



Ordinance Governing Diploma in Pharmacy (D.Pharm.) Course, Pharmacy Council of India.

Rules & Syllabus for the Diploma in Pharmacy (S. Y. D. Pharm) Course



Index

Sr.	CONTENT	Page
1	SANJAY GHODAWAT UNIVERSITY KOLHAPUR	4
	VISION	5
	MISSION	5
	CORE VALUES	5
	QUALITY POLICY	5
	OUTCOME BASED EDUCATION (OBE) MODEL	6
2	CHAPTER- I: REGULATIONS	9
	SCHEME & SYLLABUS FOR DIPLOMA IN PHARMACY	10
	APPENDIX- E	19
3	CHAPTER - II: SYLLABUS	21
	SECOND YEAR D. PHARM COURSE STRUCTURE	22
	DP201T. PHARMACEUTICS-II (Theory)	23
	DP201P. PHARMACEUTICS-II (Practical)	25
	DP202T. PHARMACEUTICAL CHEMISTRY-II (Theory)	26
	DP202P. PHARMACEUTICAL CHEMISTRY-II (Practical)	28
	DP203T. PHARMACOLOGY & TOXICOLOGY (Theory)	29
	DP203P. PHARMACOLOGY (Practical)	30
	DP204T. PHARMACEUTICAL JURISPRUDENCE (Theory)	32
	DP205T. DRUG STORE AND BUSINESS MANAGEMENT (Practical)	34
	DP206T. HOSPITAL AND CLINICAL PHARMACY (Theory)	36
	DP206P. HOSPITAL AND CLINICAL PHARMACY (Practical)	38



SANJAY GHODAWAT UNIVERSITY KOLHAPUR

Sanjay Ghodawat University (SGU) is established in the Academic Year 2017-18, as a State Private University under Govt. of Maharashtra Act No. XL of 2017 dated 3rd May 2017, with the approval of the UGC and the state Government. "For the true measure of giving is giving without measure." Spread across 150 Acres, Sou. Sushila Danchand Ghodawat Charitable Trust's Sanjay Ghodawat University (SGU) is situated in serene atmosphere amidst idyllic hills and lush green meadows to study in harmony with Nature. The Institution aspires to run along the lines of best-in- the-world education and become a world-class institution where teaching-learning process gets a far deeper meaning. SGU always stands as the guiding star of brilliance, quality and deliverance beyond expectations. Innovativeness and Creativity are the hallmarks of a genius enterprise and SGU stands to be a stage where these qualities would be nurtured, encouraged and blossomed. The genius is incomplete without the sense of social responsibility and SGU's ultimate goal remains the development of an attitude of gratitude that freely gives back without expectations. The Sanjay Ghodawat University stands as a beacon of light to guide the younger generation of the day on the right path to fulfillment in career and life. The USP of the University is its research based curriculum and academically oriented teaching staff. The world class ambience and infrastructure helps the students to easily accommodate themselves in an environment that is conducive to the teaching- learning process. Hands on experience, challenge based case studies, maximum participation of students in the classroom, use of modern digital technology, smart classrooms, solution oriented thinking promotion, stress on research and innovation, international tie ups, choice based credit system for flexibility in choosing areas of interest etc. are some of the features of the University. The university will help students develop as a unique individual-to be educated as a whole person, intellectually, emotionally, socially, ethically, and spiritually. The educational program designs are worked out meticulously in line with best in class universities with special focus on:

- Flexible Choice Based Credit System
- OBE - Outcome Based Education System
- Experiential Learning
- Project Based Learning
- Case Based Learning
- Training need analysis based on Performance Appraisal System
- Active Learning tools for effective delivery
- Mentoring / Proctorship
- On line learning /Self learning platforms
- Flipped Classroom concept
- Effective Student Feedback Mechanism



VISION

Internationally recognized university of excellence in creating and disseminating knowledge through value-based quality education leading to betterment of mankind

