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

JSS COLLEGE OF PHARMACY

(Constituent College)

JSS Academy of Higher Education & Research

(Deemed to be University)

Accredited 'A+' Grade by NAAC

Mysuru - 570 015

Student Handbook

NAAC A+ 2018 | University Grants Commission CATEGORY 1 | 2019 nirf 34th in INDIA | 2019 THE WORLD UNIVERSITY RANKINGS World University Ranking 401-500 in INDIA Subject Ranking 251-300 in INDIA (Clinical, Pre-Clinical & Health) | 2019 ARIIA 4th in INDIA ATAL RANKING OF INSTITUTIONS ON INNOVATION ACHIEVEMENTS

The Handbook for Students is designed to orient you to the academic and social activities of JSS College of Pharmacy, Mysuru. In this, you will find information on the options available to you and the resources that can help you to find advice and make good choices. The Handbook can be your guide to academic requirements, our residential system and many activities to the college. Importantly, it states the standards we hold and that we expect of you in your conduct as a student in the college.

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About JSS Academy of Higher Education & Research

JSS Academy of Higher Education & Research (JSS AHER), formerly known as JSS University, is a Deemed to be University located in Mysuru, Karnataka. It was established in 2008 under Section 3 of the UGC Act 1956 and is part of JSS Mahavidyapeetha, which runs a variety of educational institutions. This deemed-to-be university is recognized by MHRD and accredited by NAAC with A+ Grade (3.47 CGPA). JSS AHER has been graded as Category-I Deemed-to-be University by UGC in the Year 2018. The Deemed to be University has made great progress in grooming graduates, postgraduates, and Ph.D. researchers by providing effective value-based education across our institutions by focusing on overall development of an individual through state-of-art facilities to make the learner a useful citizen to the society.

Vision

To provide education that helps transformation of individuals and society.

Mission

The Mission of JSS AHER is to expand the boundaries of education and to make the most amazing learning possible by:

- Providing superior undergraduate and professional education to its students.
- Developing and advancing the talents of students to create applicable knowledge.
- Nurturing translational and transformational research that benefit the society.
- Inspiring to excel in health sciences delivery and care.

About JSS College of Pharmacy, Mysore

JSS College of Pharmacy (Est. 1973) is a constituent college of JSS Academy of Higher education and Research (JSS AHER) formerly known as JSS University, Mysuru. Since 1973, the college has made great strides in meeting specific needs of students and patients, exploring new frontiers in pharmaceutical sciences and practice. As stated in the Mission and vision statement of the college, we strive for high quality education, training and research focused on lifelong learning.

The College of Pharmacy continues to build on its rich history and tradition of excellence by offering quality degree programs that provide students with the necessary education and skills, supplemented by excellent infrastructure and instructional facilities, for their careers in pharmacy. The college offers a comprehensive package of pharmacy education and training opportunities beginning with the Diploma in Pharmacy (D.Pharm), B.Pharm (Practice) ,Bachelor of Pharmacy (B.Pharm), Doctor of Pharmacy (Pharm.D.), Master of Pharmacy (M.Pharm) and Doctoral (Ph.D.) programs, Residency Programme in Oncology & Nephrology. Post graduate diploma and certificate courses are also offered to the students as add-on to the regular programs. The college houses some of the nation`s recognized researchers and educates some of the brightest students nationally and internationally. Our stability and educational excellence is apparent in numbers.

We are a renowned leader in pharmaceutical education, research and practice. This benchmarking has been recognized nationally in the form of accreditation by National Board of Accreditation (NBA), India. As a part of global recognition, the Pharm.D. Program has been certified by Accreditation Council for Pharmacy Education (ACPE), USA. We are presently ranked as top 10 pharmacy college in the country (by NIRF, MHRD, Govt. of India). We remain committed to providing our students with the best education possible in a setting where every student matters.

We have consistently retained at 10th position in NIRF ranking for the last 4 years, namely 2016, 2017, 2018, and 2019.

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.

College Core Values

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

Strategic Plan

College has a well defined strategic plan. Strategic planning allows the college to make fundamental decisions or choices by taking mission and vision in to account, and to view what college hopes to accomplish and how it will do so. A strategic plan is built on a thorough analysis of the college's mission and vision, existing structure, governance, staff, collaborations, and resources (financial, human, technical, and material).

JSS College of Pharmacy, Mysuru will position as the SMART Colleges of Pharmacy in the country by 2020.

By Developing and advancing

S – Student Quality
M – Motivation
A – Academic Excellence
R – Research and Innovation
T – Technology

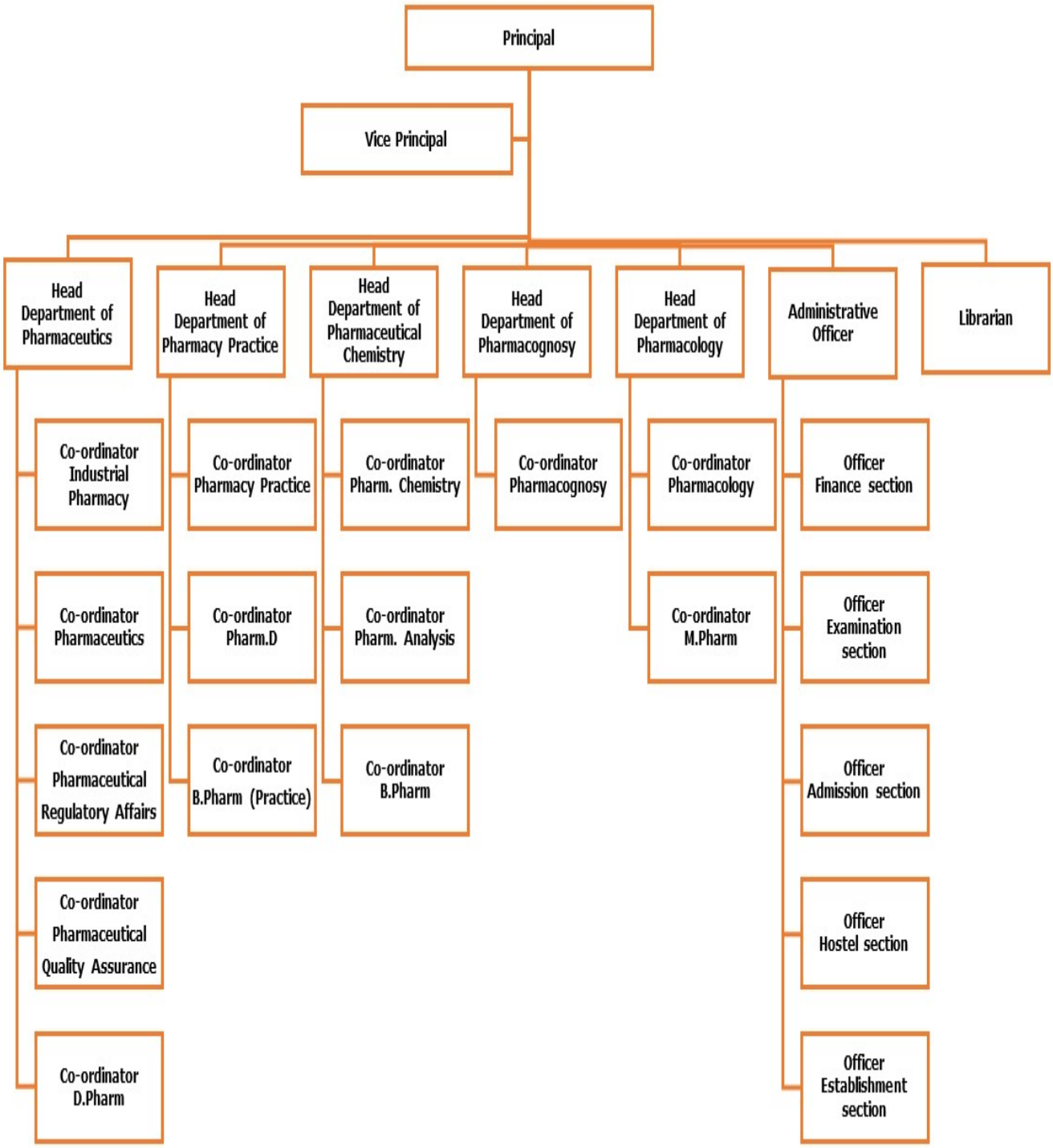
and produce SMART Pharmacists who excel through –

S – **Skills** that help achieve excellence
M – **Motivation** to do their best and emerge as leader
A – **Academic** excellence that is exemplified
R – **Research** that is relevant, reproduceable and realistic
T – **Technology** that integrates with their practice

Internal Quality Assessment Cell (IQAC)

IQAC works towards realizing the goals of quality enhancement and sustenance of the college. The committee is involved in developing system for conscious, consistent, and catalytic improvement in the performance of college. It also channelizes the efforts and measures of the college towards academic excellence. Committee consists of principal as chairman, senior faculty and university nominee as members.

Organization chart



FACULTY

Department of Pharmaceutics

Sl. No	Name	Qualification	Designation
1.	Dr. Balamuralidhara Veerana	M.Pharm., Ph.D.	Assc. Professor & Head
2.	Dr. Pramod K Tegginamat	M.Pharm., Ph.D.	Principal
3.	Dr. Sudeendra R Bhat	M.Pharm., Ph.D.	Professor
4.	Dr. Vishal K Gupta	M.Pharm., Ph.D.	Professor
5.	Dr K Bangaru Rajan	M.Pharm., Ph.D.	Professor
6.	Dr. Gangadharappa H Veerabhadrappa	M.Pharm., Ph.D.	Assc. Professor
7.	Dr. Venkatesh M Prakash	M.Pharm., Ph.D.	Assc. Professor
8.	Dr. Vikas Jain	M.Pharm., Ph.D.	Assc. Professor
9.	Dr. Amit B. Patil	M.Pharm., Ph.D.	Assc. Professor
10.	Dr. Gowrav M Prakash	M.Pharm., Ph.D.	Asst. Professor
11.	Dr. Hemanth Kumar S	M.Pharm., Ph.D.	Asst Professor
12.	Dr Riyas Ali Osmani	M.Pharm., Ph.D., Post Doc.	Asst Professor
13.	Dr Shailesh T	M.Pharm., Ph.D.	Lecturer
14.	Dr. Asha Spandana K M	M.Pharm., Ph.D.	Lecturer
15.	Dr. Mahendran B	M.Pharm., Ph.D.	Lecturer
16.	Mrs. Preethi S	M.Pharm.	Lecturer

Department of Pharmaceutical Chemistry

Sl. No	Name	Qualification	Designation
1.	Dr. Gurupadayya Bannimath	M.Pharm., Ph.D.	Professor & Head
2.	Dr. Gurubasavaraj V Pujar	M.Pharm., Ph.D.	Professor & Vice Principal
3.	Dr. Madhusudhan Purohit	M.Pharm., Ph.D.	Professor
4.	Dr. Prashantha BR Kumar	M.Pharm., Ph.D.	Assc. Professor
5.	Dr. Chandan R Shivanna	M.Pharm., Ph.D.	Assc. Professor
6.	Dr. Anand K Tengli	M.Pharm., Ph.D.	Assc. Professor
7.	Dr. T Durai Ananda Kumar	M.Pharm., Ph.D.	Asst. Professor
8.	Dr. J.C. Thejaswini	M.Pharm., Ph.D.	Asst. Professor
9.	Dr. Jayashree V	M.Pharm., Ph.D.	Asst. Professor
10.	Dr. Sheshagiri Dixit	M.Pharm., Ph.D	Lecturer
11.	Dr Rupshee Jain	M.Pharm., Ph.D	Lecturer
12.	Mr. Chetan I A	M.Pharm.	Lecturer
13.	Dr Prabitha P	M.Pharm., Ph.D	Lecturer

Department of Pharmacy Practice

Sl. No	Name	Qualification	Designation
1.	Mrs. Savitha R Sanathan	M.Pharm.	Assc. Prof &Head
2.	Dr. Ramesh Madhan	M.Pharm., Ph.D.	Professor
3.	Mrs. Shilpa Palaksha	M.Pharm.	Assc. Professor
4.	Mr. Panchaksharappa D.H Gowda	M.Sc., PGDCA.	Asst. Professor
5.	Dr. Shobha Churi	M.Pharm., Ph.D.	Asst. Professor

6.	Dr. Umesh Marappa	Pharm D.	Asst. Professor
7.	Dr. Juny Sebastian	M.Pharm., Ph.D.	Asst. Professor
8.	Mr. Jaidev BR Kumar	M.Pharm.	Lecturer
9.	Mr. Balaji S	M.Pharm.	Lecturer
10.	Dr. Srikanth M Siddalingegowda	M.Pharm., Ph.D.	Lecturer
11.	Dr. Sri Harsha Chalasani	M.Pharm., Ph.D.	Lecturer
12.	Dr. Rakshith U Renukaprasad	Pharm.D	Lecturer
13.	Dr. Siddartha N Dhurappanavar	Pharm.D	Clinical Pharmacist
14.	Dr Acsah Annie Paul	Pharm.D	Lecturer

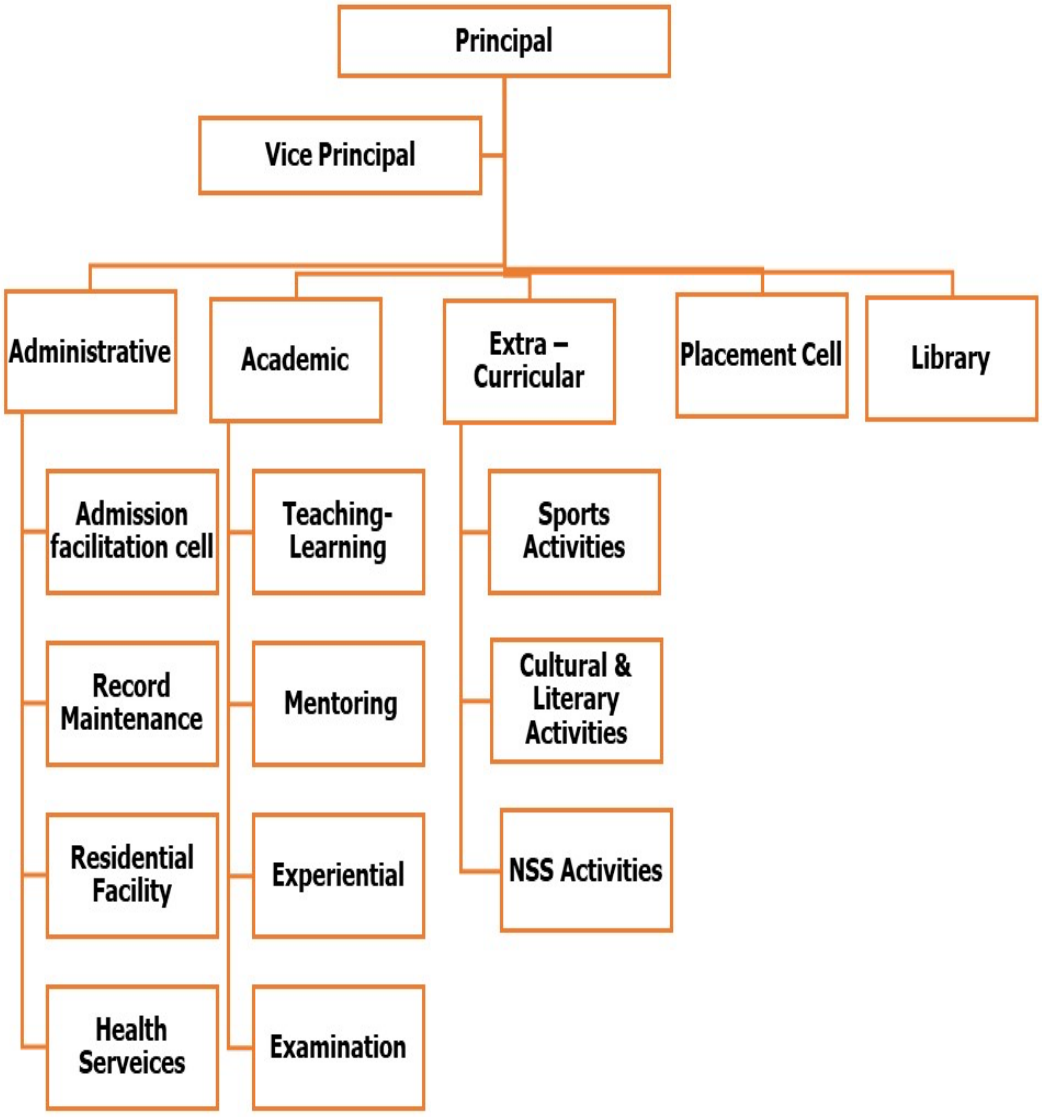
Department of Pharmacology

Sl. No	Name	Qualification	Designation
1.	Dr. Krishna K Linganna	M.Pharm., Ph.D.	Assc. Professor & Head
2.	Dr. Manjula S Nanjundaiah	M.Pharm., Ph.D.	Professor
3.	Dr. Saravana Babu C	M.Pharm., Ph.D.	Professor
4.	Dr. Mahalakshmi A Marappagowda	M.Pharm., Ph.D.	Asst. Professor
5.	Ms. Seema Mehdi	M.Pharm.	Lecturer
6.	Dr. Nagashree K Shivarajaiah	M.Pharm., Ph.D	Lecturer
7.	Dr. Dithu T	M.Pharm., Ph.D	Lecturer

