

JSS Academy of Higher Education and Research

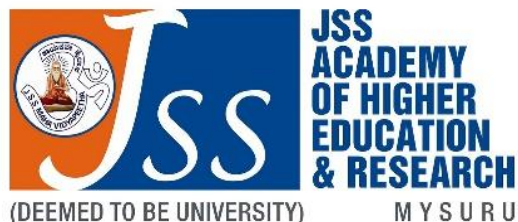
## JSS College of Pharmacy

Sri Shivarathreshwara Nagara, Mysuru-570015

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*An ISO 9001:2015 Certified Institution*



### II<sup>nd</sup> Pharm.D. Course Handout 2020-21



Accredited 'A+'  
Grade by  
NAAC



1<sup>st</sup> in Karnataka  
& 3<sup>rd</sup> in INDIA to  
be rated with 4  
stars



Ranked 1<sup>st</sup> among  
the YOUNG  
UNIVERSITIES in  
Karnataka



JSS College of  
Pharmacy,  
Mysuru - 10<sup>th</sup>  
Rank in INDIA  
2020



INTERNATIONAL  
CERTIFICATION  
Pharm D Program is  
Certified by Accreditation  
Council for Pharmacy  
Education (ACPE), USA



ARIIA  
ATAL RANKING OF INSTITUTIONS  
ON INNOVATION ACHIEVEMENTS

Ranked 4<sup>th</sup> in India for 2019

## Academic Calendar 2020-21

### Teacher's Incharge

Class	Class Teacher	Batch No.	Batch Teacher
II Pharm.D.	Dr. Sriharsha Chalasani	I	Dr. Sriharsha Chalasani
		II	Dr. K. Nagashree

## ACTIVITIES AND COORDINATORS 2020-21

### Curricular & Co curricular activities

Sl. No	Activities	Coordinator/s
1.	Induction, learning skills and personality development programs for fresher's	DHP/MPG
2.	Selection of class representative in first week of commencement of each course	
3.	Anti ragging cell	HP/ BM
4.	Grievance and redressal cell	PKK
5.	Industrial Visits, Training and placements	TS/ABP
6.	Guest lectures & Seminars/ conferences/ training / workshop <ul style="list-style-type: none"> <li>• organized at college</li> <li>• delivered/attended by staff</li> </ul>	Respective department all HODs
7.	Internal Assessment Committee Chairperson Members	GVP RSS/SNM/DAT/BMV
8.	<ul style="list-style-type: none"> <li>• Academic Council Board</li> <li>• Identification of Advanced/ Medium/ Slow learners</li> </ul>	Class Teachers Subject Teachers
9.	Ethics committee Meeting <ul style="list-style-type: none"> <li>• Animal</li> <li>• Human</li> </ul>	KLK MR
10.	Time table	DHP TS/ URR/ VR/AMM/HYK
11.	Internal Quality Assurance Cell Chairperson Members	PKK/ AMM/AKT/HVG/SP
12.	Women's cell (Prevention of Sexual Harassment Cell)	SNM
13.	Scholarship Bureau	RSC
14.	Compilation of publications (Research papers/books/chapters)	BMG
15.	Research Coordination Committee	Chairperson - DVG

	-Compilation of Ph.D details and funded projects - Plagiarism - Review of publications	Members – BRP/SB/JS
16.	Pharmacy Education Unit (CCLPE)	PKK/KU/RSS
17.	Annual result analysis List of merit students	UG – Subject Teacher, Class teacher & Program committee PG – Course Coordinator & Abhishek (Office)
18.	GPAT and other competitive exams (TOEFL, GRE etc.)	BM/ CSH/MPG
19.	Library orientation	Librarian
20.	Soft Skills Training	ABP

### Extracurricular activities

Sl. No.	Activities	Coordinator/s
21.	<ul style="list-style-type: none"> <li>• Selection of Class Representatives, Pharmaceutical society members</li> <li>• Annual planning and execution of Student centered and professional activities including inauguration of IPS</li> </ul>	MSS/ SRD
22.	JASPHARM	BS/ SM / CSH
23.	STUMAG	HYK
24.	Sports coordinators	MPV/HKS
25.	NSS coordinators	MPG / UM/ SND
26.	Cultural & Literary coordinators	KNS/CI

### Other Institutional activities

Sl. No.	Activities	Coordinator/s
27.	Annual Day celebration / Graduation day	DAT/SM
28.	Course handouts/ Teachers diary/ Student handbook/Faculty handbook	HYK/PS
29.	National Pharmacy Week (NPW) & Pharmacists Day	VJ/ UM + IPA team
30.	Alumni association	HVG/ AKT/SM/BS
31.	Herbal and College Garden	JS/ NPK/VR
32.	ISO	DHP/SNM
33.	Press and publicity	KLK /BMV/OFFICE
34.	Foreign students cell	MPV
35.	Governing council meeting	JUS/ Office
36.	Monthly/Annual report of college activities to JSS AHER and other agencies	HoDs/JUS/ST/AKT/AM/KU/NPK Asha (office)

37.	College website	HKS/KU
38.	Research & Consultancy Co-ordinator • Collaboration with Industries/organizations • Interdepartment/Interdisciplinary research	DVG/ SB/ KM
39.	Coordinator - JSSUonline.com	ABP/TS
40.	JSSU Newsletter	KLK SRD/ KNS
41.	Annual group photo session	MSS/ SRD
42.	Lab coat and Blazers	JS / Ningaraju
43.	Notice Board (SNB, LNB and IIPC), Departmental staff list	Nagaraju
44.	Stock verification	Office staff /Librarian
45.	Student Liaison	Divya S
46.	Student ID Cards /Attendance entry	Shivanna / Manjunath
47.	Retreat for Pharmacy Students	AKT/ HKS/BRJ
48.	Feedback	VJ
49.	Institute Innovation Cell	HVG/PKK
50.	Practice School	MPG/VJ

