Organization of the Message	04
8.	Interview Skills Purpose of an interview, Do's and Dont's of an interview	02
9.	Giving Presentations Dealing with Fears, Planning your Presentation, Structuring Your Presentation, Delivering Your Presentation, Techniques of Delivery	03
10.	Group Discussion Introduction, Communication skills in group discussion, Do's and Dont's of group discussion	03

BP111P - COMMUNICATION SKILLS (PRACTICALS)

Teacher/s: Arivu Team

30 Hrs (2 Hrs/week)

The following learning modules are to be conducted using wordsworth® english language lab software

Basic communication covering the following topics

1. Meeting People
2. Asking Questions
3. Making Friends
4. What did you do?
5. Do's and Dont's

Pronunciations covering the following topics

6. Pronunciation (Consonant Sounds)
7. Pronunciation and Nouns
8. Pronunciation (Vowel Sounds)

Advanced Learning covering the following topics

9. Listening Comprehension / Direct and Indirect Speech
10. Figures of Speech
11. Effective Communication
12. Writing Skills

13. Effective Writing
14. Interview Handling Skills
15. E-Mail etiquette
16. Presentation Skills

Recommended Books

1. Basic communication skills for Technology, Andreja. J. Ruther Ford, 2nd Edition, Pearson Education, 2011
2. Communication skills, Sanjay Kumar, Pushpalata, 1st Edition, Oxford Press, 2011
3. Organizational Behaviour, Stephen .P. Robbins, 1st Edition, Pearson, 2013
4. Brilliant- Communication skills, Gill Hasson, 1st Edition, Pearson Life, 2011
5. The Ace of Soft Skills: Attitude, Communication and Etiquette for success, Gopala Swamy Ramesh, 5th Edition, Pearson, 2013
6. Developing your influencing skills, Deborah Dalley, Lois Burton, Margaret, Green hall, 1st Edition Universe of Learning LTD, 2010
7. Communication skills for professionals, Konar nira, 2nd Edition, New arrivals – PHI, 2011
8. Personality development and soft skills, Barun K Mitra, 1st Edition, Oxford Press, 2011
9. Soft skill for everyone, Butter Field, 1st Edition, Cengage Learning india pvt.ltd, 2011
10. Soft skills and professional communication, Francis Peters SJ, 1st Edition, Mc Graw Hill Education, 2011
11. Effective communication, John Adair, 4th Edition, Pan Mac Millan,2009
12. Bringing out the best in people, Aubrey Daniels, 2nd Edition, Mc Graw Hill, 1999

Theory Sessional examination syllabus

Sessional No.	Syllabus Chapter No.
I	1 to 5
II	6 to 10

BP106RM T - REMEDIAL MATHEMATICS (THEORY)

Teacher/s: Mr. D. H. P. Gowda (DHP)

30 Hours (2 Hrs/ week)

Scope: This is an introductory course in mathematics. This subject deals with the introduction to Partial fraction, Logarithm, matrices and Determinant, Analytical geometry, Calculus, differential equation and Laplace transform.

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

1. solve problems pertaining to Trigonometry, Analytical geometry, matrices, determinants, integration, differential equation, Laplace transform
2. explain importance of mathematics in pharmacy

Course materials:

Recommended Books (Latest Edition)

1. Differential Calculus by Shanthinarayan
2. Pharmaceutical Mathematics with application to Pharmacy by Panchaksharappa Gowda D.H.
3. Integral Calculus by Shanthinarayan
4. Higher Engineering Mathematics by Dr.B.S.Grewal

Lecture wise programme:

	Topic	Hours
1	Partial fraction Introduction, Polynomial, Rational fractions, Proper and Improper fractions, Partial fraction, Resolving into Partial fraction, Application of Partial Fraction in Chemical Kinetics and Pharmacokinetics	02
2	Logarithms Introduction, Definition, Theorems/ properties of logarithms, Common logarithms, Characteristic and Mantissa, worked examples, application of logarithm to solve pharmaceutical problems.	02
3	Matrices and Determinant Introduction to matrices, Types of matrices, Operation on matrices, Transpose of a matrix, Matrix Multiplication, Determinants, Properties of determinants, Product of determinants, Minors and co-Factors, Adjoint or adjugate of a square matrix, Singular and non-singular matrices, Inverse of a matrix, Solution of system of linear of equations using matrix method,	07