Department of Pharmacognosy

Sl. No	Name	Qualification	Designation
1.	Dr. Suresh Joghee	M.Pharm., Ph.D.	Professor & Head
2.	Dr. Mruthunjaya Kenganora	M.Pharm., Ph.D.	Professor
3.	Dr. M.N. Naganadhini	M.Sc. Ph.D.	Asst. Professor
4.	Dr. Paramakrishnan Nallupillai	M.Pharm., Ph.D.	Lecturer
5.	Ms. Haripriya	M.Pharm	Lecturer
6.	Mr Rajaguru	M.Pharm	Lecturer
7.	Mr Logesh	M.Pharm	Lecturer
8.	Mr Vishvesh	M.Pharm	Lecturer

Organization Chart - Student Services



Duties and Responsibilities of Individuals involved in Student Services

Student services	Person/s Responsible	Responsibilities
Principal	Dr. T. M. Pramod Kumar	• Making decisions on behalf of the faculty, staff, students and alumni to achieve the stated mission and vision of the College. • Effectively organizing and allocating the human and financial resources of the college to achieve the stated mission and vision of the college. • Implementing and enforcing the policies of the College and the University. • Representing and advocating on behalf of the faculty, staff, students and alumni to the University.
Vice Principal	Dr. G V Pujar	• Supervision, coordination and delivery of teaching programs • Management of programs to improve the knowledge, skill and attitude of staff • Responsibility for general discipline matters of students • CCLPE • Contribute to the overall management of the college
Assistant Administrative Officer	Ms Divya Shree	• Coordinate a range of functions, such as finance, human resources and other support areas that contributes significantly to the business management function within the college. • Manage the delivery of a particular service or function (e.g. finance, library, human resources, facilities) • Perform routine administrative activities, • Provide basic physical and emotional care for students • Assist with coordination and planning of student routines • Provide routine customer service tasks such as reception and providing straightforward advice about the college • Provide routine support tasks with respect to college maintenance • Coordinate the day to day routine operational requirements of a college office • Assume responsibility for the general cleanliness and maintenance of the college
Admission facilitation cell	Administrative Officer and members of Admission facilitation cell	• The Cell is responsible to create an awareness about the Pharmacy Education and Profession across pan India • The team will be actively participating in two way communication between aspiring students, who would wish to take up Pharmacy Curriculum after 10+2. • Admission Facilitation Cell can provide complete information package about the various courses offered by this institution, fee structure and admission process.

Record maintenance	Office assistant	• Fee collection and documents. • Maintains all the records of students, which include the completed application, academic information, transcripts, and others. • To maintain confidentiality of student educational records.
Residential facility	Warden	• To frame policy on the running of the hostels, messes and other facilities within the hostel. • To ensure that no ragging takes place in the hostels and maintain a ragging free Hostels. • To plan for upgradation of Facilities in the hostels. • To ensure maintenance of Discipline in and around the Hostel • Any other responsibility assigned by the Principal/higher authority.
Institutional Hostel Review Committee	Members of Institutional Hostel Review Committee	• They shall collectively carry out hostel rounds during the working hours of the institution and if necessary even after the working hours to ensure that the students amenities, dining, and mess needs and discipline are maintained. • They shall review hostel income and expenditure every month and give report to the principal and also the warden. • They shall carry out random stock verification, periodically and also annual verification of all records, stocks, etc., • They shall periodically assess the quality of food. • Purchase made for the various provisions and vegetables for the hostel shall be checked by them with regard to the quantity and quality of the material delivered to the hostel. • They shall receive the grievances, complaints, if any, regard to the ragging, theft, etc., if any, from the students and redress them to the extent possible.
Health Services	Office assistant	• Provides health card to the students. • Free access to the University health centre for free health checkup and medication.
Teaching Learning	Principal Vice Principal HoDs and teaching staff	• Students made aware of curriculum, syllabi, method of evaluation through orientation programme in the beginning of the year. Academic calendar of events (course-wise and subject wise for UG and PG courses) based on need, feedback and academic planning is given to the students. • Unitized teaching plan to ensure proper teaching-learning transaction and continuous evaluation in the

		form of internal assessment examinations. • Teaching-learning strategies include practical, assessments, field work, project work, student seminars, group discussions, case studies, industrial/field visits, in-plant training, along with didactic teaching. • ICT enabled TL process (Computers, Internet, LCD, OHP, Models, etc.). • The learner centric approach ensured through student seminars, assignments, project work, visits, in-house training etc. • Faculty function as academic counselors and mentors. • Continuous internal assessment that is shared with students to ensure proper understanding of the subject and clarification of doubts. • Students are encouraged to use extensively library resources, computers and e-material in the TL process.
Mentoring	Class Teacher	• Monitor, evaluate and report student progress in key learning areas • Implement strategies to achieve targets related to student learning outcomes • Maintain records of class attendance and recording student progress • Supervising a range of student activities including support and welfare programs and contributing to a range of co-curricular activities. • To send Sessional marks statement and attendance to the parents after completion of each sessionals.
	Batch Teacher	• Maintain the student profile form which consists of Bio-Data of students, their Residential and Permanent Addresses, their Academic Grades. • Any problem related to the particular student is attended by the respective Batch teacher which includes counseling the students.
Experiential Learning	Coordinator for Experiential Learning	• Conduction of interviews with course coordinators to discuss current practices in the use of face-to-face role-play in teaching across various disciplines such as education, occupational therapy, physiotherapy, law, outdoor education, nursing, computer and information science and pharmacy. • Conduction of a workshop to facilitate discussions around development of a best practice model for role-plays in teaching. • Development of a best practice model for role-plays. • Implementation of the practice approach for role-plays in a first year Pharmacy course • Evaluation of the practice model used in a first year Pharmacy course.

Examination section	Office assistant	• Each of the College's examinations falls under the responsibility of an Examination Co-ordinator. • Adhere to all Rules and Regulations pertaining to the running of examinations. • Adhere to timelines for the development, running and review of examinations. • To announce the date of Sessional examination well in advance to the students and staff. • To collect the question paper from the individual subject teachers and maintain the confidentiality of the same. • To Assign the invigilation duty to the staff and ensure the smooth conducting of the exam. • To check the seating arrangement of the students in the examination hall.
Extra-curricular activities	Sports coordinators	• Represent the views and interests of students on sporting matters to the University, locally and nationally. • Encourage students to become involved in Access, Recreational, Intra Mural, and Performance Sport along with Fitness and Wellbeing programmes. • Organize and support meetings of representatives of all classes. • To help develop and promote all areas of sport provided by the College. • Represent students of the University to local and national bodies, organizing campaigns in support of student interests. • To identify the Student coordinators for individual sport events well in advance for the smooth conduction of events. • To handed over the list of events and participants form to class representatives. • To carry out Annual athletic meet for one day in an academic year. • The schedule of events is prepared and communicated to all staff and students by displaying on the notice board.
	Cultural & Literary (Pharmafest) coordinators	• The dates for conduct of Pharmafest, events to be conducted, review of rules and regulations, schedule of the events are decided by a team consisting of pharmaceutical society members, coordinators of Pharmafest and Principal. • After the announcement of date, one week time is given to students for submitting their entries for competition. • Detailed time table and list of participants is displayed on notice board. • For each event, judges are identified and duly intimated at least 24 hrs before the commencement of events.
	NSS	• To provide NSS orientation to the students for social

	coordinators	service scheme. • To encourage the students for participation in various social service schemes. • To conduct NSS regular activities as per the NSS and university guidelines. • To organize NSS annual special camp in village. • To conduct rallies for promotion of public health awareness.
Placement Cell	Placement officer	• To look after the training and placement activities of students. • To have close liaison with industry for placement of students • To work in consultation with Coordinator Industry Institute Interaction for organizing lectures from the professionals from industry. • To collect feedback from the companies coming for placement. • Arrange Training programmes for soft skills and for interview facing skills for the students using institutional and external expertise. • To organize the entrepreneurship workshops.

Calendar of Events

Calendar of events provide the details of various activities that take place in the institution during the academic year. At the beginning of the academic year, staff coordinators are identified for various activities such as curricular, co-curricular, extracurricular, internal assessment, university examination and other institutional activities. The tentative schedule of each activity is prepared and provided in the course handout.

3.0 COURSES OFFERED

The institution offers the following courses

1. Diploma in Pharmacy (D.Pharm.)
2. Bachelor of Pharmacy (B.Pharm.)
3. Bachelor of Pharmacy (Practice) (B.Pharm Practice)
4. Doctor of Pharmacy (Pharm.D.)
5. Master of Pharmacy (M.Pharm.)
6. Doctor of Philosophy (Ph.D.)
7. Diploma Programs
8. Certificate Courses
9. Residency Program in Clinical Pharmacy (Oncology & Nephrology)

No.	Course	Duration
1	D.Pharm.	2 years
2	B.Pharm • Lateral entry	4 years 3 years
3	B.Pharm Practice	2 years
4	Pharm. D.	2 years
5	Pharm. D. (PB)	3 years
6	M.Pharm	2 years
7	Ph.D	3 years
8	Diploma Programs	1 year
9	Certificate Courses	6 months
10	Residency Program in Clinical Pharmacy • Oncology • Nephrology	2 years

Diploma in Pharmacy (D.Pharm)
Diploma in Pharmacy (D.Pharma) is a two-year academic programme streamlined to endow in-depth knowledge of science and technique behind the formulation of pharmacy practice and medicines management. The programme fundamentally provides an overview of the conjecture principles and practices implicated in the science of pharmacy including core subjects like Pharmaceutical Chemistry Pharmacognosy Pharmacology and Pharmaceutics.

Bachelor of Pharmacy (B.Pharm)
Bachelor of Pharmacy is a four years program divided into eight semesters that prepares students for career in pharmaceutical industry and research. The institution offers an advantage of a value added certificate program, on selected specializations at no additional cost, which benefits students for their industrial recruitment.

Bachelor of Pharmacy (Practice)
Bachelor of Pharmacy (Practice) is a two years program that provides opportunity to D.Pharm undergraduates to undertake advanced studies in clinical pharmacotherapeutics and practice areas and attend to community pharmacy.

Doctor of Pharmacy (Pharm.D.)
Pharm. D**.** is a Doctor of Pharmacy program that offers patient oriented pharmacy education and training.

Pharm. D. (Post Baccalaureate) is a 3 years program as a lateral entry to the Pharm.D. offered to B.Pharm. graduates.

Master of Pharmacy (M.Pharm.)
M.Pharm. is a two years Masters program, college offers M.Pharm in the following specializations.

1. Industrial Pharmacy
2. Pharmacy Practice
3. Pharmaceutical Chemistry
4. Pharmaceutical Analysis
5. Pharmaceutics
6. Pharmacognosy

7. Pharmacology
8. Pharmaceutical Quality Assurance
9. Pharmaceutical Regulatory Affairs
10. Pharmaceutical Biotechnology

Doctor of Philosophy (Ph.D.)
Doctor of Philosophy is a research degree and the college offers Ph.D. in pharmaceutical sciences and pharmacy practice.

Diploma Programs
Diploma program is offered in the following specializations

1. Regulatory Toxicology
2. Computer Aided Drug Design
3. Food & Drug Analysis
4. Intellectual Property Rights
5. Medical Devices
6. Cosmeceutics
7. Medicine and Poison Information
8. Pharmaceutical Quality Assurance
9. Pharmaceutical Regulatory Affairs
10. Pharmacovigilance

CERTIFICATE COURSES

1. Pharmaceutical Quality Assurance
2. Medicine Information
3. Herbal Drug Standardization
4. Clinical Research

Residency Program in Clinical Pharmacy (Oncology & Nephrology)
A two years structured training program to gain knowledge and practice experience in specialty pharmacy practice after pharmacy graduation.

Working days
The required number of working days for each course consists of not less than the days as listed below

No.	Course	No. of working days
1.	D.Pharm	180
2.	B.Pharm (Semester)	100
3.	Pharm. D.	200
4.	Pharm. D. (PB)	200
5.	M.Pharm (Semester)	100
6.	Diploma	200
7.	Certificate Courses*	--
8.	Residency Program in Clinical Pharmacy	365

* Total of 100 Hours spread across 6 months duration

Attendance and Progress: A candidate is required to put in at least 80% attendance in theory and practical subjects separately. The candidate shall complete the prescribed course satisfactorily to be eligible to appear for the respective examinations.

Transfer policy: Students are allowed to take a transfer between JSS College of Pharmacy, Mysore and JSS College of Pharmacy, Ooty on genuine grounds. For which, student who wish to take a transfer within the JSS AHER must raise the application stating the reasons.

4.0 CURRICULUM

The course of study shall include the subjects as mentioned in the tables below. The number of hours in a week, devoted to each subject for its teaching in theory, practical and tutorial shall not be less than that noted against it in columns.

4.1 B.PHARM

B.Pharm – First Semester

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 – 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)

B.Pharm – Second Semester

Course Code	Name of the course	No. of hours	Tutorial	Credit points
BP201T	Human Anatomy and Physiology II – Theory	3	1	4
BP202T	Pharmaceutical Organic Chemistry I – Theory	3	1	4
BP203T	Biochemistry – Theory	3	1	4
BP204T	Pathophysiology – Theory	3	1	4
BP205T	Computer Applications in Pharmacy – Theory *	3	-	3
BP206T	Environmental sciences – Theory *	3	-	3
BP207P	Human Anatomy and Physiology II –Practical	4	-	2
BP208P	Pharmaceutical Organic Chemistry I– Practical	4	-	2
BP209P	Biochemistry – Practical	4	-	2
BP210P	Computer Applications in Pharmacy – Practical*	2	-	1
	Total	**32**	**4**	**29**

*Non University Examination (NUE)

B.Pharm – Third Semester

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP301T	Pharmaceutical Organic Chemistry II – Theory	3	1	4
BP302T	Physical Pharmaceutics I – Theory	3	1	4
BP303T	Pharmaceutical Microbiology – Theory	3	1	4
BP304T	Pharmaceutical Engineering – Theory	3	1	4
BP305P	Pharmaceutical Organic Chemistry II – Practical	4	-	2
BP306P	Physical Pharmaceutics I – Practical	4	-	2
BP307P	Pharmaceutical Microbiology – Practical	4	-	2
BP 308P	Pharmaceutical Engineering –Practical	4	-	2
	Total	**28**	**4**	**24**

B.Pharm – Fourth Semester

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP401T	Pharmaceutical Organic Chemistry III– Theory	3	1	4
BP402T	Medicinal Chemistry I – Theory	3	1	4
BP403T	Physical Pharmaceutics II – Theory	3	1	4
BP404T	Pharmacology I – Theory	3	1	4
BP405T	Pharmacognosy and Phytochemistry I– Theory	3	1	4
BP406P	Medicinal Chemistry I – Practical	4	-	2
BP407P	Physical Pharmaceutics II – Practical	4		2
BP408P	Pharmacology I – Practical	4	-	2
BP409P	Pharmacognosy and Phytochemistry I – Practical	4	-	2
	Total	**31**	**5**	**28**

B.Pharm – Fifth Semester

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**

B.Pharm – Sixth Semester

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP601T	Medicinal Chemistry III – Theory	3	1	4
BP602T	Pharmacology III – Theory	3	1	4
BP603T	Herbal Drug Technology – Theory	3	1	4
BP604T	Biopharmaceutics and Pharmacokinetics – Theory	3	1	4
BP605T	Pharmaceutical Biotechnology – Theory	3	1	4
BP606T	Quality Assurance –Theory	3	1	4
BP607P	Medicinal chemistry III – Practical	4	-	2
BP608P	Pharmacology III – Practical	4	-	2
BP609P	Herbal Drug Technology – Practical	4	-	2
	Total	**30**	**6**	**30**