### Program Committee

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

### M.Pharm Program Coordinators

Sl. No.	M.Pharm Program	Coordinator
57.	Pharmaceutics	VJ
58.	Industrial Pharmacy	ABP
59.	Pharmaceutical Regulatory Affairs	MPV
60.	Pharmaceutical Quality Assurance	HVG
61.	Pharmaceutical Chemistry	BRP
62.	Pharmaceutical Analysis	BMG
63.	Pharmacology	KLK
64.	Pharmacognosy	NPK

65.	Pharmacy Practice	SP
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### PG Diploma Program Coordinators

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

### Certificate Course Coordinators

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

## TEACHING STAFF LIST

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

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

## **PHARM.D**

### **Expected Competencies and outcomes:**

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



**COURSE HANDOUT 2020-21****Class: II Pharm. D****I .Course Details**

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
	<b>Total hours</b>	<b>17</b>	<b>9</b>	<b>6</b>
	<b>Grand Total</b>	<b>32 hrs/ week</b>		

**2. Evaluations:**

**Theory:** Internal assessment Marks: 30. Three periodic theory sessional examinations will be conducted in theory for 30 marks (*duration 1.5 Hour*) and average of best two will be considered for evaluation.

**Practical:** Internal assessment Marks: 30. Three periodic practical sessional examinations will be conducted for 20 marks and average of best two will be considered for evaluation, plus 10 marks are awarded for regularity, promptness, viva-voce and record maintenance. JSS University will conduct annual examination for 70 marks in theory & practical at end of the academic session.

Classes will be awarded on the basis of total (sessional and annual examination) marks secured.

Class	Marks
Distinction	75% and above
First class	60% and above and less than 75%
Second class	50% and above and less than 60%
Pass class	Passed examination in more than one attempt.

**3 Sessional Examination schedule:** I, II and III sessional dates will be announced separately.

**4 Attendance:** Minimum of 80% attendance is necessary to appear for both Sessional and Annual examination.

**5 Chamber consultation hours:** Any time during College hours.

**6 Tutorial Class**

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

## 2.1 PATHOPHYSIOLOGY (THEORY)

**Theory: 3 Hrs. /Week**

**Responsible Member/s of the academic staff: Mrs. R.S.Savitha (RSS)**

**Scope and Objectives:** This course is designed to impart a thorough knowledge of the relevant aspects of pathology of various conditions with reference to its pharmacological applications, and understanding of basic pathophysiological mechanisms. Hence it will not only help to study the syllabus of pathology, but also to get baseline knowledge of its application in other subject of pharmacy.

**At completion of the course it is expected that students will be able to:**

**(Student learning outcomes)**

1. Discuss the general principles of pathophysiology of cell injury, inflammation, hypersensitivity and auto immune diseases.
2. Describe etiology and epidemiology of the selected diseases.
3. Discuss Pathophysiology of the selected disease.
4. List out clinical manifestation(s) and diagnostic methods of given disease.

**Teaching/learning methodologies used:**

1. Lecture
2. Discussion
3. Video

**Course Materials**

### TEXT BOOKS

- a. Pathologic basis of disease by- Cotran, Kumar, Robbins
- b. Text Book of Pathology – Harsh Mohan
- c. Text book of Pathology – Y M. Bhide
- d. <https://www.khanacademy.org.Pathology>

### REFERENCE BOOKS

- a. Clinical Pharmacy and Therapeutics; Second edition; Roger Walker; Churchill Livingstone publication
- b. Pathology and Therapeutics for Pharmacists. A basis for clinical pharmacy practice; Third edition; Russell J Greene and Norman D Harris

**Lecture wise Programme:**

<b>Topic</b>	<b>Hrs</b>
<b>1 Basic principles of cell injury and Adaptation</b>	<b>05</b>
a) Causes, Pathogenesis and morphology of cell injury	
b) Abnormalities in lipoproteinaemia, glycogen infiltration and glycogen infiltration and glycogen storage diseases	
<b>2 Inflammation</b>	<b>05</b>
a) Pathogenesis of acute inflammation, Chemical mediators in inflammation, Types of chronic inflammation	
b) Repairs of wounds in the skin, factors influencing healing of wounds	
<b>3 Diseases of Immunity</b>	
a) Introduction to T and B cells	<b>02</b>
b) MHC proteins or transplantation antigens	
c) Immune tolerance	
d) <b>Hypersensitivity</b>	<b>03</b>
Hypersensitivity type I, II, III, IV, Biological significance, Allergy due to food, chemicals and drugs	
e) <b>Autoimmunity</b>	<b>03</b>
Criteria for autoimmunity, Classifications of autoimmune diseases in man, mechanism of autoimmunity, Transplantation and immunologic tolerance, allograft rejections, transplantation antigens, mechanism of rejection of allograft.	
f) Acquired immune deficiency syndrome (AIDS)	<b>01</b>
g) Amyloidosis	<b>01</b>
<b>4 Cancer</b>	<b>05</b>
Differences between benign and malignant tumors, Histological diagnosis of malignancy, invasions and metastasis, patterns of spread, disturbances of growth of cells, classification of tumors, general biology of tumors, spread of malignant tumors, etiology and pathogenesis of cancer.	
<b>5 Shock</b>	<b>03</b>
Types of shock, mechanisms, stages and management	
<b>6 Biological effects of radiation</b>	<b>02</b>
<b>7 Environmental and nutritional diseases</b>	<b>04</b>
i) Air pollution and smoking- SO <sub>2</sub> ,NO, NO <sub>2</sub> , and CO	
ii) Protein calorie malnutrition, vitamins, obesity, pathogenesis of starvation.	
<b>8 Pathophysiology of common diseases</b>	
Parkinsonism	<b>01</b>
Schizophrenia	<b>01</b>
Depression and mania	<b>02</b>
Hypertension	<b>02</b>
Stroke (ischemic and hemorrhage)	<b>02</b>
Angina, CCF, Atherosclerosis, Myocardial infarction	<b>08</b>
Diabetes Mellitus	<b>02</b>
Peptic ulcer and inflammatory bowel diseases	<b>04</b>
Cirrhosis and Alcoholic liver diseases	<b>04</b>