MISSION

- To prepare students for life-long learning and leadership in a global academic culture
- To create intellectual manpower relevant to the industry and society at large
- To collaborate with institutions of international repute for academic excellence
- To promote research and development through conducive environment
- To encourage entrepreneurship and skill development programs

CORE VALUES

- Integrity
- Transparency
- Accountability
- Equality
- Empathy
- Stewardship

QUALITY POLICY

Sanjay Ghodawat University is committed to establish high standards in value-based quality education to enhance and nurture young minds to excel in their chosen profession and develop into socially responsible citizens through resourceful collaboration, innovation and research

OUTCOME BASED EDUCATION (OBE) MODEL

Sanjay Ghodawat University (SGU) has implemented OBE model of education, which is a learner centered approach. SGU has witnessed a sea change in the entire academic systems with implementation of all three components of OBE – Design, Delivery and Assessment. The SGU model of autonomy focuses on experiential learning which believes in learning by doing. This is achieved through hands on experience, industrial assignments, mini projects and live problem solving and collaboration with industries.

SGU is set in to dynamics of transformation and witnessing a shift in focus from teaching to learning and entire academic system of SGU is designed to provide multiple learning opportunities for students to acquire and demonstrate the Knowledge, Skills and Attitudes (KSA) for rewarding career. The Vision and Mission of the Management, contribution from eminent BOG members and knowledgeable members of Academic Council and Board of Studies, the motivation and drive of the Director, the relentless efforts of the fellow Deans and Head of Departments and all teaching and non teaching staff along with commitment to learning of students made it possible to successfully transform the institute and stand out to carve a niche for itself as an Institute of repute.

OBE is an approach of curriculum design and teaching that focuses on what students should be able to do (attained) at the end of course/ program. Outcome based education (OBE) is student-centered instruction model that focuses on measuring student performance through outcomes. Outcomes include knowledge, skills and attitudes (KSA). Its focus remains on evaluation of outcomes of the program by stating the knowledge, skill and behavior a graduate is expected to attain upon completion of a program and after 4 – 5 years of graduation. In the OBE model, the required knowledge and skill sets for a particular degree is predetermined and the students are evaluated for all the required parameters (Outcomes) during the course of the program.