B.Pharm – Seventh Semester

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP701T	Instrumental Methods of Analysis – Theory	3	1	4
BP702T	Industrial PharmacyII – Theory	3	1	4
BP703T	Pharmacy Practice – Theory	3	1	4
BP704T	Novel Drug Delivery System – Theory	3	1	4
BP705P	Instrumental Methods of Analysis – Practical	4	-	2
BP706PS	Practice School*	12	-	6
	Total	**28**	**5**	**24**

* Non University Examination (NUE)

B.Pharm – Eighth Semester

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP801T	Biostatistics and Research Methodology	3	1	4
BP802T	Social and Preventive Pharmacy	3	1	4
BP803ET	Pharma Marketing Management	3 + 3 = 6	1 + 1 = 2	4 + 4 = 8
BP804ET	Pharmaceutical Regulatory Science			
BP805ET	Pharmacovigilance			
BP806ET	Quality Control and Standardization of Herbals			
BP807ET	Computer Aided Drug Design			
BP808ET	Cell and Molecular Biology			
BP809ET	Cosmetic Science			
BP810ET	Experimental Pharmacology			
BP811ET	Advanced Instrumentation Techniques			
BP812ET	Dietary Supplements and Nutraceuticals			
BP813PW	Project Work	12	-	6
	Total	**24**	**4**	**22**

Course outcomes

Course code/ Course title	Course outcomes
B. Pharmacy I Semester	
BP101T Anatomy, Physiology and Health Education	The students should be able to: 1) Explain the terminologies related to human anatomy, physiology and health education 2) Explain the gross morphology, structure and functions of various organs of the human body. 3) Describe the various homeostatic mechanisms and their imbalances. 4) Identify the various tissues and organs of different systems of human body. 5) Appreciate coordinated working pattern of different organs of each system
BP102T Pharmaceutical Analysis-I	The students should be able to: 1) Explain the basic concepts of quantitative and qualitative analysis. 2) Explain principles and applications of aqueous, non-aqueous titrimetric methods to evaluate purity of drugs. 3) Describe principles and applications of volumetric and electro chemical analysis methods to evaluate purity of drugs 4) Explain principles and applications of redox titrations involved in the quantitative analysis of drugs. 5) Describe principles and applications of complexometric and precipitation titrations to evaluate purity of drugs

BP103T Pharmaceutics-I	The students should be able to: 1) Describe the history and development of pharmacy profession 2) Explain the concepts of posology, pharmaceutical incompatibilities and pharmaceutical calculations 3) Describe the parts of prescriptions and handling of prescriptions 4) Explain the method of preparations and stability studies of monophasic and biphasic liquid dosage forms 5) Explain the method of preparations and evaluation studies of semisolid dosage forms

BP104T Pharmaceutical Inorganic Chemistry	The students should be able to: 1) Explain the sources of impurities and quality control tests to determine the impurities in drugs and pharmaceuticals 2) Describe the medicinal and pharmaceutical importance of inorganic compounds 3) Acquire knowledge on different types of diagnostic agents, dialysis fluids and dental products 4) Describe the definitions, preparations and assay procedures of gastrointestinal agents, expectorants, haematinics, astringents and antidotes 5) Explain the measurement, storage and pharmaceutical applications of radiopharmaceuticals
BP105T Communicative English	The students should be able to: 1) Explain the importance, barrier and perspectives of communication for a pharmacist to function effectively 2) Describe the elements (verbal and non-verbal) and styles of communication for a pharmacist to function effectively 3) Explain the concepts of interview skills and presentation skills 4) Explain about the leadership qualities and essentials 5) Explain about the importance and elements of group discussion
BP106RBT Remedial Biology	The students should be able to: 1) Explain about the kingdom living organisms and salient features 2) Explain about the morphology and general anatomy of the flowering plants 3) Describe the concepts of plant and mineral nutrition 4) Explain the plant tissues, respiration and photosynthesis 5) Describe the digestive, respiratory, excretory and reproductive systems of humans
BP106RMT Remedial Mathematics	The students should be able to: 1) Explain the application aspects of partial fraction in chemical kinetics and pharmacokinetics 2) Explain the application of logarithm to solve pharmaceutical problems. 3) Describe about the matrices and their application in solving pharmacokinetic equations 4) Explain the different elements of differentiation, differential equations and Laplase transform and their pharmacokinetics applications 5) Describe about the analytical geometry and pharmacokinetic application
BP107P	The students should be able to: 1) Examine and correlate haematological parameters with clinical conditions in

Anatomy, Physiology and Health Education	relevance to the health care. 2) Identify the different bones, various models/specimen/slides of human organs and tissues 3) Demonstrate the measurement of blood pressure.
BP108P Pharmaceutical Analysis-I	The students should be able to: 1) Impart knowledge in preparation and standardization of solutions with different strength. 2) Perform volumetric analysis such as acidimetry and alkalimetry, oxidation and reduction, complexometry, precipitation and non-aqueous titration. 3) Perform electro-analytical methods.
BP109P Pharmaceutics-I	The students should be able to: 1) Develop skills in compounding and dispensing of dosage forms 2) Gain knowledge about the principle and preparation procedure related to syrups, elixirs, linctus and gargles & mouth washes. 3) Gain knowledge about the principle and preparation procedure related to solutions, suspensions, emulsions and suppositories
BP110P Pharmaceutical Inorganic Chemistry	The students should be able to: 1) Perform quality control tests in limiting traces of impurities present in pharmaceuticals by performing limit tests 2) Prepare and evaluate pharmaceutical inorganic compounds 3) Identify cations and anions present in the inorganic drugs
BP111P Communicative English	The students should be able to: 1) Communicate effectively with different group of peoples 2) Describe different elements of pronunciation 3) Explain the concepts of effective writing, presentation, and interview
BP112RBP Remedial Biology	The students should be able to: 1) Explain microscopic techniques, staining techniques and permanent slide preparation 2) Perform Microscopic study and identification of tissues pertinent to Stem, Root, Leaf, seed, fruit and flower. 3) Determine the blood group and blood pressure
B. Pharmacy II Semester	
BP201T Anatomy, Physiology and Health Education	The students should be able to: 1) Explain the gross morphology, structure and functions of various organs of the human body. 2) Describe the various homeostatic mechanisms and their imbalances. 3) Appreciate the interlinked mechanisms in the maintenance of normal functioning (homeostasis) of human body. 4) Identify the various tissues and organs of different systems of human body. 5) Appreciate coordinated working pattern of different organs of each system
BP202T Pharmaceutical Organic Chemistry –I	The students should be able to: 1) Explain fundamental concepts (nomenclature, isomerism) of organic chemistry 2) Explain the concepts of hybridization, electronic and steric effects of organic molecules 3) Explain the reactivity of aldehydes and ketones, carboxylic acids, amino and azo compounds 4) Describe the reactions and mechanisms of nucleophilic substitution, addition

	and elimination reactions. 5) Explain the reaction orientation rules (Sayetzeffs and Markonikov's).
BP203T Biochemistry	The students should be able to: 1) Explain the biochemical role of carbohydrates, proteins, lipids and metabolic pathway of nutrients. 2) Describe the bioenergetic reactions and their biological role 3) Explain the metabolic pathways of carbohydrates, proteins and lipids 4) Explain the DNA replication, transcription, and translation processes. 5) Describe the catalytic role, therapeutic and diagnostic applications of enzymes and coenzymes.
BP204T Pathophysiology	The students should be able to: 1) Describe the mechanism of cell injury, cell adaptation and inflammation and their implications in disease 2) Explain the etiology, signs and symptoms, and clinical interpretation of haematological, nervous and gastrointestinal disorders 3) Explain the etiology and clinical interpretation of cancer 4) Explain the etiology, signs and symptoms, and clinical interpretation of infectious diseases 5) Explain the etiology, signs and symptoms, and clinical interpretation of sexually transmitted diseases
BP205T Computer Applications in Pharmacy	The students should be able to: 1) Explain the concept of number system and information systems 2) Describe the web technologies (HTML, XML) and databases (MYSQL, MS Aceess) 3) Enumerate the different application of computers in community and dispensing pharmacy 4) Explain the concepts of cheminformatics and bioinformatics 5) Explain the role of data analysis in preclinical development
BP206T Environmental Sciences	The students should be able to: 1) Create the awareness about environmental problems among learners. 2) Impart basic knowledge about the environment and its allied problems. 3) Develop an attitude of concern for the environment. 4) Motivate learner to participate in environment protection and environment improvement. 5) Acquire skills to help the concerned individuals in identifying and solving environmental problems.
BP207P Anatomy, Physiology and Health Education	The students should be able to: 1) Demonstrate senses, nervous system and endocrine system using models 2) Determination of tidal volume and vital capacity 3) Demonstrate digestive, respiratory, cardiovascular systems, urinary and reproductive systems with the help of models and specimens.
BP208P Pharmaceutical Organic Chemistry-I	The students should be able to: 1) Perform systematic qualitative analysis of unknown organic compounds 2) Preparation of organic derivatives through oxidation and reduction, acetylation, esterification and etherification and halogenation. 3) Demonstrate the structure and reactivity of organic compounds using molecular models

BP209P Biochemistry	The students should be able to: 1) Perform qualitative analysis of carbohydrates, proteins and lipids. 2) Estimate blood glucose and blood cholesterol levels. 3) Estimate creatinine levels in urine and liver function test.
BP210P Computer Applications in Pharmacy	The students should be able to: 1) Create a HTML web page to show personal information. 2) Create a MS Access database to store the patient and drug information 3) Create mailing labels using Label Wizard in MS WORD

B. Pharmacy III Semester	
BP301T Pharmaceutical Organic Chemistry –II	The students should be able to: 1) Explain the reactivity and stability of benzene and its derivatives 2) Explain the acidity of phenols and acids, and basicity of amines 3) Explain the significance of determination of analytical constants such as Acid value, Saponification value, Ester value, Iodine value, Acetyl value, Reichert Meisel (RM) value 4) Explain the synthesis and reactions of polynuclear hydrocarbons 5) Describe the stability of cycloalkanes through Baeyer's strain theory, Coulson and Moffitt's modification and Sachse Mohr's theory
BP302T Physical Pharmaceutics-I	The students should be able to: 1) Explain the solubility behaviour of drugs and the laws explaining them 2) Explain the physical states of matter/molecules and determinization of their properties 3) Describe the importance of surface and interfacial phenomenon in the pharmaceutical formulations 4) Explain the process of complexation and protein binding 5) Describe the role of buffers in pharmaceutical and biological systems
BP303T Pharmaceutical Microbiology	The students should be able to: 1) Explain the ultra-structure and morphological classification of bacteria's 2) Describe the staining techniques and sterilization process 3) Explaining the mode of action, factors influencing and efficiency evaluation of disinfectants, antiseptics, bacteriostatic and bactericidal agents 4) Describe the importance of aseptic area and laminar flow equipment's for the microbiological processes 5) Explain about the microbial spoilage and preservation techniques of pharmaceutical products
BP304T Pharmaceutical Engineering	The students should be able to: 1) Describe the basic principles and pharmaceutical applications of size reduction and size separation 2) Explain the basic principles, methodology and applications of heat transfer, evaporation and distillation in pharmaceutical preparations 3) Describe the basic principles and pharmaceutical applications of drying and mixing 4) Explain the theories, principles, factors influencing filtration and centrifugation 5) Describe the plant construction, corrosion and corrosion prevention strategies

BP305P Pharmaceutical Organic Chemistry –II	The students should be able to: 1) Perform systematic qualitative analysis of unknown organic compounds 2) Determine the analytical constants (Acid value, Saponification value, Ester value, Iodine value, Acetyl value, Reichert Meisel (RM) value) 3) Prepare organic derivatives through oxidation, acetylation, esterification, diazotization, Claisen Schmidt reaction and Perkin reaction
BP306P Physical Pharmaceutics-I	The students should be able to: 1) Determine the solubility, pKa value and partition coefficient of pharmaceutical products. 2) Determine the surface tension, HLB number, Freundlich and Langmuir constant of pharmaceutical products. 3) Determine the critical micellar concentration, stability constant and donor acceptor ratio of pharmaceutical complexes
BP307P Pharmaceutical Microbiology	The students should be able to: 1) Explain the principles of sterilization, performing sterility testing of pharmaceuticals and sterilization of media... 2) Prepare nutrient stabs and slants, perform sub culturing and motility determination of bacteria and fungus.... 3) Perform microbiological analysis of water and antibiotics.
BP308P Pharmaceutical Engineering	The students should be able to: 1) Determine the moisture content, loss on drying and humidity of air 2) Perform size analysis by sieving techniques 3) Study the effect of time on the rate of crystallization
B. Pharmacy IV Semester	
BP401T Pharm. Organic Chemistry III	The students should be able to: 1) Explain the concept of stereoisomerism, resolution of racemic mixture and asymmetric synthesis 2) Describe the principle of geometrical isomerism, stereospecific and stereoselective reactions 3) Explain the synthesis, reactions and medicinal uses pyrrole, furan, and thiophene derivatives 4) Explain the synthesis, reactions and medicinal Pyrazole, Imidazole, Oxazole and Thiazole Pyridine, Quinoline, Isoquinoline, Acridine and Indole derivatives 5) Explain the principle and pharmaceutical application of metal hydride reduction, Clemmensen reduction, Birch reduction, Wolff Kishner reduction, Oppenauer-oxidation, Dakin, Beckmanns rearrangement, Schmidt rearrangement and Claisen-Schmidt condensation reactions
BP402T Medicinal Chemistry – I	The students should be able to: 1) Explain the influence of physicochemical properties, drug metabolism and stereochemistry of drugs on pharmacological functions 2) Describe the adrenergic transmission, chemical classes, synthesis and structure-activity relationship of adrenergic agents 3) Describe the cholinergic transmission, chemical classes, synthesis and structure-activity relationship of cholinergic agents 4) Explain the chemical classes, synthesis, and structure-activity relationship of sedative, anticonvulsants and antipsychotics

	5) Explain the chemical classes, synthesis and structure-activity relationship of general anesthetics, analgesics and anti-inflammatory agents.

BP403T Physical Pharmaceutics-II	The students should be able to: 1) Explain the concept of colloidal dispersions and general properties dispersed systems 2) Describe the rheological properties of newtonian systems and non-newtonian systems and emulsions 3) Explain the stability of flocculated and deflocculated suspensions, emulsions and preservation of emulsions 4) Describe the concept of particle size and distribution, derived properties, porosity, packing arrangement, densities, bulkiness & flow properties of powders 5) Explain the stability of drug, factors influencing the chemical degradation of pharmaceutical dosage forms.
BP404T Pharmacology-I	The students should be able to: 1) Explain the concepts of pharmacokinetics and enzyme kinetics 2) Describe the evaluation of drug discovery process, different phases of clinical trials and pharmacovigilance. 3) Describe the fate of adverse drug reactions and drug interactions 4) Explain the pharmacology and mechanism of action of drugs acting on autonomic and central nervous systems 5) Educate society regarding the preventive measures of adverse reactions and diseases
BP405T Pharmacognosy and phytochemistry-I	The students should be able to: 1) Explain the importance and methods for quality control of drugs of natural origin 2) Explain the cultivation, collection, processing and storage of natural drugs 3) Explain the principles and application of plant tissue culture: 4) Describe the role of Ayurveda, Unani, Siddha, Homeopathy and Chinese systems of medicine in the health care. 5) Explain the phytochemistry and application of primary and secondary metabolites of plants and marine sources.
BP406P Medicinal Chemistry – I	The students should be able to: 1) Prepare intermediate compounds and drugs of medicinal importance 2) Analyze and determine the purity of drug present in the bulk and dosage forms. 3) Determine the partition coefficient of pharmaceutical agents.
BP407P Physical Pharmaceutics-II	The students should be able to: 1) Determine the particle size distribution, bulk density, true density and porosity of pharmaceuticals 2) Determine the viscosity and sedimentation volume of pharmaceuticals 3) Determine the reaction rate, constant first order, reaction rate constant second order, accelerated stability studies of pharmaceuticals
BP408P Pharmacology-I	The students should be able to: 1) Explain and adopt the guidelines prescribed by the CPCSEA for the maintenance and handling of laboratory animals 2) Excel in the techniques such as blood withdrawal, serum and plasma

	separation, anesthetics and euthanasia 3) Explain the advantages and effectiveness of computer simulated animal experiments.