Acute and chronic renal failure	<b>02</b>
Asthma and chronic obstructive airway diseases	<b>02</b>
<b>9 Infectious diseases :</b>	<b>11</b>
Sexually transmitted diseases (HIV, Syphilis, Gonorrhoea), Urinary tract infections, Pneumonia, Typhoid, Tuberculosis, Leprosy, Malaria, Dysentery (bacterial and amoebic), Hepatitis- infective hepatitis.	

**Sample Assignment Titles:**

1. Chemical Mediators of inflammation
2. Drug Hypersensitivity
3. Cigarette smoking & its ill effects
4. Biological Effects of Radiation
5. Etiology and hazards of obesity
6. Complications of diabetes
7. Diagnosis of cancer
8. Disorders of vitamins
9. Methods in Pathology-Laboratory values of clinical significance
10. Pathophysiology of Dengue Hemorrhagic Fever (DHF)

**Format of the assignment**

1. Minimum of 6 & Maximum of 12 number of pages.
2. Reference(s) shall be included at the end.
3. Assignment can be a combined presentation at the end of the academic year
4. It shall be a computer draft copy.
5. The covering page must contain the title of assignment, name and signature of the student and the name of subject teacher
6. Time allocated for presentation may be 8+2 Min.

**Theory Sessional Examination Syllabus**

Sessional No.	Syllabus
I	Topics 1, 2, 3, & 4
II	Topics 5, 6, 7 & 8 - a, b, c, d, e, & f
III	Topics 8- g, h, i, j, & k and 9

## 2.2 PHARMACEUTICAL MICROBIOLOGY (THEORY)

**Theory: 3 Hrs. /Week**

**Responsible member of the academic staff: Ms Haripriya G (HG)**

**Scope & Objectives:** Microbiology has always been an essential component of pharmacy curriculum. This is because of the relevance of microbiology to pharmaceutical sciences and more specifically to pharmaceutical industry. Pharmaceutical biotechnology is the logical extension of pharmaceutical microbiology, which is expected to change the complete drug product scenario in the future. This course deals with the various aspects of microorganisms, its classification, morphology, laboratory cultivation identification and maintenance. It's also discusses with sterilization of pharmaceutical products, equipment, media etc. The course further discusses the immunological preparations, diseases its transmission, diagnosis, control and immunological tests.

**At completion of the course it is expected that students will be able to understand:**

**(Student learning outcomes)**

**Theory:**

1. Explain the different concept of rational aspects of Micro organisms, design and their significance of various products.
2. Classify the various categories of microbiological assays based on their biochemical nature.
3. Correlate the pharmaceutical products and conventional properties with the structural feature.
4. Explain the biochemical basis of the pharmacological activities of the new microbial products.
5. Design the molecular aspects of fermentation.

**Practical:**

1. Identify the microbes, culturing and biochemical reactions of cultures.
2. Explain the principle involved in the Microbiological analysis of pathogenic organisms.
3. Prepare and purify the organisms by total and viable count by using appropriate procedure.
4. Carry out the microbiological assays and tests for the various drug substances using appropriate methodology.

**Teaching/learning methodologies used:**

1. Lecture
2. Pracactical /Lab
3. Discussion

**Course Materials:****TEXT BOOKS**

- a) Vanitha Kale and Kishor Bhusari “Applied Microbiology” Himalaya Publishing house Mumbai.
- b) Mary Louis Turgeon “Immunology and Serology in Laboratory Medicines” 2<sup>nd</sup> edition, 1996 Mosby- Year book inc St. Louis Missouri.
- c) Harsh Mohan, “Text book of Pathology” 3<sup>rd</sup> edition, 1998, B-3 Ansari road Daryaganj N. Delhi.

**REFERENCE BOOKS**

- a) Prescott L.M., Jarley G.P Klein D.A “Microbiology” 2<sup>nd</sup>- edition Mc Graw Hill Company Inc.
- b) Rawlins E.A. “Bentley’s Text Book of Pharmaceutics” Bailliere Tindals 24-28, London 1988.
- c) Forbisher “Fundamentals of Microbiology” Philadelphia W.B. Saunders.
- d) Prescott L.M. Jarley G.P., Klein D.A. “Microbiology.” 2<sup>nd</sup> edition WMC Brown Publishers, Oxford. 1993.
- e) War Roitt, Jonathan Brostoff, David male, “Immunology”3<sup>rd</sup> edition 1996, Mosby-year book Europe Ltd, London.
- f) Pharmacopoeia of India, Govt. of India, 1996.