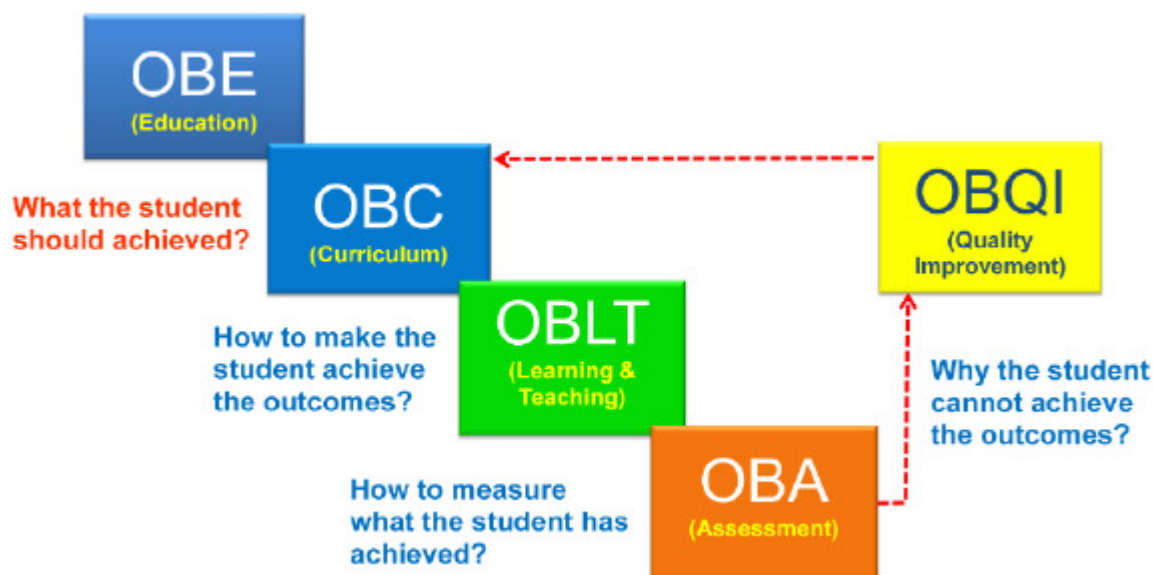
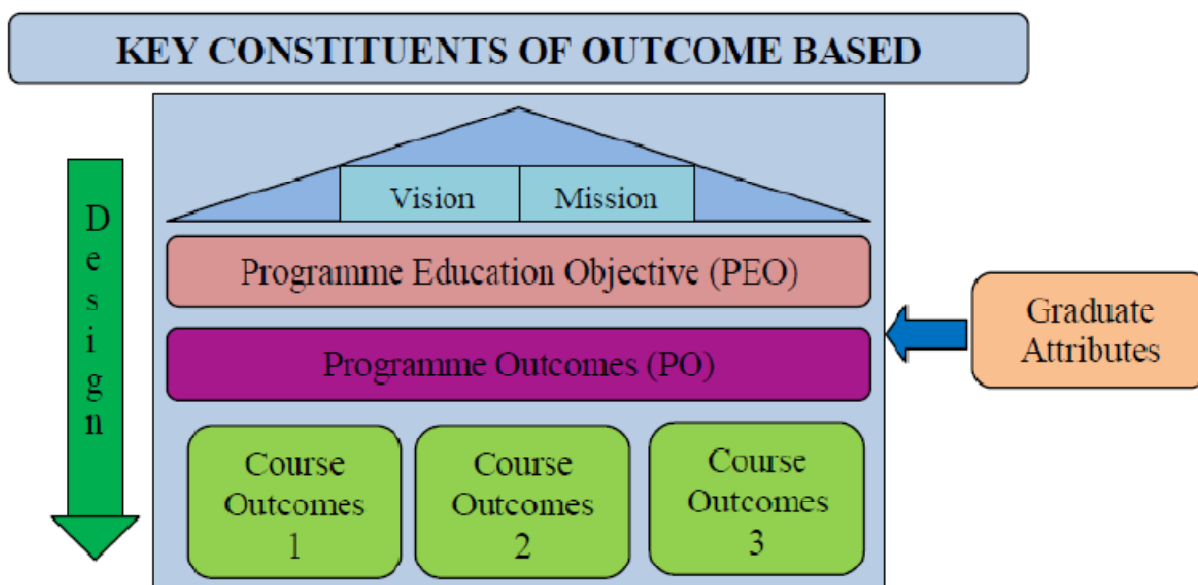


Figure 1: OBE flows and description



The OBE model measures the progress of the graduate in three parameters, which are

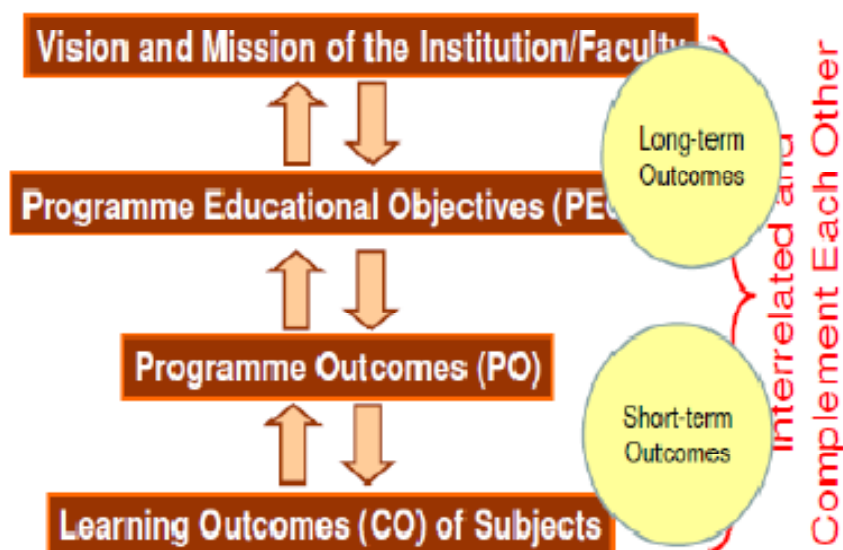
- Program Educational Objectives (PEO)
- Program Outcomes (PO)
- Course Outcomes (CO)