	Cramer's rule, Characteristic equation and roots of a square matrix, Cayley – Hamilton theorem, Application of Matrices in solving Pharmacokinetic equations	
4	Analytical Geometry Introduction: Signs of the Coordinates, Distance formula, Straight Line: Slope or gradient of a straight line, Conditions for parallelism and perpendicularity of two lines, Slope of a line joining two points, Slope – intercept form of a straight line	04
5	Calculus Differentiation : Introductions, Derivative of a function, Derivative of a constant, Derivative of a product of a constant and a function , Derivative of the sum or difference of two functions, Derivative of the product of two functions (product formula), Derivative of the quotient of two functions (Quotient formula) – Without Proof , Derivative of x^n w.r.t. where n is any rational number , Derivative of e^x , Derivative of $\log_e x$, Derivative of a^x , Derivative of trigonometric functions from first principles (without Proof), Successive Differentiation, Conditions for a function to be a maximum or a minimum at a point. Applications Integration: Introduction, Definition, Standard formulae, Rules of integration , Method of substitution, Method of Partial fractions, Integration by parts, definite integrals, application	10
6	Differential Equations: Some basic definitions, Order and degree, Equations in separable form , Homogeneous equations, Linear Differential equations, Exact equations, Application in solving Pharmacokinetic equations	03
7	Laplace Transform: Introduction, Definition, Properties of Laplace transform, Laplace Transforms of elementary functions, Inverse Laplace transforms, Laplace transform of derivatives, Application to solve Linear differential equations, Application in solving Chemical kinetics and Pharmacokinetics equations	02

Theory Sessional examination syllabus

Sessional No.	Syllabus Chapter No.
I	1 to 4
II	5 to 7

BP106RBT - REMEDIAL BIOLOGY (THEORY)

Teacher/s: Ms. Haripriya G (HG)

30 Hours (2 Hrs/ week)

Scope: To learn and understand the components of living world, structure and functional system of plant and animal kingdom.

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

- know the classification and salient features of five kingdoms of life
- understand the basic components of anatomy & physiology of plant
- know understand the basic components of anatomy & physiology animal with special reference to human

Lecture wise programme:

	Topic	Hours
1	Living World: <ul style="list-style-type: none">• Definition and characters of living organisms• Diversity in the living world• Binomial nomenclature• Five kingdoms classification. Salient features of Monera, Protista, Fungi, Animalia and Plantae, Virus, Morphology and Anatomy of Flowering plants <ul style="list-style-type: none">• Morphology of different parts of flowering plants – Root, stem, leaf inflorescence, flower, fruit, seed.• General Anatomy of Root, stem, leaf of monocotyledons & Dicotyledonous Plant.	05
2	Plants and mineral nutrition: <ul style="list-style-type: none">• Essential mineral, macro and micronutrients• Nitrogen metabolism, Nitrogen cycle, biological nitrogen fixation Photosynthesis <ul style="list-style-type: none">• Autotrophic nutrition, photosynthesis, Photosynthetic pigments, Factors affecting photosynthesis. Plant respiration: <ul style="list-style-type: none">• Cellular respiration, glycolysis, fermentation (anaerobic)	05
3	Plant growth and development <ul style="list-style-type: none">• Phases and rate of plant growth, Condition of growth,• Introduction to plant growth regulators Cell- The unit of life <ul style="list-style-type: none">• Structure and functions of cell and cell organelles, cell division	05

Tissues

- Definition, types of tissues, location and functions.

4 Body fluids and circulation

08

- Composition of blood, blood groups, coagulation of blood
- Composition and functions of lymph
- Human circulatory system
- Structure of human heart and blood vessels
- Cardiac cycle, cardiac output and ECG

Digestion and Absorption

- Human alimentary canal and digestive glands
- Role of digestive enzymes
- Digestion, absorption and assimilation of digested food

Breathing and respiration

- Human respiratory system
- Mechanism of breathing and its regulation
- Exchange of gases, transport of gases and regulation of respiration
- Respiratory volumes

5 Excretory products and their elimination

07

- Modes of excretion
- Human excretory system- structure and function
- Urine formation
- Renin angiotensin system

Neural control and coordination

- Definition and classification of nervous system
- Structure of a neuron
- Generation and conduction of nerve impulse
- Structure of brain and spinal cord
- Functions of cerebrum, cerebellum, hypothalamus and medulla oblongata

Chemical coordination and regulation

- Endocrine glands and their secretions
- Functions of hormones secreted by endocrine glands

Human reproduction

- Parts of female reproductive system
- Parts of male reproductive system
- Spermatogenesis and Oogenesis
- Menstrual cycle

Text books

- a. Text book of Biology by S. B. Gokhale
- b. A Text book of Biology by Dr. Thulajappa and Dr. Seetaram.