**Lecture wise Programme:**

Topic	Hrs
<b>1 Introduction to the science of microbiology.</b>	
Major divisions of microbial world and Relationship among them.	<b>03</b>
<b>Morphology &amp; Physiology of Microorganisms</b>	
<b>2</b> Different methods of classification of microbes and study of Bacteria, Fungi, Virus, Rickettsiae, Spirochetes.	<b>07</b>
Growth & Nutrition.	
Nutritional requirements.	
Growth and cultivation of bacteria and virus.	
Culture Media for aerobic and anaerobic bacteria & fungi.	
<b>3 Maintenance of lab cultures.</b>	<b>08</b>
Isolation and Identification of Bacteria	
Different methods-Staining reactions.	
Biochemical reactions.	
<b>4 Counting of bacteria</b> -Total and Viable counting techniques.	<b>08</b>
<b>Sterilization</b>	
<b>5</b> Detailed study of different methods of sterilization with merits and demerits. Sterilization methods for all pharmaceutical products	<b>08</b>
Detailed study of sterility testing of different pharmaceutical preparations.	
Validation of various sterilization techniques.	
<b>6 Disinfectants</b>	<b>07</b>

- Study of disinfectants, antiseptics, fungicidal and  
Factors affecting their action and mechanism of action.  
Evaluation of bactericidal, bacteriostatic, virucidal and  
preservatives in  
pharmaceutical preparations.
- Immunology**  
Definition, Classification, General principles of natural  
immunity, Phagocytosis, acquired immunity (active and  
passive). Antigens, chemical nature of antigens structure and  
formation of Antibodies, Antigen-Antibody reactions. **12**
- Bacterial exotoxins and endotoxins. Significance of toxoids in active  
immunity,  
Immunization programme, and importance of booster dose. **07**
- 8 Diagnostic tests** **07**  
Schick's Test, Elisa test, Western Blot test, Southern Blot PCR,  
Widal, QBC, Mantoux Peripheral smear.  
Study of malarial parasite.
- 9 Microbiological Assays** **05**  
Microbial culture sensitivity Testing: Interpretation of results  
Principles and methods of different microbiological assays.  
Microbiological assay of Penicillin, Streptomycin and vitamin B<sub>2</sub>  
and B<sub>12</sub>.  
Standardization of vaccines and sera.
- Study of infectious diseases**
- 10** Typhoid, Tuberculosis, Malaria, Cholera, Hepatitis, Meningitis, **10**  
Syphilis & Gonorrhoea and HIV

### Theory Sessional examination syllabus

Sessional No.	Syllabus
	Chapters no.
I	1-4
II	5, 6 & 10
III	7-9

## 2.2 PHARMACEUTICAL MICROBIOLOGY (PRACTICALS)

**Practical: 75 Hours (3 Hrs/Week)**

**Responsible member of the academic staff: Ms Haripriya G (HG)**

**Title of the Experiment:**

- 1 Study of apparatus used in experimental microbiology\*.
- 2 Sterilisation of glass ware's. Preparation and sterilisation of media\*
- 3 Staining techniques – Simple staining; Gram's staining; Negative staining\*\*
- 4 Study of motility characters\*.
- 5 Enumeration of micro-organisms (Total and Viable)\*
- 6 Study of the methods of isolation of pure culture.\*
- 7 Bio chemical testing for the identification of micro\*-organisms.
- 8 Cultural sensitivity testing for some micro-organisms.\*
- 9 Sterility testing for powders and liquids.\*
- 10 Determination of minimum inhibitory concentration.\*
- 11 Microbiological assay of antibiotics by cup plate method.\*
- 12 Microbiological assay of vitamins by Turbidometric method\*\*
- 13 Determination of RWC.\*\*

\* Indicate minor experiment & \*\* indicate major experiment

**Assignments:**

- 1 Visit to some pathological laboratories & study the activities and equipment/instruments used and reporting the same.
2. Visit to milk dairies (Pasteurization) and microbial laboratories (other sterilization methods) & study the activities and equipment/instruments used and reporting the same.
3. Library assignments
  - a. Report of recent microbial techniques developed in diagnosing some common diseases.
  - b. Latest advancement developed in identifying, cultivating & handling of microorganisms.

**Format of the assignment:**

1. Minimum & Maximum number of pages.
2. It shall be computer draft copy.
3. Reference(s) shall be included at the end.
4. Name and signature of the student.
5. Assignment can be a combined presentation at the end of the academic year.
6. Time allocated for presentation may be 8+2 Min.

**Scheme of Practical Examination:**

	Sessionals	Annual
Synopsis	05	15
Major Experiment	10	25
Minor Experiment	03	15
Viva	02	15
<b>Max Marks</b>	<b>20</b>	<b>70</b>
<b>Duration</b>	<b>03 hrs</b>	<b>04 hrs</b>

*Note: Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).*



## 2.3 PHARMACOGNOSY & PHYTOPHARMACEUTICALS (THEORY)

**Theory: 3 Hrs. /Week**

**Responsible member/s of the academic staff: Dr. J. Suresh (JS)**

**Scope and Objectives:** This subject has been introduced for the pharmacy course in order to make the student aware of medicinal uses of various naturally occurring drugs their history, sources, distribution, method of cultivation, active constituents, medicinal uses, identification tests, preservation methods, substitutes and adulterants.

**At completion of this course it is expected that students will be able to:  
(Student learning outcomes)**

**Theory:**

1. Explain the different concept of rational aspects of Micro organisms, design and their significance of various products.
2. Classify the various categories of microbiological assays based on their biochemical nature.
3. Correlate the pharmaceutical products and conventional properties with the structural feature.
4. Explain the biochemical basis of the pharmacological activities of the new microbial products.
5. Design the molecular aspects of fermentation.

**Practical:**

1. identify the crude drugs by macroscopical and microscopical characters
2. perform the chemical tests for the identification of unorganized drugs.