Program Educational Objectives (PEO) are broad statements that describe the career and professional accomplishments that the program is preparing the graduates to achieve. PEO's are measured 4-5 years after graduation. Program outcomes are narrower statements that describe what students are expected to know and be able to do by the time of graduation. They must reflect the Graduate attributes. Course outcomes are the measurable parameters which evaluates each students performance for each course that the student undertakes in every semester.

The various assessment tools for measuring Course Outcomes include Tests and End Semester Examinations, Tutorials, Assignments, Project work, Labs, Presentations, Employer/Alumni Feedback etc,. These course outcomes are mapped to Graduate attributes and Program outcomes based on relevance. This evaluation pattern helps Institutions to measure the Program Outcome. The Program Educational Objective is measure through Employer satisfaction survey (Yearly), Alumni survey (Yearly), Placement records and higher education records.

Outcomes in OBE

A Model Hierarchy of Outcomes



Special Features of OBE

- OBE is an educational process that focuses on what students can do or the qualities they should develop after they are taught.
- OBE involves the restructuring of curriculum, assessment and reporting practices in education to reflect the achievement of high order learning and mastery rather than accumulation of course credits.
- Both structures and curricula are designed to achieve those capabilities or qualities.
- Discourages traditional education approaches based on direct instruction of facts and standard methods.
- It requires that the students demonstrate that they have learnt the required skills and content.



CHAPTER- I:

REGULATIONS



SCHEME & SYLLABUS FOR DIPLOMA IN PHARMACY

1. DURATION OF THE COURSE:

The duration of the course shall be for two academic years, with each academic year spread over a period of not less than one hundred and eighty working days in addition to 500 hours practical training spread over a period of not less than 3 months.

2. ELIGIBILITY FOR ADMISSION:

No. Candidate shall be admitted to Diploma in Pharmacy Part-I unless he/she had passed any of the following examinations in all the optional subjects and compulsory subjects (Physics, Chemistry, Biology and /or Mathematics including English as one of the Compulsory subjects):

- a) Intermediate examination in Science; The First Year of the three year degree course in Science; 10+2 Examination (Academic stream) in Science;
- b) Pre-degree examination; any other qualification approved by the Pharmacy Council of India as equivalent to any of the above exam.

Admission of candidates to the Diploma in Pharmacy Part-I shall be made in order of merit on the basis of 'Pre-Pharmacy Test' conducted in accordance with the scheme of Examinations and syllabus laid-down by the University.

3. ELIGIBILITY FOR APPEARING IN EXAMINATION

- (a) Eligibility for appearing at the Diploma in Pharmacy Part-I Examination: Only such candidates who produce-certificate from the Head of the Academic Institution in which he/she has undergone the Diploma in Pharmacy Part-I course, in proof of his/her having regularly and satisfactorily undergone the course of study by **attending not less than 75% of the classes held both in theory and in practical separately in each subject**, shall be eligible for appearing at the Diploma in Pharmacy (Part-I) examination.
- (b) Eligibility for appearing at the Diploma in Pharmacy Part-II Examination: Only such candidates who produce certificate from the Head of the academic institution in which he/she has undergone the Diploma in Pharmacy Part-II course, in proof of his/her having regularly and satisfactorily attending **not less than 75% of the classes held both in theory and practicals separately in each subject**, shall be eligible for appearing at the Diploma in Pharmacy (Part-II) examination.
- (c) A candidate can have a relaxation of 10% attendance on medical ground by producing a certificate from medical officer of government hospital and a 5% relaxation by the vice chancellor on the recommendation of Dean, faculty.