BP409P Pharmacognosy and phytochemistry-I	The students should be able to: 1) Perform chemical tests and morphological evaluation to report on the phytochemical nature of crude drugs 2) Determine phytochemical constants such as ash value, extractive values, moisture content, swelling index, stomatal number, vein islet number, vein 3) Determine the number and size of starch grains, fiber length and fiber width
B. Pharmacy V Semester	
BP501T Medicinal Chemistry – II	The students should be able to: 1) Explain the chemical classes, synthesis and structure-activity relationship of anticancer agents 2) Describe the histaminergic transmission, chemical classes, synthesis and structure-activity relationship of antihistamines 3) Describe the chemical classes, synthesis and structure-activity relationship of cardiovascular agents 4) Explain the chemical classes, synthesis and structure-activity relationship of local anesthetics, antidiabetic drugs and thyroid agents 5) Outline the structure, physiological role of drugs acting on endocrine system
BP502T Industrial Pharmacy-I	The students should be able to: 1) Describe the various aspects of preformulation studies and their impact in the stability of dosage form 2) Explain the techniques, quality control tests and stability testing of tablets and capsules 3) Describe the production procedure, aseptic processing and evaluation of parenteral and ophthalmic preparations 4) Describe the formulation aspects of cosmetic products such as lipsticks, shampoos, cold cream and vanishing cream 5) Explain the packaging of pharmaceutical products, legal and official requirements for containers, stability aspects of packaging materials
BP503T Pharmacology – II	The students should be able to: 1) Explain the pharmacology and mechanism of action of drugs acting on cardiovascular system 2) Explain the pharmacology and mechanism of action of drugs acting on urinary system 3) Describe the pharmacology and mechanism of action of autocoids and related drugs 4) Describe the basic concepts in endocrine pharmacology and pharmacology of analogues and inhibitors 5) Explain the principles and applications of bioassay.
BP504T Pharmacognosy and phytochemistry	The students should be able to: 1) Metabolic pathways of higher plants 2) Explain the phytochemistry and application of secondary metabolites of plants.

-II	3) Explain the isolation and analysis of secondary metabolites 4) Explain the industrial production, estimation and utilization of natural drugs 5) Explain the principles and application of extraction techniques used in the analysis and isolation of phytoconstituents

BP505T Pharmaceutical Jurisprudence	The students should be able to: 1) Explain and implement the objectives, import and manufacture requirements of drugs asper Drugs and Cosmetics Act, 1940 and its rules 1945 2) Explain and implement the objectives and requirements of sale, labeling & packing of drugs and administration of drugs asper Drugs and Cosmetics Act, 1940 and its rules 1945 3) Explain and implement the objectives and requirements of Pharmacy Act –1948, Medicinal and Toilet Preparation Act –1955, Narcotic Drugs and Psychotropic substances Act-1985 and Rule 4) Explain and implement the objectives and requirements of Drugs and Magic Remedies Act and its Rules, Prevention of Cruelty to animals Act-1960, and National Pharmaceutical Pricing Authority 5) Describe the importance of Medical Termination of Pregnancy Act, Right to Information Act and Intellectual Property Rights (IPR)
BP506P Industrial Pharmacy-I	The students should be able to: 1) Perform pre-formulation studies, coating and evaluation of tablets 2) Prepare and evaluate creams and injections 3) Perform the quality control test for marketed tablets and capsules
BP507P Pharmacology – II	The students should be able to: 1) Demonstrate effect of drugs on isolated organs/tissues by simulated experiments 2) Demonstrate the effect of drugs on through bioassay 3) Determine PA_2 value, PD_2 value, effect of spasmogens and spasmolytics, anti-inflammatory activity and analgesic activity
BP508P Pharmacognosy and phytochemistry -II	The students should be able to: 1) Explain the morphology, powder characteristics and identification tests of phytoconstituents 2) Isolate and detect the active phytoconstituents 3) Identification and separation of phytoconstituents through paper and thin-layer chromatography
B. Pharmacy VI Semester	
BP601T Medicinal Chemistry – III	The students should be able to: 1) Explain the chemical classes, synthesis and structure-activity relationship of antibiotics 2) Describe the histaminergic transmission, chemical classes, synthesis and structure-activity relationship of antimalarials 3) Describe the chemical classes, synthesis and structure-activity relationship of antitubercular and urinary tractacting agents 4) Explain the chemical classes, synthesis and structure-activity relationship of antifungal, antiviral drugs and thyroid agents 5) Describe the drug design approaches, pharmacophore modelling and combinatorial chemistry features

BP602T Pharmacology – III	The students should be able to: 1) Explain the pharmacology and mechanism of action of drugs acting on respiratory system 2) Explain the pharmacology and mechanism of action of drugs acting on gastrointestinal system 3) Describe the pharmacology and mechanism of action of autocoids and related drugs 4) Describe the basic concepts in endocrine pharmacology and pharmacology of analogues and inhibitors 5) Explain the principles and applications of bioassay.
BP603T Herbal Drug Technology	The students should be able to: 1) Describe the Principles of Ayurveda, Siddha, Unani and Homeopathy Medicine Systems 2) Explain the effect of Herbal-Drug and Herb-Food Interactions 3) Describe the raw materials, excipients and different herbal cosmetic products 4) Explain and adopt WHO & ICH guidelines and stability testing of herbal drugs. 5) Explain the strategies for the Good Manufacturing Practice of Indian systems of medicine
BP604T Biopharmaceutics and Pharmacokinetics	The students should be able to: 1) Explain the basic concepts in biopharmaceutics and pharmacokinetics of drug products and their clinical significance. 2) Explain the objectives, measurement and improvement of bioavailability and bioequivalence of drugs 3) Explain the significance of pharmacokinetics parameters such as t1/2, Vd and AUC 4) Explain the concept, principle and calculations aspects of Multicompartment models 5) Explain the concept, principle and application of nonlinear pharmacokinetic calculations
BP605T Pharmaceutical Biotechnology	The students should be able to: 1) Explain the principle and applications of enzyme immobilization and of biosensors in pharmaceutical Industries 2) Explain the principle and pharmaceutical applications of recombinant DNA technology 3) Describe the general method of preparation, storage and stability of bacterial vaccines, toxoids, viral vaccine, antitoxins, serum-immune and blood derivatives 4) Explain the principle and applications of ELISA, Western blotting and Southern blotting techniques in biological product development 5) Describe the various fermentation methods and sterilization methods adopted in biological production

BP606T Pharmaceutical Quality Assurance	The students should be able to: 1) Explain the elements and guidelines of Total Quality Management (TQM), ICH and Quality by design (QbD) aspects 2) Describe the construction and plant layout of organization and in a pharmaceutical industry 3) Explain the procedures and guidelines for the Quality Control and Good Laboratory Practices 4) Describe the importance and evaluation of document maintenance 5) Explain the general principle, importance and validation of instruments
BP607P Medicinal Chemistry – III	The students should be able to: 1) Prepare intermediate compounds and drugs of medicinal importance 2) Analyze and determine the purity of drug present in the bulk and dosage forms. 3) Determine the physicochemical and druglike properties of drugs using drug design softwares.
BP608P Pharmacology – III	The students should be able to: 1) Demonstrate the agonist and antagonist effect of drugs on simulated experiments 2) Evaluate the toxicity aspects of drugs and related products on simulated experiments 3) Calculate and evaluate the pharmacological effect through calculation of pharmacokinetic parameters using biostatistics methods (ANOVA)
BP609P Herbal Drug Technology	The students should be able to: 1) Determine the alcohol content of Asava and Arista products 2) Prepare and evaluate cosmetic creams, lotions, shampoos, syrups, mixtures and tablets as per Pharmacopoeial requirements 3) Determine the aldehyde content, phenol content and total alkaloids of herbal formulations
B. Pharmacy VII Semester	
BP701T Instrumental Methods of Analysis	The students should be able to: 1) Explain the principle, instrumentation and pharmaceutical applications of interactions of electromagnetic radiations with drugs 2) Explain the principle, instrumentation and applications of vibrational spectrophotometric drug analysis 3) Explain the principle and applications of chromatographic separation in drug analysis 4) Describe the principle, instruments and applications of gas and liquid chromatographic separation in drug analysis 5) Describe the principle and applications of electrophoretic techniques
BP702T Industrial Pharmacy-II	The students should be able to: 1) Describe the pilot plant scale up requirements, SUPAC guidelines, and platform technology 2) Explain about the importance of WHO guidelines for Technology Transfer and technology transfer agencies in India 3) Describe about the historical overview and responsibility of regulatory affairs department 4) Explain the concepts of quality control, Quality by Design (QbD), ISO quality systems standards,

	5) Explain the organization, responsibilities and certification of Central Drug Standard Control Organization and State Licensing Authorities
BP703T Pharmacy Practice	The students should be able to: 1) Describe the organizational set up of hospital, hospital pharmacy, community pharmacy and drug store inventory control 2) Explain the process of monitoring, detecting and reporting adverse drug reactions 3) Describe the functions of drug distribution system, therapeutic drug monitoring system and pharmacy and therapeutic committee 4) Explain the importance of patient counselling and education and training program for pharmacists 5) Perform interpretation of clinical laboratory tests
BP704T Novel Drug Delivery System	The students should be able to: 1) Explain the strategies for the development of controlled approaches, mucosal and implantable drug delivery approaches 2) Describe the role of microencapsulation in the drug development 3) Explain the strategies and applications of Transdermal, gastroretentive, ocular and nasopulmonary drug delivery approaches 4) Explain the concepts and applications of liposomes, niosomes, nanoparticles, monoclonal antibodies for the targeted delivery 5) Describe the development and applications of intra uterine devices (IUDs) and applications
BP705P Instrumental Methods of Analysis	The students should be able to: 1) Estimate the amount of drugs present in the pharmaceutical products using colorimetric, UV visible and Fluorometric principles 2) Determine the ions through flame photometry and nephelo turbidometry methods 3) Separate and evaluate the natural products using paper, thin layer chromatography and column chromatography techniques
BP706PS Practice School	The students should be able to: 1) Carry out advanced experimental procedures in the drug development disciplines 2) Explain the concepts of advanced drug design and development concepts 3) Describe the advances in the areas of pharmacology, biotechnology and drug delivery systems
B. Pharmacy VIII Semester	
BP801T Biostatistics and Research Methodology	The students should be able to: 1) Apply and explain the concepts and applications of statistical techniques 2) Apply and explain the pharmaceutical applications of regression and parametric tests 3) Explain the advanced drug research tools such as design of experiments, plagiarism software 4) Explain the clinical applications of statistical analysis software tools in the clinical development 5) Describe the principle, methodology and applications of factorial design and response surface methodology techniques in the pharmaceutical processes

BP802T Social and Preventive Pharmacy	The students should be able to: 1) Explain the causes and evaluation of diseases and public health. 2) Describe the preventive measures of life threatening diseases 3) Explain the objectives and functions of national health and immunization programs 4) Describe the objectives and role of WHO in national health and immunization programs 5) Explain the importance and execution of the Health promotion and education programs in schools
BP803ET Pharma Marketing Management	The students should be able to: 1) Explain the concepts and role of pharmaceutical marketing strategies 2) Describe the concepts and functions of product management 3) Explain the importance and strategies of online promotional techniques for OTC products. 4) Describe the functions of pharmaceutical marketing channels 5) Explain the functions of Drug Price Control Order and National Pharmaceutical Pricing Authority
BP804ET Pharmaceutical Regulatory Science	The students should be able to: 1) Explain the concept, scope and benefits of the generic drug product development 2) Describe about the different drug regulatory approval agencies and drug approval process 3) Explain about Drug Master Files (DMF), Common Technical Document (CTD), electronic Common Technical Document (eCTD) and ASEAN Common Technical Document (ACTD) research 4) Describe about the clinical trial development and pharmacovigilence 5) Explain the concepts and functions of Orange book, Federal Register, Code of Federal Regulatory and Purple book
P805ET Pharmacovigilance	The students should be able to: 1) Explain the history, development and regulatory guidelines of pharmacovigilance 2) Describe the procedures to establishment and surveillance of pharmacovigilance programmes 3) Explain the ICH guidelines for the functioning of pharmacovigilance programmes 4) Describe the concept of pharmacogenomics of adverse drug reactions and drug safety evaluation 5) Explain the principles involved in the classification of drugs
BP806ET Quality Control and Standardization of Herbals	The students should be able to: 1) Explain the quality control, quality assurance, storage and evaluation of herbal drugs 2) Describe the WHO, EU and ICH guidelines for quality control, current good manufacturing practices (cGMP) and GACP for herbal medicines 3) Explain the research guidelines for evaluating the safety and efficacy of herbal medicines 4) Describe the importance of stability testing in the evaluation of herbal medicines

	5) Explain the role of chemical and biological markers in standardization of herbal products
BP807ET Computer-Aided Drug Design	The students should be able to: 1) Describe the concepts of drug discovery and design strategies 2) Explain the principle and applications of quantitative- structure activity relationship (QSAR) in the lead optimization process 3) Describe the virtual screening approaches and their applications in the drug discovery science 4) Explain the principle and applications of molecular modeling techniques 5) Describe the importance of bioinformatics analysis in the drug design
BP808ET Cell and Molecular Biology	The students should be able to: 1) Describe the foundations and applications of molecular biology. 2) Summarize the DNA properties of cell biology. 3) Describe protein structure and function. 4) Describe basic molecular genetic mechanisms. 5) Summarize the Cell signals and signalling pathways
BP809ET Cosmetic Science	The students should be able to: 1) Explain the evolution, types and applications of cosmetic products 2) Explain the principle and formulations aspects of skin and hair care products 3) Describe the benefits of herbal cosmetics 4) Explain the analytical methods for the evolution of cosmetic products 5) Explain the mechanism of action and problems of cosmetic products
BP810ET Pharmacological screening methods	The students should be able to: 1) Explain the CPCSEA and OECD guidelines for maintenance, breeding and conduct of experiments on laboratory animals 2) Describe the techniques for collection of blood and common routes of drug administration in laboratory animals, 3) Explain the rationale for selection of preclinical models 4) Demonstrate the various screening methods used in preclinical research 5) Describe the tools used in the for the pre-clinical data analysis and interpretation
BP811ET Advanced Instrumentation Techniques	The students should be able to: 1) Explain the principle, instrumentation and applications of NMR and mass spectroscopy methods in the drug analysis and drug discovery 2) Explain the principle, instrumentation and applications of thermal and X-ray diffraction methods in the drug analysis and drug discovery 3) Describe the ICH and USFDA guidelines for the calibration and validation of instruments 4) Explain the principle, instrumentation and applications of radio immune assay in the drug analysis and drug discovery 5) Explain the principle, instrumentation and applications of hyphenated techniques in the drug analysis and drug discovery

BP812ET Dietary Supplements and Nutraceuticals	The students should be able to: 1) Explain the health benefits of nutraceuticals and Dietary supplements 2) Explain the chemistry and functions of phytochemicals as nutraceuticals 3) Describe the generation of free radicals and their role in tissue damage 4) Explain the role of natural antioxidants in preventing the free radical mediated diseases 5) Describe the function of regulatory authorities (FSSAI, FDA, FPO, MPO, AGMARK. HACCP) in maintaining the safety aspects of nutraceuticals
BP813ET Pharmaceutical Product Development	The students should be able to: 1) Explain the objectives, regulations and stability assessment aspects related to pre-formulation 2) Describe the role of pharmaceutical excipients in pharmaceutical product development 3) Describe the aelection and application of excipients in pharmaceutical formulations industrial applications 4) Explain the objectives and applications of optimization techniques in pharmaceutical product development 5) Describe the quality control testing of packaging materials for pharmaceutical product
BP813PW Project Work	The students should be able to: 1) Study on multidisciplinary areas related to pharmacy profession. 2) Develop required skills for technical presentation. 3) Concentrate on specific topic in scientific and pharmacy fields. 4) Gain more advanced knowledge of the research and manuscript writing 5) Describe new trends among group of students and faculties.

Semester wise credits distribution

Semester	Credit Points
I	**27/29$/30#**
II	29
III	26
IV	28
V	26
VI	26
VII	24
VIII	22
Extracurricular/ Co curricular activities	01*
Total credit points for the program	**209/211$/212#**

* The credit points assigned for extracurricular and or co-curricular activities shall be given by the Principals of the colleges and the same shall be submitted to the University. The criteria to acquire this credit point shall be defined by the colleges from time to time.

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

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

Programme outcomes

Based on the B. Pharmacy program's educational objectives, students will achieve the following specific program outcomes. The programme outcomes are given by the NBA as given below.