**Teaching/learning methodologies used**

1. Lecture
2. Practical/Lab
3. Discussion

**Course materials**

**TEXT BOOKS**

- a. Pharmacognosy by G.E. Trease & W.C. Evans.
- b. Pharmacognosy by C.K. Kokate, S.B. Gokhale & A.C. Purohit.

**REFERENCE BOOKS**

- a. Pharmacognosy by R. Brady & V.E. Tyler.
- b. Pharmacognosy by T.E. Wallis.
- c. Pharmacognosy by C.S. Shah & J.S. Quadry.
- d. Pharmacognosy by M.A. Iyengar.

**Lecture wise programme:**

<b>No.</b>	<b>Topic</b>	<b>Hrs</b>
1.	Introduction.	01
2.	Definition, history and scope of Pharmacognosy.	02
3.	Classification of crude drugs viz. alphabetical, morphological, chemical, pharmacological, taxonomical methods. General methods of chemotaxonomy.	05
4.	Cultivation, collection, processing and storage of crude drugs. Conservation of medicinal plants.	05
5.	Detailed method of cultivation of crude drugs. a) Senna b) Cinchona c) Cardamom d) Opium e) Isapgol f) Ergot h) Ginger	06
6.	Study of cell wall constituents and cell inclusions.	04
7.	<b>Study of morphology and microscopy of different plants parts.</b> i. Leaf: Datura, Senna ii. Bark: Cinnamon (Cassia), Cinchaona iii. Wood: Quassia iv. Stem: Ephedra v. Root: Rauwolfia, Liquorice vi. Rhizome: Ginger, Podophyllum. vii. Flower buds: Clove. viii. Fruits: Coriander, Fennel ix . Seeds: Isapgol, Nux Vomica.	10
8.	<b>Study of natural pesticides.</b> Pyrethrum, Neem, Tobacco	03
9.	<b>Detailed study of various plant constituents.</b> a) Detailed study of Carbohydrates and related products. b) Biological source, method of production, chemical constituents, tests, uses and adulterants of i) Honey ii) Acacia iii) Agar iv) Sterculia v) Tragacanth vi) Cellulose and its products vii) Pectin viii) Guar gum ix) Sodium alginate.	10
10.	Definition, sources, method extraction, chemistry and method of analysis of Lipids. Study of method of production, chemical constituents, tests, uses and adulterants of the following drugs. i) Castor oil ii) Shark liver oil iii) Chaulmoogra oil iv) Wool fat v) Bees wax vi) Spermaceti vii) Cocoa butter viii) Olive oil	07
11.	Therapeutic application of herbal drugs, poisonous plants, herbal-drug interaction, edible vaccines, marine Pharmacognosy.	04
12.	Introduction, definition, classification, general properties, chemical tests and general method of isolation of Alkaloids, Glycosides, Essential Oils, Flavonoids, Resins and Tannins.	12
13.	Study of plants fibers used in surgical dressings and related products.	04
14.	Different methods of adulteration of crude drugs and general methods of detection of adulterants.	02

**Theory Sessional examination syllabus**

Sessional No.	Syllabus
	Chapters no.
I	1-7
II	8, 9, 10,11
III	11,12,13,14

**2.3 PHARMACOGNOSY & PHYTOPHARMACEUTICALS (PRACTICALS)****Practical: 75 Hours (3 Hrs./Week)****Responsible member/s of the academic staff: Dr. J. Suresh (JS)****General Requirements:** Laboratory Napkin, Observation Book (150 pages), Zero brush, Needle, Blade, Match box.**List of experiments:**

1. Introduction.
2. Tissue and tissue system
3. Macro, powder and microscopic study of Datura.
4. Macro, powder and microscopic study of Senna.
5. Macro, powder and microscopic study of Cassia Cinnamon.
6. Macro, powder and microscopic study of Cinchona
7. Macro, powder and microscopic study of Ephedra.
8. Macro, powder and microscopic study of Quassia.
9. Macro, powder and microscopic study of Clove
10. Macro, powder and microscopic study of Fennel.
11. Macro, powder and microscopic study of Coriander.
12. Macro, powder and microscopic study of Isapgol.
13. Macro, powder and microscopic study of Nux vomica.
14. Macro, powder and microscopic study of Ginger
15. Macro, powder and microscopic study of Podophyllum.
16. Determination of acid value.
17. Determination of Saponification value
18. Chemical tests for Acacia and Tragacanth
19. Chemical tests for Agar and Starch
20. Chemical tests for Gelatin & Castor Oil
21. Determination of moisture content of crude drug.
22. Isolation of Volatile oil.

**Scheme of Practical Examination**

	<b>Sessionals</b>	<b>Annual</b>
Synopsis	04	10
Identification	04	10
Major Experiment	07	20
Minor Experiment	03	15
Viva	02	15
<b>Max Marks</b>	<b>20</b>	<b>70</b>
<b>Duration</b>	<b>03 hrs</b>	<b>04 hrs</b>

Note: Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).

## 2.4 PHARMACOLOGY –I (THEORY)

**Theory: 3 Hrs. /Week**

**Responsible member/s of the academic staff: Ms Nagashree K S (KNS)**

**Scope and Objectives:** The main purpose of the subject is to understand what drugs do to living organism and how their effects can be applied to therapeutics and thus to improve the outcome of therapeutic intervention by the doctors. The subject covers the complete information about the drugs like, sources, physico-chemical properties, mechanism of action, physiological and biochemical effects (Pharmacodynamics) as well as absorption, distribution, metabolism and excretion (Pharmacokinetics) along with the adverse effects, clinical uses, interactions, doses, contraindications and routes of administration of different classes of drugs.