4. GENERAL

- (A) **Course of Study:** The course of study for Diploma in Pharmacy Part-I and Diploma in Pharmacy Part-II shall include the subjects as given in the Tables I & II below. The number of hours devoted to each subject for its teaching is given against columns 2 and 3 of the Tables below.



Diploma in Pharmacy (Part-I)

Course Code	Course Title	L	P	Component (hr/year)	Exam	WT		Min Passing (%)
DP101T	Pharmaceutics-I	3	-	Theory (75)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
DP102T	Pharmaceutical Chemistry-I	3	-	Theory (75)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
DP103T	Pharmacognosy	3	-	Theory (75)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
DP104T	Biochemistry & Clinical Pathology	2	-	Theory (50)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
DP105T	Human Anatomy & Physiology	3	-	Theory (75)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
DP106T	Health Education & community pharmacy	2	-	Theory (50)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
DP101P	Pharmaceutics-I	-	4	Practical (100)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
DP102P	Pharmaceutical Chemistry-I	-	3	Practical (75)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
DP103P	Pharmacognosy	-	3	Practical (75)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
DP104P	Biochemistry & Clinical Pathology	-	3	Practical (75)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
DP105P	Human Anatomy & Physiology	-	2	Practical (50)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
	Total	16	15	775			1100	440

Note: 75% attendance in theory and practical separately is compulsory to attend the examinations



Diploma in Pharmacy (Part-II)

Course Code	Course Title	L	P	Component (Hr/Year)	Exam	WT		Min Passing (%)
DP201T	Pharmaceutics-II	3	-	Theory (75)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
DP202T	Pharmaceutical Chemistry-II	4	-	Theory (100)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
DP203T	Pharmacology & Toxicology	3	-	Theory (75)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
DP204T	Pharmaceutical Jurisprudence	2	-	Theory (50)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
DP205T	Drug store and Business Management	3	-	Theory (75)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
DP206T	Hospital & Clinical Pharmacy	3	-	Theory (75)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
DP201P	Pharmaceutics-II	-	4	Practical (100)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
DP202P	Pharmaceutical Chemistry-II	-	3	Practical (75)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
DP203P	Pharmacology & Toxicology	-	2	Practical (50)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
DP206P	Hospital & Clinical Pharmacy	-	2	Practical (50)	Sessional -1	20	20	40
					Sessional -2	20		
					Sessional-3	20		
					Annual Exam	80	80	
	Total	18	11	725			1000	400

Note: 75% attendance in theory and practical separately is compulsory to attend the examinations

- (B) **Examinations:** There shall be an examination for Diploma in Pharmacy (Part-I) to examine students of the first year course and an examination for Diploma in Pharmacy (Part-II) to examine students of the second year course. Each examination may be held twice every year. The first examination in every year shall be the annual examination and the second examination shall be supplementary examination of the Diploma in Pharmacy (Part-I) or Diploma in Pharmacy (Part-II) as the case may be. The examinations shall be of written and practical (including oral) nature. Carrying maximum marks for each part of subject, as indicated in Table III and IV:R-29(A) (Plan and scheme of examination for Diploma in Pharmacy).

5. Examination rules:

- a) **Mode of examinations:** Each theory and practical examination in the subject shall be of three hours duration. A candidate who fails in theory or practical examination shall reappear in such theory or practical paper(s) as the case may be. Practical examination shall also consist of viva voce (oral) examination.
- b) **Award of sessional marks and maintenance of records:** A regular record of both theory and practical class work and examinations conducted in an institution imparting training for Diploma in Pharmacy Part-I and Diploma in pharmacy Part-II courses, shall be maintained for each student in the institution and **20 marks for each theory and 20 marks** for each practical subject shall be allotted as sessional.

There shall be at **least three periodic sessional examinations** during each academic year. The highest **aggregate of any two performances** shall form the basis of calculating sessional marks.