1. **Pharmacy Knowledge:** Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical sciences; behavioral, social, and administrative pharmacy sciences; and manufacturing practices.
2. **Planning Abilities:** Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.
3. **Problem analysis:** Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.
4. **Modern tool usage:** Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations.
5. **Leadership skills:** Understand and consider the human reaction to change, motivation issues, leadership and team-building when planning changes required for fulfillment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and well-being.
6. **Professional Identity:** Understand, analyze and communicate the value of their professional roles in society (e.g. health care professionals, promoters of health, educators, managers, employers, employees).
7. **Pharmaceutical Ethics:** Honour personal values and apply ethical principles in professional and social contexts. Demonstrate behavior that recognizes cultural and personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.
8. **Communication:** Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions.
9. **The Pharmacist and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety and legal issues and the consequent responsibilities relevant to the professional pharmacy practice.
10. **Environment and sustainability:** Understand the impact of the professional pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
11. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self-assess and use feedback effectively from others to identify learning needs and to satisfy these needs on an ongoing basis.

4.2 PHARM.D

Pharm. D – First Year

S. No.	Name of Subject	No. of hours of Theory	No. of hours of Practical	No. of hours of Tutorial
1.1	Human Anatomy and Physiology	3	3	1
1.2	Pharmaceutics	2	3	1
1.3	Medicinal Biochemistry	3	3	1
1.4	Pharmaceutical Organic Chemistry	3	3	1
1.5	Pharmaceutical Inorganic Chemistry	2	3	1
1.6	Remedial Mathematics/ Biology	3	3*	1
	Total hours	**13/16^{+}**	**15/18***	**5/6^{+}* = 33/37^{+}/40***

$^{+}$ For Mathematics (PCB students) * For Biology (PCM students)

Pharm. D – Second Year

S.No	Name of Subject	No. of hours of Theory	No. of hours of Practical	No. of hours of Tutorial
2.1	Pathophysiology	3	-	1
2.2	Pharmaceutical Microbiology	3	3	1
2.3	Pharmacognosy & Phytopharmaceuticals	3	3	1
2.4	Pharmacology-I	3	-	1
2.5	Community Pharmacy	2	-	1
2.6	Pharmacotherapeutics-I	3	3	1
	Total hours	**17**	**9**	**6**
	Grand Total	**32 hrs/ week**		

Pharm. D – Third Year

S.No.	Name of Subject	No. of hours of Theory	No. of hours of Practical	No. of hours of Tutorial
3.1	Pharmacology-II	3	3	1
3.2	Pharmaceutical Analysis	3	3	1
3.3	Pharmacotherapeutics-II	3	3	1
3.4	Pharmaceutical Jurisprudence	2	-	-
3.5	Medicinal Chemistry	3	3	1
3.6	Pharmaceutical Formulations	2	3	1
Total hours		**16**	**15**	**5**
Grand Total		**36 hrs/ week**		

Pharm. D – Fourth Year

S.No.	Name of Subject	No. of hours of Theory	No. of hours of Practical/ Hospital Posting	No. of hours of Tutorial
4.1	Pharmacotherapeutics-III	3	3	1
4.2	Hospital Pharmacy	2	3	1
4.3	Clinical Pharmacy	3	3	1
4.4	Biostatistics & Research Methodology	2	-	1
4.5	Biopharmaceutics & Pharmacokinetics	3	3	1
4.6	Clinical Toxicology	2	-	1
4.7	Pharmacotheraputics I & II*	3	3	1
	Total hours	**15/18**	**12/15**	**6/7 = 33/40***

***** Additional subject for Post Baccalaureate students

Pharm. D – Fifth Year

S.No.	Name of Subject	No. of hours of Theory	No. of hours of Practical/ Hospital Posting	No. of hours of Seminar
5.1	Clinical Research	2	--	1
5.2	Pharmacoepidemiology and Pharmacoeconomics	3	--	1
5.3	Clinical Pharmacokinetics & Pharmacotherapeutic Drug Monitoring	2	--	1
5.4	Clerkship *	--	--	1
5.5	Project work (Six Months)	--	20	--
	Total hours	**7**	**20**	**4**
	Grand Total	**31 hrs/ week**		

Pharm. D – Sixth Year (Internship)

The internship training in the final year (VI Pharm D) of the course provides working experience in a variety of clinical settings and an opportunity to deliver pharmaceutical care services independently. Internship training includes mandatory postings of six months in internal medicine department and two months posting each in any three other specialty departments such as pediatrics, surgery, gynaecology & obstetrics, psychiatry, dermatology, and orthopedics.

Course Outcomes

Sl. No.	Name of the Program	Name of the Course	Course Outcome
1.1	Pharm.D. – First Year	Human Anatomy and Physiology	1. They would have learnt the gross anatomy, histology and physiology of various organs of the human body. 2. They would identify the various tissues and organs associated with the different organ systems with help of charts and specimens. 3. They would have studied the coordination in functioning of different organs of each system. 4. They would have understood the several physiological homeostatic mechanisms and their imbalances in human body. 5. They would have learnt the interlinked mechanisms in the maintenance in normal and physical exercise conditions. 6. They would have learnt and performed the hematological tests parameters, bloodpressure recording, heart rate, pulse and respiratory volumes.
1.2		Pharmaceutics	1. Upon completion of this program the student will know the formulation aspects of different dosage forms do different pharmaceutical calculation involved in formulation and appreciate the importance of good formulation for effectiveness.

1.3		Medicinal Biochemistry	1. To understand the importance of metabolism of substrates. 2. Will acquire chemistry and biological importance of biological macromolecules. 3. To acquire knowledge in qualitative and quantitative estimation of the biological macromolecules. 4. To know the interpretation of data emanating from a Clinical Test Lab. 5. To know how physiological conditions influence the structures and reactivity's of biomolecules. 6. To understand the basic principles of protein and polysaccharide structure. 7. To understand the basic principles ofprotein and polysaccharide structure.

1.4		Pharmaceutical Organic Chemistry	1. To be able to give systematic names to simple organic compounds and poly functional group. 2. To achieve an understanding of the behavior of organic compounds and to establish a foundation for studies into natural and synthetic products ofpharmaceutical interest. 3. To acquire the knowledge andunderstanding of the basic experimental principles of pharmaceutical organic chemistry. 4. To draw the structures and synthesize simple pharmaceutically active organic compounds. 5. To describe detailed mechanisms for common reactions. 6. To be able to run experimental techniques, procedures and safelaboratory practices.
1.5		Pharmaceutical Inorganic Chemistry	1. Well acquainted with the principles of limit tests. 2. Understand the principles and procedures of analysis of drugs and also regarding the application of inorganic pharmaceutical. 3. Knowledge about the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals 4. Appreciate the importance of inorganic pharmaceuticals in preventing and curing the disease. 5. To have been introduced to a variety of inorganic drug classes. 6. To know the analysis of the inorganic pharmaceuticals their applications.

1.6		**Remedial Mathematics** **Remedial Biology**	1. Apply mathematical concepts and principles to perform computations for Pharmaceutical Sciences. 2. Create, use and analyze mathematical representations and mathematical relationships 3. Communicate mathematical knowledgeand understanding to help in the field ofClinical Pharmacy 4. Perform abstract mathematical reasoning The main aim of this course is to make aware the students to understand and learn about 1. Cell biology (Basic Nature of Plant cell and Animal cell) 2. Classification System of both Plants & Animals 3. Various tissue system and organ system in plant and animals 4. Theory of evolution 5. Anatomy and Physiology of plants and animals
2.1	Pharm.D.- Second Year	Pathophysiology	1. Students will define the basic pathogenesis of human disease 2. Students will define and explore the most common etiologies and predisposing factors associated with human disease 3. Students understands the basis for some laboratory tests and other diagnostic procedures 4. Students will make correlations between pathophysiology and clinical skills they are learning in their allied health science programs. 5. Students will understand how the various organ systems are interrelated, and use this understanding to promote a holistic approach towards the evaluation and treatment of patients

2.3		Pharmacognosy& Phytopharmaceuticals	This course is one of the most advanced introductions in Herbal Medicines that is offered. Will learn and get experience about 1. Herbs and their Science 2. Classification of Medicinal Plants, Phytochemistry, Carbohydrates, Lipids, 3. Terpenes, Polyphenols, Alkaloids, Pharmacology, Toxicity, Formulations and Preparations of Herbal Medicines 4. How herbs influence our physiology andcan be helpful against several disorders. 5. Relationsbetween Phyto-therapy and the Elderly, Phytotherapy and Children, Understanding Herbal Action, and Understanding the MateriaMedica. 6. The recognition of medicinal plants, identification of adulteration andContamination. 7. Ethnobotany &Ethno pharmacology in drug discovery process. 8. DNA Finger printing.
2.4		Pharmacology - I	1. The student would have learnt about the different drugs used with an emphasis on its classification, Pharmacodynamic and pharmacokinetic aspects, adverse effects, Therapeutic uses. 2. They would have studied, dose, route of administration, precautions, and contraindications. 3. They would have understood the pharmacological aspects of drugs used totreat ailment of different organ systems of the body. 4. They would appreciate the importance of drug discovery by preclinical and clinical trials. 5. They would appreciate the importance of pharmacology subject as a basis of therapeutics. 6. They would apply the knowledge of

			drugs and its detailed description therapeutically in clinical case scenario.
2.5		Community Pharmacy	1. Students will provide patient- centered care to diverse patients using the best available evidence and in considerationof patients' circumstances to devise, modify, implement, document and monitor pharmacotherapy care plans, either independently or as part of healthcareteam 2. Students will demonstrate knowledgeof the business and professional practice management skills in community pharmacies. 3. Students will educate patients through counseling &provide health screening services to public 4. Students will identify symptoms of minor ailments and provide appropriate medication 5. Students will participate in prevention programs of communicable diseases 6. Students will exhibit professional ethics by promoting safe and appropriate medication use throughout society
2.6		Pharmacotherapeutics– I	1. Students will be able to describe the pathophysiology and management of cardiovascular,respiratory and endocrine diseases 2. Students will be developing Patient case based Assessment Skills 3. Students willbe able to describe the quality use of medicines issues surrounding the therapeutic agents inthe treatment of these diseases 4. Students will have developed clinical skills in the therapeutic management of these conditions 5. Continue to develop communication skills. 6. Students will provide patient –

			centred care to diverse patients usingthe evidence based medicine
3.1	Pharm. D. – Third Year	Pharmacology -II	1. In continuation with the previous year, this subject would have continued describing about the different drugs used for treatment of diseases. 2. The students would have learnt about drugs used to cancer, inflammation, respiratory system, GIT, immune system and hormones. 3. They would have understood the principles of animal toxicology and bioassay procedures. 4. They would have learnt in depth knowledge on cell, macromolecules, cell signaling, DNA replication and cell cycle. 5. They would appreciate the importance of gene and its structure, genome, gene expression, recombinant DNA technologyand other associated aspects. 6. They would have finally learnt to apply the knowledge of drugs practically using simulated pharmacological experiments.
3.2		Pharmaceutical Analysis	1. To understand the importance of analysis in pharmaceutical industry 2. To understand the knowledge about assay of pharmaceutical substance andproduct 3. To develop basic practical skills using instrumental techniques 4. To inculcate theoretical knowledge on various instrumental techniques adopted for analysis of pharmaceuticals 5. To develop various methodologies for assay of drugs and pharmaceuticals with the skills and knowledge gained 6. To understand and gain knowledge

			on trouble shooting in adoptingvarious methodologies using instrumental techniques
3.3		Pharmacotherapeutics – II	1. Students will be able to describe the pathophysiology and management of cardiovascular,respiratory and endocrine diseases 2. Students will be developing Patient case based Assessment Skills 3. Students willbe able to describe the quality use of medicines issues surrounding the therapeutic agents inthe treatment of these diseases 4. Students will have developed clinical skills in the therapeutic management of these conditions 5. Continue to develop communication skills. 6. Students will provide patient – centred care to diverse patients using the evidence based medicine
3.4		Pharmaceutical Jurisprudence	Upon Completion of the subject student learnt: 1. About Professional ethics 2. They understood the various concepts of the Pharmaceutical Legislation in India. 3. They understood the various parameters in the Drug and Cosmetic Act and rules. 4. They understood the various concepts of Drug policy, DPCO, Patent and Designing act. 5. They came to know about the labelling requirements and packaging guidelinesfor Drugs and Cosmetics. 6. They understood the concepts of Dangerous Drugs Act, Pharmacy Act andExcise duties Act. 7. They came to know about the salient features of different laws which have been prescribed by the Pharmacy Council of India from

			time to time including InternationalLaws.
3.5		Medicinal Chemistry	1. To understand the chemistry of drugs with respect to their biological activity. 2. To know the metabolism, adverse effect and therapeutic activity of drugs. 3. To understand the different modern techniques of drug design. 4. To appreciate the SAR of some important drug classes. 5. To acquire knowledge in the chemotherapy for cancer and microbial diseases and different anti-viral agents. 6. To have been introduced to a varietyof drug classes and some pharmacological properties.
3.6		Pharmaceutical Formulations	Students will understand the principle involved in formulation of various pharmaceutical dosage forms, prepare various pharmaceutical formulation, perform evaluation of pharmaceutical dosage forms, understand and appreciate the concept ofbioavailability and bioequivalence, theirrole in clinical situations.
4.1		Pharmacotherapeutics -III	1. Initiate drug therapy and the anticipated therapeutic goals by therapeutic intervention 2. Know the effective use of non-pharmacological therapeutic interventions in the treatment of specific diseases, conditions and symptoms. 3. Demonstrate the ability to effectively communicate and work collaboratively together with others in the small group setting

			Have moral reasoning, ethical judgement and professionalism
4.2	Pharm.D.-Fourth Year	Hospital Pharmacy	1. Know Various Drug Distribution Methods; 2. Know The Professional Practice Management Skills In Hospital Pharmacies; 3. Provide Unbiased Drug Information To The Doctors; 4. Know The Manufacturing Practices Of Various Formulations In Hospital Set Up; 5. Appreciate The Practice Based Research Methods; And 6. Appreciate the stores management and inventory control.
4.3		Clinical Pharmacy	1. Monitor drug therapy of patient through medication chart review andclinical review; 2. Obtain medication history interview and counsel the patients; 3. Identify and resolve drug related problems; 4. Detect, assess and monitor adversedrug reaction; 5. Interpret selected laboratory results (as monitoring parameters in therapeutics) of specific disease states; and 6. Retrieve, analyze, interpret and formulate drug or medicine information.
4.4		Biostatistics & Research Methodology	1. Know the various statistical methods to solve different types of problems 2. Operate various statistical software packages 3. Appreciate the importance of Computer in hospital and Community Pharmacy 4. Appreciate the statistical technique in solving the pharmaceutical problems

4.5		Biopharmaceutics & Pharmacokinetics	1. Broader understanding about the conceptsofbiopharmaceuticsand pharmacokinetics. 2. Ability to calculate the various pharmacokinetic parameters by using various mathematical models. 3. Ability todesignabasicprotocol for the conduct of BA/BE study and the interpretation of the BA/BEdata 4. Preparedness to use the concepts of pharmacokinetic principles in the clinical contexts. 5. Ability to design and perform *in-vitro* dissolutionstudiesforvariousdrugsas perthe standards ofofficial monographs 6. Basicunderstandingabouttheconcepts of *in-vitro-in-vivo* correlations(IVIVC)
4.6		Clinical Toxicology	1. Developing general working knowledge of the principles and practice of clinical toxicology 2. Demonstrating an understanding of the health implications of toxic exposures and commonly involved chemicals for toxicity 3. Demonstrating and applying an understanding of general toxicology principles and clinical management practice 4. Demonstrating and applying an understanding of the history, assessment, and therapy considerations associated with the management of a toxic exposure 5. Demonstrating and apply an understanding of the characteristics ofand treatment guidelines for specific toxic substances 6. Proposing several preventive approaches to reduce unintentional poisonings 7. Enabling the pharmacist to functionas contributing health care team

			member when faced with a toxicexposure experience, including emergencies.
4.7		Pharmacotherapeutics I & II	1. The pathophysiology of selected disease states and the rationale for drugtherapy. 2. The therapeutic approach to management of these diseases. 3. The controversies in drug therapy. 4. The importance of preparation of individualized therapeutic plans based on diagnosis. 5. Needs to identify the patient- specific parameters relevant in initiating drug therapy, and monitoring therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects). 6. Describe the pathophysiology of selected disease states and explain therationale for drug therapy. 7. Summarize the therapeutic approach to management of these diseases including reference to the latest available evidence. 8. Discuss the controversies in drug therapy. 9. Discuss the preparation of individualized therapeutic plans based on diagnosis. 10. Identify the patient-specific parameters relevant in initiating drugtherapy, and monitoring therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects).
5.1		Clinical Research	1. Know the new drug development process. 2. Understand the regulatory and ethical requirements. 3. Appreciate and conduct the clinical

	Pharm.D.- Fifth Year		trials activities 4. Know safety monitoring and reporting in clinical trials 5. Manage the trial coordination process 6. Know the new drug development process. 7. Understand the regulatory and ethical requirements. 8. Appreciate and conduct the clinical trials activities 9. Know safety monitoring and reporting in clinical trials 10. Manage the trial coordination process
5.2		Pharmacoepidemiology& Pharmacoeconomics	1. Describe the methods used in Pharmacoepidemiology 2. Demonstrate competency in the design, conduct and evaluation of Pharmacoepidemiology studies. 3. Describe the methods used in Pharmacoeconomic analysis. 4. Demonstrate competency in the design, conduct and evaluation of Pharmacoeconomic studies.
5.3		Clinical Pharmacokinetics & Pharmacotherapeutic Drug Monitoring	1. Ability to apply the concepts of Pharmacokinetics to individualize the drug dosage regimen in clinical settings. 2. Ability to design a dosage regimen of a drug based on its route of administration 3. Ability to design and implement pharmacokinetic services such as • Intravenous to Oral conversion of dosage regimens • Therapeutic Drug Monitoring Services 4. Broader understanding about the significance of altered pharmacokinetics, Pharmacogenetics and

Appendix 9.2

			Pharmacometrics. 5. Ability to adjust the dosage regimen for patients with renal / hepatic impairments 6. Ability to assess the drug interactionissues in the clinical settings 7. Ability to design and implement therapeutic drug monitoring services for various drugs

Expected competencies for graduates of B.Pharm

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

Expected competencies for graduates of Pharm. D.