**At completion of this course it is expected that students will be able to:  
(Student learning outcomes)**

**Theory:**

1. Explain the principles of Pharmacodynamics and Pharmacokinetics
2. Describe the basics concepts of drug toxicity, preclinical evaluation and drug interactions
3. Name the different classes of drugs for the treatment of various diseases
4. Describe the mechanisms of action and Pharmacological actions of different class of drugs
5. Describe the clinical uses and adverse effects of different class of drugs

**Teaching/learning methodologies used:**

1. Lecture

**Course materials**

### TEXT BOOKS

- a. Tripathi, K. D. Essentials of medical pharmacology. 6<sup>th</sup> edition, 2008. Publisher: Jaypee, Delhi.
- b. Satoskar, R.S. and Bhadarkar, S.D. Pharmacology and pharmacotherapeutics. 20<sup>th</sup> edition, 2008. Publisher: Popular, Mumbai.
- c. Rang, H.P. & Dale, M.M. Pharmacology. 5<sup>th</sup> edition, 2003. Publisher: Churchill Living stone.

### REFERENCE BOOKS

- a. Goodman Gilman, A., Rall, T.W., Nies, A.I.S. and Taylor, P. Goodman and Gilman's The pharmacological basis of therapeutics. 11<sup>th</sup> edition, 2006. Publisher McGraw Hill, Pergamon Press.
- b. Craig, C.R. & Stitzel, R.E. Modern Pharmacology. 5<sup>th</sup> edition, 1997. Publisher: Little Brown Co.
- c. Katzung, B.G. Basic and clinical pharmacology. 9<sup>th</sup> edition, 2004. Publisher: Prentice Hall, Int.
- d. Shargel and Leon. Applied Biopharmaceutics and Pharmacokinetics. Latest edition 2002. Publisher: Prentice Hall, London.

**Lecture wise Programme:**

<b>Topics</b>	<b>Hrs</b>
<b>1. General Pharmacology</b>	<b>16</b>
Introduction, definitions and scope of pharmacology	
Routes of administration of drugs	
Pharmacokinetics (absorption, distribution, metabolism and excretion)	
Pharmacodynamics	
Factors modifying drug effects	
Drug toxicity – Basic concepts, acute, sub-acute and chronic toxicity	
Pre-clinical evaluation	
Drug interactions	
<i>Note:</i> The term Pharmacology used here refers to the classification, mechanism of action, pharmacokinetics, pharmacodynamics, adverse effects, contraindications, therapeutic uses, interactions and dose and route of administration.	
<b>2. Pharmacology of drugs acting on ANS</b>	<b>09</b>
Introduction to neurotransmission	
Adrenergic and antiadrenergic drugs	
Cholinergic and anticholinergic drugs	
Mydriatics and miotics	
Drugs used in myasthenia gravis	
Neuromuscular blockers	
<b>3. Pharmacology of drugs acting on cardiovascular system</b>	<b>09</b>
Antihypertensives	
Anti-anginal drugs	
Anti-arrhythmic drugs	
Drugs used for therapy of Congestive Heart Failure	
Drugs used for hyperlipidaemias	
<b>4. Pharmacology of drugs acting on Central Nervous System</b>	<b>20</b>
a) Excitatory and inhibitory neurotransmitters of CNS	
b) General anesthetics	
c) Sedatives and hypnotics	
d) Anticonvulsants	
e) Analgesic and anti-inflammatory agents	
f) Psychotropic drugs	
g) Antiparkinsonism drugs	
h) Alcohol and methyl alcohol	
i) CNS stimulants and cognition enhancers	
j) Centrally acting skeletal muscle relaxants	
k) Drug dependence, abuse and tolerance. List of drugs causing such problems	
<b>5. Pharmacology of Local anaesthetics</b>	<b>02</b>
<b>6. Pharmacology of Drugs acting on Respiratory tract</b>	

Bronchodilators	<b>05</b>
Mucolytics	
Expectorants	
Antitussives	
Nasal Decongestants	
<b>7. Pharmacology of Hormones and Hormone antagonists</b>	<b>08</b>
Thyroid and Antithyroid drugs	
Insulin, Insulin analogues and oral hypoglycemic agents	
Sex hormones and oral contraceptives	
Oxytocin and other stimulants and relaxants	
<b>8. Pharmacology of autocooids and their antagonists</b>	<b>06</b>
Histamines and Antihistaminics	
5-Hydroxytryptamine and its antagonists	
Lipid derived autocooids and platelet activating factor	

#### Theory Sessional examination syllabus

Sessional No.	Syllabus
	Chapters no.
I	1 – 2
II	3 – 4f
III	4g - 8

## 2.5 COMMUNITY PHARMACY (THEORY)

**Theory: 2 Hrs. /Week**

**Responsible member/s of the academic staff: Dr Srikanth M S (MSS)**

**Scope and Objectives:** This course is designed to ensure that students are skilled and knowledgeable to provide various pharmaceutical care services to patients and general practitioners in the community setup.

**At completion of this course it is expected that students will be able to:**  
(Student learning outcomes)

**Theory:**

1. Describe basic roles and responsibilities of community pharmacist and management of community pharmacies.
2. Discuss the process of pharmaceutical care in community settings.
3. Conduct patient counselling, medication adherence monitoring, health screening services and health promotion in community settings.
4. Summarize pathophysiology and management of minor ailments and communicable diseases.

**Teaching/learning methodologies used:**

1. Lecture
2. Discussion

**Course Materials:**

**TEXT BOOKS:**

- a. Health Education and Community Pharmacy by N.S.Parmar.
- b. WHO consultative group report.
- c. Drug store & Business management by Mohammed Ali & Jyoti.