The sessional marks in practicals shall be allotted on the following basis:

- i. Actual performance in the sessional examination. 10
 - ii. Day to day assessment in the practical class work. 10
- c) **Minimum marks for passing the examination:** A student shall not be declared to have passed Diploma in Pharmacy examination unless he/she secures atleast 40% marks in each of the subject separately in theory examination, including sessional marks and atleast 40% marks in each of the practical examination including sessional marks. The candidates securing 60% marks or above in aggregate in all subjects in a single attempt at the Diploma in Pharmacy (Part-I) or Diploma in Pharmacy (Part-II) examinations shall be declared to have passed in first class the Diploma in Pharmacy (Part-I) or Diploma in Pharmacy (Part-II) examinations, as the case may be. Candidates securing 75% marks or above in any subject or subjects provided he/she passes in all the subjects in single attempt, will be given distinction in that subjects(s).
- d) **Eligibility for Promotion to Diploma in Pharmacy (Part-II):** All candidates who have appeared for all the subjects and passed the Diploma in Pharmacy Part-I class. However **failure in more than two subjects** (each Theory paper or practical examination shall be considered as a subject) shall debar him/her from promotion to the Diploma in Pharmacy Part-II class. Such candidates shall be examined in the failing subjects only at subsequent. A candidate who fails to pass D Pharm Part-I exam in **four attempts** shall not allowed to continue the course.
- e) **Improvement of sessional marks:** Candidates who wish to improve sessional marks can



do so by appearing in two additional sessional examinations during the next academic year. The average score of the two examinations shall be the basis for improved sessional marks in theory. The sessional of practicals shall be improved by appearing in additional practical examinations. Marks awarded to a candidate for day to day assessment in the practical class, can not be improved unless he/she attends regular course of study again.

- f) **Certificate of passing examination for Diploma in Pharmacy (Part-II):** Certificate of having passes the examination for the Diploma in Pharmacy Part-II shall be granted by the Examining Authority to a successful student.
- g) **Certificate of Diploma in Pharmacy:** A certificate of Diploma in Pharmacy shall be granted by the Examining Authority to successful candidate on producing certificate of having passed the Diploma in Pharmacy Part-I and Part-II and satisfactory completion of practical training for Diploma in pharmacy (Part-III).
- h) The chairman and at least one expert member of examining committee of the Examining Authority Concerned with appointment of examiners and conduct of pharmacy examination should be person possessing pharmacy Qualifications.
- i) **Question paper pattern:** Each paper shall consist of **six questions out of which five shall be attempted**. Half of the total number of papers in each year will be set and assessed by **external examiners** and the remaining half will be set and assessed by the internal examiners. There shall be one external and one internal examiner for each practical Examination.

6. PRACTICAL TRAINING

Diploma in Pharmacy (Part-III)

- (a) **Period and other conditions of practical training:** After having appeared in Part-II examination of Diploma in Pharmacy conducted by Board/University or other approved examination Body or any other course accepted as being equivalent by the Pharmacy Council of India, a candidate shall be eligible to undergo practical training in one or more of the following institutions namely: Hospitals/Dispensaries run by Central/State Government/Municipal corporations/Central Government Health Scheme and Employees State Insurance Scheme. A Pharmacy, Chemist and Druggist licensed under the Drugs and Cosmetics Rules, 1945 made under the Drugs and Cosmetics Act, 1940 (23 of 1940). The institutions referred in sub-regulation (1) shall be eligible to impart training subject to the condition that the number of student pharmacists that may be taken in any Hospital, Pharmacy, Chemist and Druggist licensed under the Drugs and Cosmetics Rules, 1945 made under the Drugs and Cosmetics Act, 1940 shall not exceed two where there is one registered pharmacist engaged in the work in which the student pharmacist is under going practical training, where there is more than one registered pharmacist similarly engaged, the number shall not exceed one for each additional such registered pharmacist. Hospital and Dispensary other than those specified in sub-regulation (1) for the purpose of giving practical training shall have to be recognized by pharmacy council of India on fulfilling the conditions specified in Appendix-D to these regulations.