1. Development of Knowledge and Skills
2. Assessment of Patient Medical Condition
3. Development of Pharmaceutical Care Plan
4. Management of Patient Medication Therapy
5. Pharmacotherapeutic Decision-Making Skills
6. Hospital Pharmacy Management
7. Promote Public Health Care Program
8. Ethics and Professionalism
9. Analytical Thinking and Interpretational Skills
10. Communication Skills
11. Management Skills
12. Design and Conduct of Need Based Research Projects

13. Life-long Learning

Expected General Outcomes (Pharm. D.)

***1 - Development of Knowledge and Skills*:** The student should understand and possess the required knowledge to demonstrate the ability and utilize scientific knowledge in practice.

2 - Assessment of Patient Medical Condition: The student should be able to gather, document and interpret patient case history including laboratory data and patient-specific medication information from various patient data sources and/or by conducting patient medication history interview. Should also be able to identify and prioritize the drug related problems.

3 - Development of Pharmaceutical Care Plan: The student should be able to formulate a pharmaceutical care plan by working in close relation with healthcare professionals, and patient/care taker in order to ensure the enhanced therapeutic outcome in the patient. Also, the pharmaceutical care plan includes maximization of therapeutic benefit by detecting, preventing and resolving drug related problems. The student should be able to recommend pharmaceutical care plan based on evidence, and follow-up and document the outcome of the pharmaceutical care service provision.

4 - Management of Patient Medication Therapy: The student should be able to review and evaluate the patient medication therapy for the appropriateness. Monitor the clinical progress/outcome of the patient, and modify the plan of therapy as appropriate in order to achieve the set therapeutic goals.

5 - Pharmacotherapeutic Decision-Making Skills: The student should be able to make pharmacotherapy decisions and individualize the patient's drug therapy by considering patient-related and drug–related factors supported by evidence-based and best practice literature. Pharmacotherapeutic decision-making includes recommendation of appropriate use of prescription and non-prescription medications, alternative and complementary therapies and non-drug therapies.

6 – Hospital Pharmacy Management: The student should be able to accurately interpret prescriptions, dispense medications and manage drug distribution system adhering to patient needs and in compliance with hospital policy and the recommendations of regulatory agencies. Also able to prepare inventory, procure, and use appropriate methods drug storage and adopt appropriate techniques of drug distribution to ensure correct dispensing of medicines.

7 – Promote Public Health Care Program: The student should be able to participate in various public health care programs of the nation including disease prevention initiatives to improve public health. Contribute to the development and promotion of national health policies including rational drug use program and essential drug policy.

8 – Ethics and Professionalism: The student should deliver the duties in accordance with legal, ethical, social, economic, and professional guidelines. Able to provide patient care services by making rational and ethical decisions that represent the best interest of the patient and the

society, and respect the patient, healthcare professionals, and the privacy and confidentiality of health information.

9 - Analytical Thinking and Interpretational Skills: The student should be able to retrieve, understand, interpret, apply, analyze, synthesize, and evaluate information. Able to apply critical thinking and interpretational skills to identify, manage, and prevent problems and make appropriate decisions.

***10 - Communication Skills*:** The student should be able to communicate effectively with patients/caretakers, healthcare professionals. Able to effectively counsel, provide medicines information, and educate patients, caretakers & healthcare professionals about medication therapy and other health related issues. Effective communication includes use of both oral and written communications skills and various communication techniques.

***11 – Management Skills*:** The student should be able to set personal and professional goals and priorities, effectively plan and manage time, organize work, and work in a team. Work collaboratively with patients /caretakers, health care professionals, hospital administrators and supportive personnel to manage and use the various resources of the health care system to optimize the drug therapy.

12 – Design and Conduct of Need Based Research Projects: The student should be able to understand the research needs of the region/nation, and design and conduct the research that would add value to the health care requirements of the patients and community/ society.

13 - Life-Long Learning: The student should be able to recognize knowledge and skill deficits that exist in the effective delivery of health care needs of the patient / society. As a life-long learner, student should be able to identify and analyze issues emerging in the advancing healthcare delivery, and set learning goals, locate, interpret appropriate resources, and assess progress toward meeting learning goals.

4.3 M.PHARM

Sl. No.	Branch of Specialization	Sem	Subject Title
1	Pharmaceutics	I	Modern Pharmaceutical Analytical Techniques
			Drug Delivery System
			Modern Pharmaceutics
			Regulatory Affair
			Pharmaceutics Practical I
			Seminar/Assignment
		II	Molecular Pharmaceutics (Nano Tech and Targeted DDS)
			Advanced Biopharmaceutics & Pharmacokinetics
			Computer Aided Drug Delivery System

			Cosmetic and Cosmeceuticals
			Pharmaceutics Practical II
			Seminar/Assignment
2	**Industrial Pharmacy**	**I**	Modern Pharmaceutical Analytical Techniques
			Pharmaceutical Formulation Development
			Novel drug delivery systems
			Intellectual Property Rights
			Industrial Pharmacy Practical I
			Seminar/Assignment
		II	Advanced Biopharmaceutics and Pharmacokinetics
			Scale up and Technology Transfer
			Pharmaceutical Production Technology
			Entrepreneurship Management
			Industrial Pharmacy Practical II
			Seminar/Assignment
3	**Pharmaceutical Chemistry**	**I**	Modern Pharmaceutical Analytical Techniques
			Advanced Organic Chemistry -I
			Advanced Medicinal chemistry
			Chemistry of Natural Products
			Pharmaceutical Chemistry Practical I
			Seminar/Assignment
		II	Advanced Spectral Analysis
			Advanced Organic Chemistry -II
			Computer Aided Drug Design
			Pharmaceutical Process Chemistry
			Pharmaceutical Chemistry Practical II
			Seminar/Assignment
4	**Pharmaceutical Analysis**	**I**	Modern Pharmaceutical Analytical Techniques
			Advanced Pharmaceutical Analysis
			Pharmaceutical Validation
			Food Analysis
			Pharmaceutical Analysis Practical I
			Seminar/Assignment
		II	Advanced Instrumental Analysis
			Modern Bio-Analytical Techniques
			Quality Control and Quality Assurance
			Herbal and Cosmetic Analysis
			Pharmaceutical Analysis Practical II
			Seminar/Assignment
5	**Pharmaceutical Quality Assurance**	**I**	Modern Pharmaceutical Analytical Techniques
			Quality Management System

			Quality Control and Quality Assurance
			Product Development and Technology Transfer
			Pharmaceutical Quality Assurance Practical I
			Seminar/Assignment
		II	Hazards and Safety Management
			Pharmaceutical Validation
			Audits and Regulatory Compliance
			Pharmaceutical Manufacturing Technology
			Pharmaceutical Quality Assurance Practical II
			Seminar/Assignment
6	**Regulatory Affairs**	**I**	Good Regulatory Practices
			Clinical Research Regulations
			Regulations and Legislation for Drugs & Cosmetics, Medical Devices, Biologicals & Herbals, and Food & Nutraceuticals In India and Intellectual Property Rights
			Regulatory Affairs Practical I
			Seminar/Assignment
		II	Regulatory Aspects of Drugs & Cosmetics
			Regulatory Aspects of Herbal & Biologicals
			Regulatory Aspects of Medical Devices
			Regulatory Aspects of Food & Nutraceuticals
			Regulatory Affairs Practical II
			Seminar/Assignment
7	**Pharmacy Practice**	**I**	Clinical Pharmacy Practice
			Pharmacotherapeutics-I
			Hospital & Community Pharmacy
			Clinical Research
			Pharmacy Practice Practical I
			Seminar/Assignment
		II	Principles of Quality Use of Medicines
			Pharmacotherapeutics II
			Clinical Pharmacokinetics and Therapeutic Drug Monitoring
			Pharmacoepidemiology & Pharmacoeconomics
			Pharmacy Practice Practical II
			Seminar/Assignment
8	**Pharmacology**	**I**	Modern Pharmaceutical Analytical Techniques
			Advanced Pharmacology-I
			Pharmacological and Toxicological Screening

			Methods-I
			Cellular and Molecular Pharmacology
			Pharmacology Practical I
			Seminar/Assignment
		II	Advanced Pharmacology II
			Pharmacological and Toxicological Screening Methods-II
			Principles of Drug Discovery
			Experimental Pharmacology practical- II
			Pharmacology Practical II
			Seminar/Assignment
9	**Pharmacognosy**	**I**	Modern Pharmaceutical Analytical Techniques
			Advanced Pharmacognosy-1
			Phytochemistry
			Industrial Pharmacognostical Technology
			Pharmacognosy Practical I
			Seminar/Assignment
		II	Medicinal Plant Biotechnology
			Advanced Pharmacognosy-II
			Indian system of medicine
			Herbal cosmetics
			Pharmacognosy Practical II
			Seminar/Assignment
10	**Pharmaceutical Biotechnology**	**I**	Modern Pharmaceutical Analytical Techniques
			Microbial And Cellular Biology
			Bioprocess Engineering and Technology
			Advanced Pharmaceutical Biotechnology
			Pharmaceutical Biotechnology Practical I
			Seminar/Assignment
		II	Proteins and protein Formulation
			Immunotechnology
			Bioinformatics and Computer Technology
			Biological Evaluation of Drug Therapy
			Pharmaceutical Biotechnology Practical II
			Seminar/Assignment

M. Pharm (III Semester) - Common for All specialization

Course	Credit Hours	Credit Points
Research Methodology & Biostatistics*	4	4
Journal Club	1	1
Discussion / Presentation (Proposal Presentation)	2	2
Research Work	28	14
Total	35	21

* Non University Exam

M. Pharm (III Semester) - Common for All specialization

Course	Credit Hours	Credit Points
Journal Club	1	1
Research Work	31	16
Discussion / Final Presentation	3	3
Total	35	20

Semester wise credits distribution

Semester	Credit Points
I	**26**
II	26
III	21
IV	20
Extracurricular/ Co curricular activities	Min = 02, Max = 07*
Total credit points for the program	Min = 95, Max = 100*

* Credit points for Co-curricular activities

4.4 Diploma

Subjects to be studied under Diploma courses are given below

S. No.	Specialization	Paper	Subject Title
1	Pharmacovigilance	I	Principles of Pharmacovigilance
		II	Regulatory Perspectives of Pharmacovigilance
2	Pharmaceutical Quality Assurance	I	Quality Control and Quality Assurance
		II	Pharmaceutical Validation
3	Pharmaceutical Regulatory Affairs	I	Pharmaceutical cGMP and Validation
		II	International Regulatory Requirements
4	Medicine and Poison Information	I	Medicine Information
		II	Poison Information
5	Cosmeceutics	I	Cosmeceutics Biology and Formulation Science
		II	Cosmeceutical - Evaluation Techniques & Regulatory
6	Regulatory Toxicology	I	Principles and Methods in Regulatory toxicology
		II	Principles, Documentation and Implementation of Good Laboratory Practice
7	Intellectual Property Rights	I	Introduction to law and law of patents
		II	Law of copyrights, designs, trademarks and geographical indication

8	Medical Devices	I	Regulated Markets
		II	Rest of the world Markets
9	Computer Aided Drug Design	I	Quantitative structure activity relationships
		II	Molecular Modelling
10	Food & Drug Analysis	I	Food Analysis
		II	Drug Analysis

5.0 EXAMINATION

5.1 Scheme of Examination

A) B. Pharm

Course	Internal Assessment			End Semester Exam	Total
	Continuous Mode	Sessional Marks	Total		
B.Pharm	10	15	25	75	100

B) Pharm. D.

Course	Sessional						Final exam	
	Theory			Practicals			Theory	Practicals
	Written exam (Average of best 2)	Seminar	Total	Practical exam (Average of best 2)	Lab work/ Record	Total		
Pharm.D & Pharm.D (PB)	30	--	30	20	10	30	70	70

C) M.Pharm

Course	Internal Assessment			End Semester Exam	Total
	Continuous Mode	Sessional Marks	Total		
M.Pharm	10	15	25	75	100

D) Diploma

Course	Sessional		Final exam	
	Theory	Practicals	Theory	Practicals
	Written exam (Average of 2)	Practical exam (Average of 2)		
PG Diploma	50	50	50	50

8.2 Internal Assessment Marks:

A) B.Pharm:

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. 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.

B) Pharm D & Pharm D (PB):

Theory: Three sessional examinations evenly spread during the academic year shall be conducted by the constituent colleges. The average marks of the best two examinations shall be computed out of a maximum of 30 marks and shall constitute the sessional award in theory. Provided further the colleges may conduct one special theory sessional examination towards the end of the academic session for those who might have missed any one of the regular sessional examination on genuine grounds.

Practical: Students are expected to perform the experiment listed in the respective syllabus. Marks shall be awarded out of a maximum of 10 to each of the practical exercise and an average of those shall be computed out of maximum of 10 marks. In addition, three practical examinations evenly spread during each academic year shall be conducted. The average marks of the best of two practical examinations shall be computed out of a maximum of 20 marks. A total of 30 marks shall constitute the sessional award in practical. While awarding the sessional marks for practical experiments, the following considerations should be taken into account.

1. Preparation of the candidate.
2. Manipulative skills.
3. Results of the experiment.
4. Knowledge of the experiment
5. Viva voce pertaining to the experiments only.

Conditions permitting to appear for university examination: The candidates are required to score a minimum of 50% marks in each of the subjects (Theory and Practicals separately) in the internal assessment to be eligible to appear for university examination in the respective subject.

C) M.Pharm (all branches):

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. 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.

D) Diploma:

Theory: Two sessional examinations evenly spread during the academic year shall be conducted by the constituent colleges. The average marks shall be computed out of a maximum of 50 marks and shall constitute the sessional marks awarded in theory.

Practical: Students are expected to perform the number of experiments/ assignments listed in the respective syllabus. Two practical sessional examinations evenly spread during each academic year shall be conducted. The average marks shall be computed out of a maximum of 50 marks. The candidates are required to score a minimum of 50% marks in each of the subjects (Theory and practical's separately) in the sessional examination to be eligible to appear for annual Deemed to be University examination in the respective subject.

7.0 ACADEMIC PROGRESSION

6.1 Criteria for pass

Candidates who have secured a minimum of 50% marks in the Theory and Practical (including internal assessments) separately in any subject or subjects shall be declared to have passed in that subject/s and exempted from appearing in that subject/s at subsequent examination. Theory and Practical of a particular subject are considered as individual subjects for the purpose of pass criteria. Those candidates who failed in one or more subjects shall have to appear only in the subject so failed, in the subsequent examinations.

6.2 Conditions under which candidates are permitted to proceed to next higher class:

A) B.Pharm

A student shall be eligible to carry forward all the courses of I, II and III semesters till the IV semester examinations. However, he/she shall not be eligible to attend the courses of V semester until all the courses of I and II semesters are successfully completed.

A student shall be eligible to carry forward all the courses of III, IV and V semesters till the VI semester examinations. However, he/she shall not be eligible to attend the courses of VII semester until all the courses of I, II, III and IV semesters are successfully completed.

A student shall be eligible to carry forward all the courses of V, VI and VII semesters till the VIII semester examinations. However, he/she shall not be eligible to get the course completion certificate until all the courses of I, II, III, IV, V and VI semesters are successfully completed.