**REFERENCE BOOKS:**

- a. Handbook of pharmacy – health care. Edt. Robin J Harman. The Pharmaceutical Press.
- b. Comprehensive Pharmacy Review – Edt. Leon Shargel. Lippincott Williams & Wilkins.

**Special requirements:**

The college is having model community pharmacy (meeting the schedule N requirement) which helps for training the students on dispensing and counseling activities. Special equipments like Sphygmomanometer, Glucometer is used for health screening services like HTN and DM.

**Lecture wise programme :**

	<b>Topic</b>	<b>Hrs</b>
<b>1. Definition and scope of community pharmacy</b>		<b>2</b>
	<b>Roles and responsibilities of Community pharmacist</b>	
<b>2. Community Pharmacy Management</b>		<b>4</b>



a) Selection of site, Space layout, and design	
b) Staff, Materials- coding, stocking	
c) Legal requirements	
d) Maintenance of various registers	
e) Use of Computers: Business and health care soft wares	
<b>3. Prescriptions</b> – parts of prescription, legality & identification of medication related problems like drug interactions.	<b>2</b>
<b>4. Inventory control in community pharmacy</b>	
Definition, various methods of Inventory Control	<b>3</b>
ABC, VED, EOQ, Lead time and safety stock	
<b>5. Pharmaceutical care</b>	
Definition and Principles of Pharmaceutical care.	<b>2</b>
<b>6. Patient counseling</b>	
Definition, outcomes, various stages, barriers, strategies to overcome barriers	<b>4</b>
Patient information leaflets- content, design, layouts & advisory labels	
<b>7. Patient medication adherence</b>	
Definition, Factors affecting medication adherence and role of pharmacist in improving the adherence	<b>2</b>
<b>8. Health screening services</b>	
Definition, importance, methods for screening blood pressure/ blood sugar/ lung function and Cholesterol testing	<b>3</b>
<b>9. OTC Medication - Definition, OTC medication list &amp; Counselling</b>	<b>3</b>
<b>10. Health Education</b>	
WHO Definition of health and health promotion, care for children, pregnant & breast feeding women and geriatric patients.	<b>2</b>
<b>11. Commonly occurring communicable diseases, causative agents, Clinical presentations and prevention of communicable diseases – Tuberculosis, Hepatitis, Typhoid, Amoebiasis, Malaria, Leprosy, Syphilis, Gonorrhoea and AIDS</b>	<b>9</b>
<b>12. Balance diet, treatment &amp; prevention of deficiency disorders</b>	<b>2</b>
<b>13. Family planning – role of pharmacist</b>	<b>1</b>
<b>14. Responding to symptoms of minor ailments</b>	
Relevant pathophysiology and common drug therapy to Pain, GI disturbances (Nausea, Vomiting, Dyspepsia, diarrhea, constipation), Pyrexia, Ophthalmic symptoms and worms infestations.	<b>8</b>
<b>15. Essential Drugs concept and Rational Drug Therapy</b>	
Role of community pharmacist	<b>2</b>
<b>16. Code of ethics for community pharmacists</b>	<b>1</b>

**Theory Sessional examination syllabus**

<b>Sessional</b>	<b>Chapter No</b>
I	1, 5, 9, 10,11
II	2, 3, 4, 6, 8, 16
III	7, 12, 13, 14, 15

## 2.6 PHARMACOTHERAPEUTICS-I (THEORY)

**Theory: 3 Hrs. /Week**

**Responsible member/s of the academic staff: Mr. Sri Harsha Chalasani (CSH)**

**Scope and Objectives:** Imparts knowledge and skills necessary for contribution to quality use of medicines and management of various disease conditions.

**At completion of this course it is expected that students will be able to understand:  
(Student learning outcomes)**

**Theory:**

1. Describe the etiopathogenesis of selected diseases and correlate them to clinical condition(s) of the respective disease.
2. Explain the general therapeutic approach to management of selected diseases.
3. Apply the knowledge to justify the clinical controversies and rationale in individualizing drug therapy plans.
4. Distinguish the management strategies of selected diseases in special populations.
5. Assess drug safety monitoring, contraindications and treatment outcomes and modify treatment plan as needed.

**Practical:**

1. Gather and analyse patient medical records and prepare pharmaceutical care plan.
2. Perform treatment chart review and identify medication related problems (MRPs).
3. Communicate and resolve MRPs to concerned health care professionals.
4. Perform the patient medication counselling as per the requirement of the patient and/or recommended by a clinician.

**Teaching/learning methodologies used:**

1. Lecture
2. Practical/Lab
3. Discussion
4. Case Study

**Course materials**

**TEXT BOOKS**

- a. Clinical Pharmacy and Therapeutics – Walker and Whittlesea, Churchill Livingstone
- b. publication
- c. Pharmacotherapy: A Pathophysiology approach - Joseph T. Dipiro et al. Appleton & Lange

**REFERENCE BOOKS**

- a. Pathologic basis of disease: Robbins SL, W.B. Saunders publication
- b. Pathology and therapeutics for Pharmacists: A Basis for Clinical Pharmacy Practice - Green and Harris, Chapman and Hall publication
- c. Clinical Pharmacy and Therapeutics - Eric T. Herfindal, Williams and Wilkins Publication
- d. Applied Therapeutics: The clinical Use of Drugs. Lloyd Young and Koda-Kimble MA, Williams and Wilkins Publication
- e. Avery's Drug Treatment, 4th Edn, 1997, Adis International Limited.
- f. Relevant review articles from recent medical and pharmaceutical literature.