In the course of practical training, the trainees shall have exposure to: Working knowledge of keeping of records required by various acts concerning the profession of Pharmacy and Practical experience in the manipulation of pharmaceutical apparatus in common use, the reading, translation and copying of prescription including checking of



dose, the dispensing of prescriptions illustrating the commoner methods of administering medicaments; the storage of drugs and medical preparations. The practical training shall **be not less than five hundred hours spread over a period of not less than three months** provided that not less than two hundred and fifty hours and devoted to actual dispensing of prescriptions.

(b) Procedure to be followed prior to commencing of the training:

The head of the academic training institution, shall supply application in triplicate in Practical Training Contract Form for Qualification as Pharmacist' to candidate eligible to under-take the said practical training, the contract form shall be as specified in Appendix-E to these regulations. The head of an academic training institution shall fill section-I of the contract Form. The trainee shall fill section-II of the said Contract Form and the Head of the institution agreeing to impart the training (hereinafter referred to as the Apprentice Master) shall fill section-III of the said Contract Form. It shall be the responsibility of the trainee to ensure that one copy (hereinafter referred to as the first copy of the Contract Form) so filled is submitted to Head of the academic training institution and the other two copies (hereinafter referred to as the second copy and the third copy) shall be filled with Apprentice Master (if he so desires) or with the trainee pending completion of the training.

- (c) Certificate of Passing Diploma in Pharmacy (Part-III)** on satisfactory completion of the apprentice period, the Apprentice Master shall fill Section-IV of the second copy and third copy of contract form and cause it to be sent to the head to the academic training institution who shall suitably enter in the first copy of the entries from the second copy and third copy and shall fill section-V of the three copies of contract form and thereafter handover both the second copy and the third copy to the trainee. Thus, if completed in all respect, shall be regarded as a certificate of having successfully completed the course of Diploma in Pharmacy (Part-III).

7. Audit Course:

A student may have to register for an audit course in a D. Pharm Part-I or Part-II which could be institute requirement or department requirement.

An audit course may include either a) a regular course required to be done as per structure or required as pre-requisite of any higher level course or b) the programs like practical training, industry visits, societal activities etc

Audit course shall not carry any credits but shall be reflected in Grade Card as "PP"/"NP" depending upon the satisfactory performance in the semester evaluation as per the course curriculum structure.

8. Facilitation to Students:

8.1 Faculty Advisor:

On joining the institute, a student or a group of students shall be assigned to a faculty advisor who shall be mentor for a student throughout his/her tenure in the institute. A student shall be expected to consult the faculty advisor on any matter relating to his/her academic performance and the courses he/she may take in various semesters/summer term. A faculty advisor shall be the person to whom the parents/guardians should contact for performance related issues of their ward.



The role of the Faculty Adviser is outlined below:

- a) Guide the students about the rules and regulations governing the courses of study for a particular degree.
- b) Advise the students for registering courses as per curriculum given. For this purpose, the Faculty Adviser has to discuss with the student his/her academic performance during the previous semester and then decide the number and nature of the courses for which He / She can register during the semester as per the curriculum.
- c) Approve the registration of the students.
- d) Advise students to overload/ drop one or more courses/activities based on her/his academic performance as per the prescribed rules.
- e) At the end of the first semester/year, the Faculty Adviser may even advise a reduced load program for a poorly performing student.
- f) Pay special attention to weak students and carefully monitor performance of students recommended for slow track option.
- g) Advise students for Course Adjustment/Dropping of courses during the Semester within the stipulated time frame given in the Academic calendar.
- h) Advise students seeking semester drop either during the ongoing semester or before the commencement of the semester. FA has to ensure strict compliance of rules and regulations laid down for this purpose. Recommend the cases to the appropriate authorities for consideration.
- i) Make revised plan of study for weak/bright students based on their semester wise performance.
- j) Suggest modalities for course/credit requirements for the students recommended for exchange program.
- k) Guidance and liaison with parents of students for their performance.
- l) To ensure that students are not permitted to reregister for courses, which they have already passed.
- m) Inform students that any academic activity (course/Lab./seminar/project/noncredit requirement etc.) undergone without proper registration will not be counted towards the requirements of his/her degree.
- n) Strictly warn students that if she/he fails to register during any semester without prior approval, his/her studentship is liable to be cancelled.
- o) Keep the students updated about the Academic Administration of the University.