A student shall be eligible to get his/her CGPA upon successful completion of the courses of I to VIII semesters within the stipulated time period as per the norms specified in 26.

A lateral entry student shall be eligible to carry forward all the courses of III, IV and V semesters till the VI semester examinations. However, he/she shall not be eligible to attend the courses of VII semester until all the courses of III and IV semesters are successfully completed.

A lateral entry student shall be eligible to carry forward all the courses of V, VI and VII semesters till the VIII semester examinations. However, he/she shall not be eligible to get the

course completion certificate until all the courses of III, IV, V and VI semesters are successfully completed.

A lateral entry student shall be eligible to get his/her CGPA upon successful completion of the courses of III to VIII semesters within the stipulated time period as per the norms specified in 26.

Any student who has given more than 4 chances for successful completion of I / III semester courses and more than 3 chances for successful completion of II / IV semester courses shall be permitted to attend V / VII semester classes ONLY during the subsequent academic year as the case may be. In simpler terms there shall NOT be any ODD BATCH for any semester.

B) Pharm. D.

Candidates of I Pharm. D. are permitted to carry not more than any two subjects (two theory/ two practicals/ one theory & one practical of same or different subjects), to II Pharm. D. and appear for II Pharm. D. examination concurrently along with failed subjects of I Pharm. D. However, these candidates have to pass all the failed subjects of I Pharm. D. to become eligible to proceed to III Pharm. D. and so on.

C) M.Pharm

In case a student fails to secure the minimum 50% in any Theory or Practical course as specified in 12, then he/she shall reappear for the end semester 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.

6.3 Remediation

Students (B.Pharm/ Pharm. D.) who failed to score 50% marks in the internal assessment are identified by the respective class teacher are counseled during the ACB (Academic counsel board) meeting. The committee consists of Principal, class teacher, batch teachers and subject teachers. The progress reports are sent to the parents to aid to know the performance of their wards. During the tutorial hours, a special attention is given towards such students. If necessary, extra classes are conducted for such students.

6.4 Declaration of class

Class shall be awarded at the end of each academic examination for

A) B.Pharm

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

B) Pharm. D. (except VI Pharm. D.)

Distinction 75% and above
First Class 60% and above and less than 75%
Second class 50% and above and less than 60%

C) M.Pharm

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

D) **Diploma**

Distinction 75% and above
First Class 60% and above and less than 75%
Second class 50% and above and less than 60%

The result of the successful candidate shall be classified at the end of the semester/final year examination on the basis of the aggregate of all subjects, theory and practicals, secured by the candidates who have completed the course within the specified duration, as indicated below.

I Class: 60% and above
II Class: 50%-59%.

Candidate securing aggregate of 75% or above marks and have passed in all the subjects in a year in first attempt shall be declared to have obtained Distinction.

6.5 Award of Ranks: Ranks and Medals are awarded on the basis of aggregate of all the university examinations. However, candidates who fail in one or more subjects during the course are not eligible for award of ranks. Moreover, the candidates should have completed the course in minimum prescribed number of years prescribed in the regulations of the each course for the award of Ranks.

6.6 Award of degree: Candidates who fulfill the requirements mentioned above are eligible for award of degree during the JSS AHER convocation. All graduating students should apply for graduation towards the end of the graduation year to The Registrar, JSS AHER, Mysore.

6.7 Duration for completion of the course of study: The duration for the completion of the course is fixed as double the actual duration of the course and the students have to pass within the said period, otherwise they have to get fresh registration.

6.8 Revaluation/ Retotaling of answer papers: There is no provision for revaluation of the answer papers of failed candidates in any examination. However, the failed candidates can apply for retotaling.

6.9 Withdrawal from the Program: Students who wish to withdraw from the admitted program after registration must write a request for withdrawal to the Office of the Principal and later it will be forwarded to The Registrar, JSS AHER, Mysuru for the approval of the same.

6.10 Dismissal: The students who have violated the institutional code of conduct will be dismissed permanently from their admitted program after conducting meeting in presence of The Principal, concerned staff members, parents and student. The decision made by the committee will be forwarded to the The Registrar, JSS AHER, Mysuru for the approval of the same.

6.11 Readmission after break of study: Candidate who seeks re-admission to the course after break of study has to get the approval from the JSS AHER, Mysuru, by paying a required condonation fee. And no condonation is allowed for the candidate who has more than 2 years of break up period and he/she has to rejoin the course by paying the required fees.

7.0 STUDENT REPRESENTATION IN COLLEGE COMMITTEES

Student representatives act as bridge between the college administration and student community and communicate the needs of the students. Each class is represented by a Class representative and each course is represented by a Lady Representative.

Inclusion of students in various committees of the institution that structure the policies and procedures enables the student to participate in various aspects of functioning of the institution.

The students will represent the following committees

- Institutional Pharmaceutical Society
- Institutional Library Committee
- Cultural Committee
- Sports Committee
- Hostel Review Committee
- Magazine Committee
- NSS Advisory Committee
- Research Advisory Committee

8.0 ACADEMIC AND PROFESSIONAL CONDUCT

CODE OF CONDUCT

Code of conduct has been developed and adopted to express the guidelines for the conduct of all employees and students of the colleges. The present code of conduct is an attempt to provide direction and guidance to the teachers, employees and students in enhancing the dignity of their professional work and institution.

1. Obligations towards Students

- Treats all students with respect and affection.
- Respects the value of being just and impartial to all students irrespective of their caste, creed, religion, sex, economic status, disability, language and place of birth.
- Facilitates students' professional, social, intellectual, emotional, and moral development.
- Makes planned and systematic efforts to facilitate the student to actualize his/her potential and talent.
- Transacts the curriculum in conformity with the rules as prescribed by the university.
- Adapts his/her teaching to the individual needs of students.
- Maintains the confidentiality of the information concerning students and dispenses such information only to those who are legitimately entitled to it.
- Refrains from subjecting any student to fear, trauma, anxiety, physical punishment, sexual abuse, and mental and emotional harassment.
- Keeps a dignified demeanour commensurate with the expectations from a teacher as a role model.

2. Obligations towards Parents, Community and Society

- Establishes a relationship of trust with parents/guardians in the interest of all round development of students.
- Desists from doing anything which is derogatory to the respect of the student or his/her parents/guardians.

- Strives to develop respect for the composite culture of India among students.
- Keeps the country uppermost in mind, refrains from taking part in such activities as may spread feelings of hatred or enmity among different communities, religious or linguistic groups.

3. Obligations towards the Profession and Colleagues

- Strives for his/her continuous professional development.
- Creates a culture that encourages purposeful collaboration and dialogue among colleagues and stakeholders.
- Takes pride in the teaching profession and treats other members of the profession with respect and dignity.
- Refrains from engaging himself/herself in private tuition or private teaching activity.
- Refrains from accepting any gift, or favour that might impair or appear to influence professional decisions or actions.
- Refrains from making unsubstantiated allegations against colleagues or higher authorities.

General Rules

Students, as adult learners, are expected to follow the rules and the code of conduct as laid down by the institution. The rules and the code of conduct is framed so as to facilitate and support the living and learning for all stakeholders on the campus. Remember that someone else defying the code or violating the rules might inconvenience you. It thus, becomes necessary that all of us follow rules to make life easy for everyone including us.

Institution believes in self-discipline and would actively work towards a threat free environment. This cannot be achieved without the active support and participation of the faculty, staff and students.

However, any act of indiscipline inside or outside the institute may attract strict action in accordance with the rules applicable.

- Students should always keep their tagged identity card with them.
- Students should abide by all the rules and regulations of college.
- Students should participate actively in the extracurricular activities organized by college.
- Students are expected to attend all classes. Minimum physical attendance required is 80%,
- Students are required to adhere to the formal dress while engaging in academic activities in the campus such as attending lectures or working in laboratories.
- Students shall not use mobile/cell phones in the college premises. Any student using their phone will have their mobile phone confiscated.
- Ragging is an offence, do not indulge in ragging.

Code of Conduct specific to Pharmacy Practice Students

As a student of pharmacy practice, you must demonstrate you are able to exercise those privileges and bear those responsibilities as listed below. This means you must conduct yourself professionally at all times. This Code of Conduct is based on the following principles.

1. Make patients your first concern

The health, wellbeing and safety of patients must be your main concern. To support this, you will learn about the design and development of medicines and their safe and effective use. Even when you are not in direct contact with patients, you will be developing values, attitudes, knowledge and skills that you will use as a pharmacist.

As a student you must:

- Always bear in mind your future role as a pharmacist when studying.
- Apply your learning to ensure you know how to develop and use medicines for the maximum benefit of patients.
- Promote the health of patients.
- Use your professional judgement in the interests of patients and the public.
- Use Professional judgement at all times: your course is designed to help you understand, what this means is,
    - consider and act in the best interests of patients and the public
    - ensure your beliefs do not compromise patient care
    - make sure your judgement is not influenced by personal interests
    - be prepared to challenge the judgement of others if you have reason to believe that their decisions could compromise safety or care

2. Show respect for others

Demonstrating respect for the dignity, views and rights of others is fundamental in forming and maintaining appropriate professional relationships with patients, carers, colleagues and other individuals with whom you come into contact.

As a student you must:

- recognise diversity and respect the cultural differences, values and beliefs of others, including students and staff
- treat others politely, with consideration and with respect
- listen to, and respect, others' opinions and be non-judgemental in your attitudes toward them
- maintain proper professional boundaries in the relationships you have with others, especially with vulnerable adults and children
- recognise and respect the rights of patients
- respect patient confidentiality and consent, but disclose relevant information as required

3. Encourage patients and the public to participate in decisions about their care

Patients and the public have the right to be involved in decisions about their treatment and care. Pharmacists must respect this right and help patients to take part in decisions which affect their health and wellbeing.

As a student you must:

- learn how to listen to patients and their care takers and communicate effectively with them in a way they can understand
- learn how to give patients information and advice so they can take part in decisions about their care, including recognising their right to refuse care
- learn how to work in partnership with patients, their care takers and others to manage a patient's treatment and care

4. Develop your professional knowledge and competence

At all stages of your pharmacy career you must take responsibility for ensuring your knowledge and skills are up-to-date and that you maintain your competence.

As a student you must:

- reflect on and develop your professional knowledge and competence throughout your course
- recognise and stay within the limits of your competence
- make rational and informed decisions
- engage constructively with assessments
- ensure you are aware of the continuing professional development

5. Be honest and trustworthy

The public trust healthcare professionals, and at all times pharmacists must justify that trust.

As a student you must:

- act with honesty and integrity
- honour your commitments and take responsibility for your work
- not plagiarise the work of others
- use research and laboratory data honestly and ethically, seeking permission to use data as required
- supply accurate information in response to lawful requests and update that information as necessary
- respond honestly, openly and courteously to complaints and criticisms concerning yourself or others
- cooperate with formal investigations about you or others
- abide by the rules and regulations of the university and other organisations linked to your studies

Pharmacists, like all healthcare professionals, must take responsibility for their work.

As a student you must:

- comply with this Code of Conduct
- take responsibility for your learning and your actions and work constructively with others
- ask for help when you need it and respond appropriately
- plan and use your time effectively
- follow dress codes
- attend classes and conduct yourself appropriately
- be punctual
- be contactable
- ensure you have adequate English language skills
- abide by health and safety requirements of the institution

CODE OF ETHICS

The faculty of Pharmacy, JSS AHER has adopted the code of ethics laid down by the Pharmacy Council of India and is imbibed in the practice, teaching and training processes.

Code of Pharmaceutical Ethics as formulated by Pharmacy Council of India which are meant to guide the pharmacist as to how he (or she) should conduct himself (or herself), in relation to himself (or herself), his / her patrons (owner of the pharmacy), general public, co-professionals etc. and patients, which may be categorized under the following headings:

1. Pharmacist in relation to job.
2. Pharmacist in relation to trade.
3. Pharmacist in relation to medical profession.
4. Pharmacist in relation to profession.

1. Pharmacist in relation to his job

1. When premises are registered under statutory requirements and opened as a pharmacy, extensive pharmaceutical services should be provided.
2. These involve the supply of commonly required medicines without undue delay and furnish emergency supplies, at all times.
3. The appearance of the place should reflect the professional character of pharmacy and indicate to the public that the practice of pharmacy is carried out in the establishment.
4. They should be qualified pharmacist having personal control over pharmacy.

Pharmaceutical services

Pharmacy premises (medicine shops) should be registered. Emergency medicines and common medicines should be supplied to the patients without any delay.

Conduct of the Pharmacy

Error of accidental contamination in the preparation, dispensing and supply of medicines should be checked in a pharmacy.

Handling of prescription

- When a prescription is presented for dispensing, it should be received by a pharmacist without any comment or discussion over it, regarding the merits demerits of its therapeutic efficiency.
- It is not within a capacity of a pharmacist to add, omit or substitute any ingredient or alter the composition of a prescription without the consent of a prescriber.
- In case of any obvious error in it, due to any omissions it should be referred back to the prescriber for correction.
- When such an act is necessary, it should neither offend the customer nor affect the reputation of the prescriber.

Handling of drugs

- Prescription should be correctly dispensed with the drugs of standard quality.
- All the ingredients must be weighed correctly and must be in exact proportions.

2. Pharmacist in relation to his trade

1. ***Price structure:*** Prices charged from customers should be fair and must be in accordance with the quality and quantity of drugs including his compounding charges.
2. ***Fair trade practice:*** No attempts should be made to get business by unethical and cut throat competitions, labels, trade market and science and symbols of others should not be imitated.
3. ***Purchase of drugs:*** Always standard drugs must be purchased from reputable and genuine sources.
4. ***Hawking of drugs:*** Hawking of drugs and medicines should not be encouraged nor should any attempt be made to get orders for such substances from door to door. Pharmacies and drug stores should not practice the method of self servicing or counter sales without the qualified person. They should discourage self medication, which is dangerous and highly undesirable.
5. ***Advertising and display:*** The pharmacist should not advertise or display in ~~his~~ the premises, in the press, elsewhere, regarding the sale of medicines, which claim to cure and any other advertisements or display containing
    a) Symptoms of ill health
    b) A guarantee of therapeutic efficiency
    c) An appeal to fear
    d) An offer to refund money paid
    e) An incentive schemes
    f) Any reference to a medical practitioner or a hospital
    g) A reference to sexual weakness, premature aging or loss of virility
    h) Any reference to condemn the products of similar nature of others

3. Pharmacist in relation to medical profession

The pharmacist must be law obeying citizen and must fulfill the provisions of the pharmaceutical and other laws and regulations. He should have relationship with his own professional organizations. He should maintain dignity, decorum, decency and propriety of his profession. Following are the code of ethics of a pharmacist in relation to medical profession:

(i). The professional activity of the medical practitioner as well as the pharmacists should be confined to their own field only. Medical practitioners should not possess drugs stores and pharmacists should not diagnose diseases and prescribe remedies. A pharmacist may, however, can deliver first aid to the victim in-case of accident or emergency.

(ii). No pharmacist should recommend a medical practitioner in particular. Pharmacist should be never entering into secret arrangements with practitioner to offer them commission by recommending his dispensary or drug store. He should maintain strictly the professional secrecy, unless required to do so by law.

(iii). A pharmacist should always maintain proper link between physicians and people. He should advise the physicians on pharmaceutical matters and should educate the people regarding health and hygiene. The pharmacist should keep himself/herself up-to-date with pharmaceutical knowledge from various journals or publications.

Any information acquired by a pharmacist during his professional activities should not be disclosed to any third party until and unless required to do so by law.

4. Pharmacist in relation to his profession

Regarding to the profession the following code of ethics should be fulfilled.

(i) Professional vigilance

A pharmacist must abide by the pharmaceutical laws and he/she should see that other pharmacists are abiding it.

(ii) Law-abiding citizens

The pharmacists should have a fair knowledge of the laws of the country pertaining to food, drug, pharmacy, health, sanitation etc.

(iii) Relationship with Professional Organizations

A pharmacist should be actively involved in professional organization, should advance the cause of such organizations.

(iv) Decorum and Propriety

A pharmacist should not indulge in doing anything that goes against the decorum and propriety of Pharmacy Profession.

(v) Pharmacists Oath

A young prospective pharmacist should feel no hesitation in assuming the pharmacist's oath.