**Lecture wise Programme**

**Etiopathogenesis and pharmacotherapy of diseases associated with following systems/ diseases.**

<b>Topic</b>	<b>Hrs</b>
<b>1. Cardiovascular system</b>	<b>30</b>
a. Hypertension, Congestive cardiac failure, Angina Pectoris, Myocardial infarction, Hyperlipidemia	
b. Electrophysiology of heart and Arrhythmias.	
<b>2. Respiratory system</b>	<b>15</b>
Introduction to Pulmonary function test, Asthma, Chronic obstructive airways disease, Drug induced pulmonary diseases .	
<b>3. Endocrine system</b>	<b>19</b>
Diabetes, Thyroid diseases, Oral contraceptives, Hormone replacement therapy, Osteoporosis .	
<b>4. General prescribing guidelines for</b>	<b>04</b>
Paediatric patients	
Geriatric patients	
Pregnancy and breast feeding .	
<b>5. Ophthalmology</b>	<b>04</b>
Glaucoma, Conjunctivitis- viral & bacterial.	
<b>6. Introduction to rational drug use</b>	<b>03</b>
Definition, Role of pharmacist in promoting rational drug use and essential drug concept.	

**Theory Sessional examination syllabus**

<b>Sessional No.</b>	<b>Syllabus</b>
	<b>Chapters no.</b>
I	4, 5 & 6
II	1a & 1b
III	2 & 3

## 2.6 PHARMACOTHERAPEUTICS-I (PRACTICALS)

**Practical: 75 Hours (3 Hrs /Week)**

**Responsible member/s of the academic staff: Mr. Sri Harsha Chalasani (CSH)**

Hospital postings in various departments designed to complement the lectures by providing practical clinical discussion; attending ward rounds; follow up the progress and changes made in drug therapy, in allotted patients; case presentation upon discharge. Students are required to maintain a record of cases presented and the same should be submitted at the end of the course for evaluation. A minimum of 15 cases should be presented and recorded covering most common diseases.

### ASSIGNMENTS

Students are required to submit written assignments on the topics given to them. Topics allotted should cover recent developments in drug therapy of various diseases. A minimum of THREE assignments [1500 – 2000 words] should be submitted for evaluation.

### Format of the assignment

- Minimum & Maximum number of pages.
- Reference(s) shall be included at the end.
- Assignment can be a combined presentation at the end of the academic year
- It shall be computer draft copy
- Name and signature of the student
- Time allocated for presentation may be 8+2 min

### Scheme of Practical Examination

	Sessionals	Annual
Synopsis	05	15
Major experiment	10	25
Minor experiment	03	15
Viva	02	15
<b>Max. Marks</b>	<b>20</b>	<b>70</b>
<b>Duration</b>	<b>03 hours</b>	<b>04 hours</b>

\* Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance)

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

**Modified Schedule and Link for Online Classes – PharmD**

(w.e.f 01-06-2020)

**PharmD – Second Year**

<b>Day</b>	<b>02:00 PM to 02:50 PM</b>	<b>03:00 PM to 03:50 PM</b>	<b>04:00 PM to 04:50 PM</b>
<b>Mon</b>	Pharmacotherapeutics-I	Pharmacognosy & Phytopharmaceuticals	Pharmaceutical Microbiology
<b>Tue</b>	Pharmacology-I	Pathophysiology	Community Pharmacy
<b>Wed</b>	Pharmacotherapeutics-I	Pharmacognosy & Phytopharmaceuticals	Pharmacology-I
<b>Thu</b>	Pharmacology-I	Pathophysiology	Community Pharmacy
<b>Fri</b>	Pharmacotherapeutics-I	Pathophysiology	Pharmaceutical Microbiology

**JSS Academy of Higher Education & Research**  
**JSS College of Pharmacy**  
 Sri Shivarathreshwara Nagara, Mysore-570015  
**CLASS TIME TABLE - 2020-21**

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

Class: PHARM. D –SECOND YEAR

Time Day	9.00-9.50AM	9.50-10.40AM	11.10-12.05PM	12.05-1.00PM	2.00-2.55PM	2.55-3.50PM	4.05-5.00PM	5.00-5.55 PM
<b>Monday</b>	-----	←BI----- JS	P.Cog & Phytopharmaceuticals----→		←B II-----CSH----- Pharmaco-		Therapeutics-I→	-----
<b>Tuesday</b>	Pharmacology-I KSN	←BII--- HP-	--Pharmaceutical microbiology-- →		Community Pharmacy MSS	Pathophysiology RSS	Community Pharmacy MSS	
<b>Wednesday</b>	-----	←B I--- HP ←BII --- JS ---	Pharmaceutical Microbiology----→ Pharmacognosy & Phytoicals ----→		Pharmaceutical microbiology HP	Pharmaco- Therapeutics-I CSH	Pharmaco- Therapeutics-I CSH	
<b>Thursday</b>	Pharmacology-I KSN	Pharmaco- Therapeutics-I CSH	P.Cog & Phytopharmaceut icals JS	Pharmaco- Therapeutics-I (Tu) CSH	P.Cog & Phytopharmaceut icals JS	Pathophysiology RSS	Pathophysiology RSS	
<b>Friday</b>	Pharmaceutical microbiology (Tu) HP	P.Cog& Phytopharmaceut icals JS	Pharmacology I KSN	Pharmacology I (Tut) KSN	←BI----- CSH----- Pharmaco-		Therapeutics→	
<b>Saturday</b>	Pharmaceutical microbiology HP	Pharmacognosy & Phytopharmaceut icals (Tu) JS	Pharmaceutical microbiology HP	Community Pharmacy (Tu) MSS	-----			

\*Effective from: 05<sup>th</sup> Aug 2020

Note: 1. No tea break for practicals

Time table Coordinator  
 Copy: SNB/LNB/SCF/e.copy – teachers/ Office in charge – time table / Time table coordinator

Principal