Reference books

- a. A Text book of Biology by B.V. Sreenivasa Naidu
- b. A Text book of Biology by Naidu and Murthy
- c. Botany for Degree students By A.C.Dutta.
- d. Outlines of Zoology by M. Ekambaranatha ayyer and T. N. Ananthakrishnan.
- e. A manual for pharmaceutical biology practical by S. B. Gokhale and C. K. Kokate

Theory Sessional examination syllabus

Sessional No.	Syllabus Chapter No.
I	1, 2, 3
II	4 & 5

BP112P – REMEDIAL BIOLOGY (PRACTICALS)**Teacher/s: Ms Haripriya G (HP)****30 Hours (2 Hrs/ week)**

1. Introduction to experiments in biology
 - a) Study of Microscope
 - b) Section cutting techniques
 - c) Mounting and staining
 - d) Permanent slide preparation
2. Study of cell and its inclusions
3. Study of Stem, Root, Leaf, seed, fruit, flower and their modifications
4. Detailed study of frog by using computer models
5. Microscopic study and identification of tissues pertinent to Stem, Root, Leaf, seed, fruit and flower
6. Identification of bones
7. Determination of blood group
8. Determination of blood pressure
9. Determination of tidal volume

Reference books

1. Practical human anatomy and physiology. by S.R.Kale and R.R.Kale.
2. A Manual of pharmaceutical biology practical. By S.B.Gokhale .C.k.Kokate.
S.P.Shriwastava.

Biology practical manual according to National core curriculum .Biology forum of Karnataka
prof .M.J.H.Shafi

JSS College of Pharmacy
Sri ShivarathreeshwaraNagara, Mysore-570015
*CLASS TIME TABLE – 2023-24

Class: B. PHARM (Semester- 1)

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

Time Day	9.00-9.50AM	9.50-10.40AM	11.10-12.05PM	12.05-1.00PM	2.00-2.55PM	2.55-3.50PM	4.05-5.00PM	5.00-5.55PM
Monday	-----	Pharmaceutical Inorg. Chem. CIA	Pharmaceutical Inorg. Chem. CIA	Pharmaceutical Analysis SRD	Human Anatomy & Physiology SM	Pharmaceutics TMP(Tu)	-----	-----
Tuesday	Pharmaceutics HKS	Human Anatomy & Physiology DT	Pharmaceutical Analysis SRD	Pharmaceutical Inorg. Chem. CIA	←- Human Anatomy & Physiology ←-Pharmaceutical Analysis--- ←-Pharm. Inorganic Chemistry ←-Pharmaceutics-----		-----Batch - I --DT----- ---Batch - II - Ruby/Monika--- -----Batch - III--CIA----- -----Batch - IV--HKS-----	
Wednesday	Pharmaceutics HKS	Pharmaceutical Analysis SRD	Human Anatomy & Physiology SM	Pharmaceutical Analysis (Tu) SRD	←- Human Anatomy & Physiology ←-Pharmaceutical Analysis--- ←-Pharm. Inorganic Chemistry ←-Pharmaceutics-----		-----Batch - II --DT----- -----Batch - III---Erica--- -----Batch - IV---Tenzin--- -----Batch - I ----HKS-----	
Thursday	←Remedial Biology--Batch - Logesh→ ←Communication Skills--Batch II→		Remedial Biology HP	Remedial Biology HP	←- Human Anatomy & Physiology ←-Pharmaceutical Analysis--- ←-Pharm. Inorganic Chemistry ←-Pharmaceutics-----		-----Batch - III---DT--- ---Batch - IV---Hemanth/Kalyani-- -----Batch - I ----CIA----- -----Batch - II --PS-----	
	-----	Remedial Maths DHP	Remedial Maths DHP	-----				
Friday	←Communication Skills --Batch-IV→		←Communication Skills - Batch- III→		←- Human Anatomy & Physiology ←-Pharmaceutical Analysis--- ←-Pharm. Inorganic Chemistry ←-Pharmaceutics-----		-----Batch - IV--DT----- -----Batch - I --SRD----- -----Batch - II---Samyukta--- -----Batch - III ---TS-----	
Saturday	Pharmaceutics HKS	Human Anatomy & Physiology(Tu) SM	Pharmaceutical Inorg. Chem. (Tu) CIA					

*Effective from: 03rd July - 2023

Note: 1. No tea break for practicals

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

(Signature)
Principal
JSS College of Pharmacy
Sri Shivarathreeshwara Nagar
Mysore - 570015

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