Pharmacist's Oath

- I Swear by the code of Ethics of Pharmacy Council of India in relation to the community and shall act as an integral part of health care team.
- I shall uphold the laws and standards governing my profession.
- I shall strive to perfect and enlarge my knowledge to contribute to the advancement of pharmacy and public health.
- I shall follow the system, which I consider best for pharmaceutical care and counseling of patients.
- I shall endeavor to discover and manufacture drugs of quality to alleviate sufferings of humanity.
- I shall hold in confidence the knowledge gained about the patients in connection with professional practice and never divulge unless compelled to do so by the law.
- I shall associate with organizations having their objectives for betterment of the profession of Pharmacy and make contribution to carry out the work of those organizations.
- While I continue to keep this Oath inviolated, may it be granted to me to enjoy life and the practice of pharmacy respected by all, at all times!
- Should I trespass and violate this oath, may the reverse be my lot!

General Rules: Students, as adult learners, are expected to follow the rules and the code of conduct as lay down by the institution. The rules and the code of conduct is so framed so as to facilitate and support the living and learning for all stakeholders on the campus. Remember that someone else defying the code or violating the rules might inconvenience you. It thus, becomes necessary that all of us follow rules to make life easy for everyone including us.

Institution believes in self-discipline and would actively work towards a threat free environment. This cannot be achieved without the active support and participation of the faculty, staff and students.

However, any act of indiscipline inside or outside the institute may attract strict action in accordance with the rules applicable.

- Students should always keep their Tagged identity card with them.

- Students should abide by all the rules and regulations of college.
- Students should participate actively in the extracurricular activities organized by college Students are expected to attend all classes. Minimum physical attendance required is 80%,
- Students are required to adhere to the formal dress while engaging in academic activities in the campus such as attending lectures or working in laboratories.
- Students shall not use mobile/cell phones in the college premises. Any student using their phone will have their mobile phone confiscated.
- Ragging is an offence, do not indulge in ragging

Complaints and Grievances

A Grievance is any discontent or dissatisfaction, whether expressed or not, whether valid or not, arising out of anything connected with the Institute that a student thinks, believes, or even feels, is unfair, unjust or inequitable.

Any aggrieved student who has any complaint in the matters concerned with Grievances may contact the Member Secretary and make a complaint in writing of his/her Grievances for necessary clarifications and/or Redressal of their Grievances.

1. Objective:

a) To ensure that necessary actions should be prompted for better redressal of Grievance.
b) To make the redressal process fair, impartial, consistent, with prior warnings and corresponding with gravity of misconduct.
To take necessary steps to prevent any arise of such complaints

2. Grievance Redressal Procedure:

- An aggrieved student (or his/ her parent or with a special permission from the Grievance Redressal Committee, by any other person) may make an application seeking redressal of grievance. The application should be in writing, duly signed by the applicant, giving full details of the applicant and of the grievance. Appropriate documentary proof in support of the grievance must also be submitted along with the application.
- The application along with the other documents shall be submitted to the Member Secretary for Grievance Redressal, whose contact details are given below:

Dr. G.V.Pujar
Member Secretary
Grievance Redressal Committee
JSS College of Pharmacy
Sri Shivarathreeshwara Nagar Mysore 570015
Telephone: 0821 - 2548353 Mobile: 8088532266, Email: gvpujar@jssuni.edu.in

- On receipt of an application by the Member Secretary, the Member Secretary shall inform the Grievance Redressal Committee and shall immediately provide a copy to the head of the institution.
- The Grievance Redressal Committee shall fix a date for hearing the complaint which shall be communicated to the Head of the Institution and the aggrieved person either in writing or electronically, as may be feasible.
- An aggrieved person may appear either in person or represented by such person as may be authorized to present his case.
- The Grievance Redressal Committee shall be guided by principles of natural justice while hearing the grievance.
- The Grievance Redressal Committee shall ensure speedy redress of grievance.
- On the conclusion of proceedings, the Grievance Redressal Committee shall pass such order, with reasons for such order, as may be deemed fit to redress the grievance and provide such relief as may be desirable to the affected party at issue.
- Every order shall be provided to the aggrieved person and the institution and shall be placed on the website of the institute.
- In case of any false / frivolous complaint, the Grievance Redressal Committee may order appropriate action against the complainant.
- The students who are not satisfied with the decision of Grievance Redressal Committee communicated to them, may approach the Ombudsman for redressal of grievances of students at JSS AHER

GRIEVANCE REDRESSAL COMMITTEE

Sl. No.	Name	Position	Contact no
1.	**Dr. T M Pramod Kumar** Principal	Chairperson	9900520875
2.	**Dr. M Ramesh** Professor and Head Dept. of Pharmacy Practice	Member	9901218640
3.	**Dr. G V Pujar** Professor and Head Dept. of Pharm. Chemistry	Member	80885 32266
4.	**Dr. D Vishkante Gowda** Professor and Head Dept. of Pharmaceutics	Member	96631 62455
5.	**Dr. K M Mrutyunjaya** Professor and Head Dept. of Pharmacognosy	Member	9886733404
6.	**Dr. S N Manjula** Professor and Head Dept. of Pharmacology	Member	99162 64940

7.	**Mr. Puttarajappa S** Administrative Officer	Member	97410 33336
8.	**Ms. Namitha Shivanna** Librarian	Member	---
9.	**Dr. P K Kulkarni** Vice-Principal	Member Secretary	92428 98028

Dress Code

The student pharmacist MUST be in professional attire, which includes clean apron and identification badges, at all times while on-site and on-campus and off-campus pharmacy functions. Professional attire includes dress slacks, dress shirt for male interns and salwar suits or saris for female interns. Jeans, T-shirts or any other casual wear is not permitted. Formal shoes are recommended.

Health Insurance

The students admitted are eligible for health services at JSS Hospital, Mysuru. Students are provided free consultation at University dispensary and Low premium health insurance is tagged to JSS Hospital, Mysore.

Travel

Indian Railways (Govt. of India Undertaking) provides concession on travel by train for students going to hometown and educational tours. The support is extended to research scholars for journey in connection with research work. The college provides the concession forms to avail the benefit from Indian Railways.

Mobile Phone Policy

- Students mobile should be put-off when in class room, lab, library and exam hall
- Mobile will be confiscated till completion of the course, if found ringing in above places
- Teachers are authorized to confiscate the mobiles and report to Principal
- Staff members shall not keep their mobiles switched-on while conducting theory and practical classes

9.0 RESOURCES

Library and Information Centre

The first law of library science “Books are for use” constitutes the basis for any library and is one of our library objectives. The first step towards achieving this is the location of the library. The main library is housed within the college building and departmental libraries at various departments. The library is open from 8:00AM to 8:00PM. throughout the week days and from 9:00AM. to 2:00PM. on Sundays. This facilitates the users to use the library at their convenient and preferable time.

Study space: The main library at Mysore college is of two floors and two mezzanines, with a floor area of 674,94 sq.mts. and has a seating capacity of 150 that provides a conducive atmosphere for reading. There is a provision for a separate private study area earmarked for personal reading.

Collection

The library have well-developed and systematic policies for the collection and development of learning resources. The comprehensive collection comprises of both traditional resources viz. books and journals in print and the electronic resources – the CD ROMs, videos, slides etc. The total number of book collections as on date is about 9000. These volumes include books on pharmaceutical sciences, pharmacy practice and allied sciences like chemistry, anatomy, pathology, microbiology and biochemistry etc. A modest collection of books for competitive exams is maintained. A user can relax with the library's general collection of biographies, fiction, philosophy etc. The library provides access to more than 600 scientific journals either in the print or electronic form. Some of the core journals are European Journal of Pharmaceutics & Biopharmaceutics, Fitoterapia, International Immunology, International of Pharmacy Practice, Journal of Natural Products, Trends in Pharmacological Sciences, Planta Medica, International Journal of Medicinal Chemistry, Journal of Pharmaceutical and Biomedical Analysis, etc. The library has a back collection of 25 years. The library subscribes to 7 online databases namely, International pharmaceutical abstracts (IPA), Drugdex, Poisindex, Scopus, Clinical Key (full text journals and books), Elsevier Pharmacy Journals (Full text) and Bentham Pharmacy journals (Full text). A specific drug information source (CDs) for pharmacy practitioners is provided through the Iowa drug information service (IDIS).

The computer technology is an integral part of a library and its educational resources. The campus is Wi-Fi enabled.

Information retrieval tools

An online public access catalogue (OPAC) of the library's collection is provided in the main library. OPAC access points in their respective departments, is also available. An index for the contents pages of the journals subscribed by the library is maintained for the benefit of the users.

Services

The libraries provide a range of services through a team of dedicated library staff. The services aim to put information within easy reach. The conventional services – reference and lending, provide the staff and students the option of either using the information resources within the library or borrowing (textbooks) them for a stipulated period of time.

Internet access is provided through the library LAN comprising of desktops and Wi-Fi access points throughout the college campuses. The digital collection comprising of e-books, online journals, databases, the institutional repository collection of the abstracts of the theses and examination question bank can be accessed through the library network. Library orientation and 'hands on' training are given to the new users on the use of online sources and is supported by periodical training from the service providers like the Elsevier, Wolters kluwer etc.

Collaborative services provide library members the access to the rich collection of about 30 thousand titles and 500 journals available in the constituent libraries of JSS AHER. A union catalogue of all the libraries is maintained in the library. Special assistance is given on request for literature search, scientific writing of articles and citing references. The students and staff can avail the reprographic and scanning facilities in the library.

Facilities

JSS Pharmacy College, Mysore has total campus area of 9.09 acres (36786.92 Sq.Mts) with a total built carpet area measuring 13846 Sq. Mts. Academics and administration built carpet area measures 7830 Sq.Mts, the building has 3 floors.

General Facilities:

- Wi-Fi enabled campus
- Seven lecture halls (class rooms)
- Eight seminar rooms
- Nine undergraduate laboratories and Seven postgraduate laboratories
- Computer work stations
- Library and Information center
- Training and Placement cell
- Students relaxation room
- In campus men's hostel
- In campus women's hostel
- Gymnasium
- Cafeteria
- Community Pharmacy
- Auditorium and Gallery Lecture Hall
- Computer Lab and Statistical analysis center

Academic Facilities

The college has seven lecture halls, four of which are equipped with LCD facility and seven seminar rooms. The college has nine undergraduate laboratories, nineteen postgraduate laboratories and a research laboratory with sophisticated equipments& instruments.

The laboratories of the college are provided with necessary facilities to carry out undergraduate experiment and research work.

Pharmaceutics laboratories are well equipped with instruments and equipments to carry out basic and advance research work. The department has industrial pharmacy laboratory equipped for carrying out pilot plant scale up technique for solid dosage forms. Facilities are also available to study short term, intermediate and long term stability testing for pharmaceutical dosage forms as per ICH guidelines. Performulation studies for different dosage forms can be carried out in Post graduate laboratories equipped with tensile testing apparatus, tap density tester, DSC, FTIR, GC, and HPLC. Formulation and evaluation of modified release dosage forms can be carried out with the facilities viz., bilayered tablet machine, rapid mixer granulator, extruder spheronizer, tablet coating machine, spray dryer, lyophilizer, fluidized bed processor, UV Visible spectrophotometer, HPLC, dissolution test apparatus USP1, USP2 and USP 3. The regulatory affairs and quality assurance laboratories have facilities to carry out research in pharmaceutical product life cycle management, validation, Quality by Design (QbD), policy research, dossier compilation to obtain market authorization to various regulated and emerging market.

The department of pharmacy practice works in close association with SEVEN practice sites: JSS Hospital (1800 bed tertiary care, super specialty teaching hospital), Ashakirana hospital and AIDS care centre (HIV clinic), Columbia Asia Hospital (Corporate Hospital), Bharath Hospital, Institute for Oncology (cancer care centre and research institute), Apollo Hospital (Multi Specialty Hospital) and Suyog Hospital (Multi Specialty Hospital) . The staff and students of the

department work in close collaboration with the clinicians at the practice sites facilitating the interdisciplinary research. The availability of diverse, large number of clinical material provides ample opportunity to students for their learning and conduct research in different healthcare settings in the areas like pharmacoepidemiology, pharmacovigilance, quality use of medicines, pharmacoeconomics and outcomes research.

Pharmaceutical chemistry laboratories are equipped with molecular docking and QSAR softwares such as Sybyl X & Gold to assist *in silico* drug design and sophisticated analytical instrumentation facility to carry out analytical method development of pharmaceuticals. Students and faculties are involved in bioanalytical method development of active pharmaceutical ingredients & drug discovery research in the area of cancer, diabetes and tuberculosis.

Computer Laboratory: The computer laboratory of the college is well equipped with the latest computers (cyrix-II and pentium). Adequate computers with CD ROM drives and printers are available. The ratio of computers to student ratio is1:2. The college has adopted the ICT enabled technology in its teaching learning, evaluation and research strategies. Adequate computers were provided to all the P.G. Departments with internet connectivity.

Visiting Faculty

Adjunct faculties from various universities of India and abroad share their expertise and experience with students which provide them plenty of opportunities to correct their weaknesses and to strengthen their abilities.

Guest lectures arranged by scholarly and experienced persons help the students and staff to update their knowledge.

Research and publications: Need oriented projects of national importance are carried out by M.Pharm and Ph.D., students. Some of the areas include essential drugs, traditional medicine, pharmacokinetics, industrial pharmacy etc.

Staff and students are encouraged to present their research findings in seminars/conferences and publish the same in national and international journals. Several publications of the college have received the best article awards.

Industrial tour & industrial training: Industrial tours are organized, for Final B.Pharm, and M.Pharm students, to visit various pharmaceutical industries, to get an orientation to the pharmaceutical industries.

Training and placement cell

The college has a training and placement cell to co-ordinate the student placements in pharmaceutical industries and health service organizations. The training and placement cell operates year round to facilitate contacts between companies and graduates. Staffs are available to respond to student's question and concern of all kinds. This may include advice on placement procedures, help with preparation of applications and resumes and practice for interviews. Training and placement cell helps the students to have the information and skills necessary for an effective job search. Those considering to pursue higher education, research and academic career are offered guidance.

The training and placement cell utilizes information and computing technology and has developed a placement portal (https://jssuni.edu.in/JSSWeb/WebShowFromDB.aspx?MODE=SSMD&PID=10002&CID=3&MID=0&SMID

=10446) in which final year graduate and post graduate students register and upload their resume which is accessible to all the recruiters on web. This enables the potential employers to short list and contacts the suitable candidates directly.

Residential facilities

The institution recognizes that a major concern of all students is the availability and quality of accommodation. Hostel facility is available in the campus to all students who need it. Both single and shared accommodation is available, separately for men and women. Hostels are built with all modern amenities providing distinct areas for learning and relaxation.

Particulars	Boy's Hostel	Women's Hostel
Built area	5673 Sq. mts	4500 Sq. mts
Capacity	178	173
Dining Hall capacity	100	120
Hygienic Kitchen	√	√
Round the clock security	√	√
Solar water heating system	√	√
Multi Gym	√	√
Indoor sports	√	√
Periodicals	√	√

Room type	Boy's Hostel	Women's Hostel
Single bed attached	--	37
Double bedded	54	04
Double bedded attached	20	--
Three bedded	10	24
Four bedded	--	14

Scholarship and financial aid

i. ***Sir Ratan Tata Trust scholarships:*** JSS College of Pharmacy, Mysore is one of the institutions recognized by Sir Ratan Tata Trust for providing scholarships under "Study in India Program". Meritorious students of M. Pharm & B. Pharm are awarded scholarship.

ii. ***GPAT Scholarships:*** All India Council for Technical Education (AICTE), New Delhi provide scholarship of Rs. 8,000/- PM, for qualified, GPAT examination, students.

iii. ***JSS AHER Scholarship:*** University has established research fund, to encourage fulltime research scholars, small grant is provided.

Internship for PharmD Students

The PharmD interns are provided with opportunities to pursue their clinical rotation in various specializations JSS Hospital, Mysuru including Bharath Hospital & Institute of Oncology (Cancer Specialty), Asha Kirana Hospital (HIV Specialty), Columbia Asia Hospital (Multispecialty Hospital), Apollo BGS Hospital (Corporate Hospital), Narayana Multispecialty Hospital (Multispecialty Hospital). Also, the students are also provided opportunities to pursue

clinical rotation in International Universities including University of North Carolina, USA, Southern Illinois University, Edwardsville, USA, and Howard University, USA as a part of student exchange program. Through these clinical postings, students are exposed to different learning experiences in various practice/healthcare settings.

10.0 COLLEGE EVENTS

College organizes the following events for the benefit of students

1. Fresher's Day
2. Freshman Orientation
3. Anti-ragging awareness
4. Pharmacist's Day
5. National Pharmacy Week
6. Pharmafest
7. Annual Sports Meet
8. College Annual Day
9. Retreat for students
10. Literary activities
    - Stumag
    - Jaspharm