8.2. Helping Weaker Students:

A student with backlog/s should continuously seek help from his/her faculty advisor, Head of the Department and the Dean of respective schools. Additionally, he/she must also be in constant touch with his/her parents/local guardians for keeping them informed about academic performance. The university also shall communicate to the parents/guardians of such student at-least once during each semester regarding his/her performance in various tests and examination and also about his/her attendance. It shall be expected that the parents/guardians too keep constant touch with the concerned faculty advisor or Head of the Department, and if necessary - the Dean of the respective school.



9. Discipline and Conduct:

- Every student shall be required to observe discipline and decorous behavior both inside and outside the campus and not to indulge in any activity, which shall tend to bring down the prestige of the university.
- Any act of indiscipline of a student reported to the Dean, Student Development, shall be discussed in a Disciplinary Action Committee of the institute. The Committee shall enquire into the charges and recommend suitable punishment if the charges are substantiated.
- If a student while studying in the university is found indulging in anti-national activities contrary to the provisions of acts and laws enforced by Government, he/she shall be liable to be expelled from the institute without any notice.
- If a student is involved in any kind of ragging, the student shall be liable for strict action as per provisions in the Maharashtra anti-ragging act.
- If any statement/information supplied by the student in connection with his/her admission is found to be false/ incorrect at any time, his/ her admission shall be cancelled and he/she shall be expelled from the university and fees paid shall be forfeited.
- If a student is found guilty of malpractice in examinations, then he/she shall be punished as per the recommendations of the Grievance Redressal Committee (CRC) constituted by Board of Examinations.
- Every admitted student shall be issued photo identification (ID) card which must be retained by the student while he/she is registered at Sanjay Ghodawat University Kolhapur. The student must have valid ID card with him/her while in the University Campus.
- Any student who alters or intentionally mutilates an ID card or who uses the ID card of another student or allows his/her ID card to be used by another, student shall be subjected to disciplinary action.
- The valid ID card must be presented for identification purpose as and when demanded by authorities. Any student refusing to provide an ID card shall be subjected to disciplinary action.
- Students should switch off the Mobiles during the Instructional hours and in the academic areas of university Building, Library, Reading room etc. Strict action will be taken if students do not adhere to this.
- During the conduct of any Tests and Examination students must not bring their mobiles. A student in possession of the mobile whether in use or switched off condition will face disciplinary action and will be debarred from appearing for the Test / Examination.

10. Academic Calendar

The academic activities of the institute are regulated by Academic Calendar and is made available to the student's/ faculty members and all other concerned in electronic form or hard copy. It shall be mandatory for students / faculty to strictly adhere to the academic calendar for completion of academic activities.



TABLE-I Diploma in Pharmacy (Part-I)

Subject	Theory		Practical	
	hours/year	Hrs./week	Hours /year	Hrs./week
Pharmaceutics-I	75	3	100	4
Pharmaceutical Chemistry-I	75	3	75	3
Pharmacognosy	75	3	75	3
Biochemistry & Clinical Pathology	50	2	75	3
Human Anatomy & Physiology	75	3	50	2
Health Education & community pharmacy	50	2		
	400	16	375	15

TABLE-II Diploma in Pharmacy (Part-II)

Subject	Theory		Practical	
	Hours /year	Hrs./week	hours/year	Hrs./week
Pharmaceutics-II	75	3	100	4
Pharmaceutical Chemistry-II	100	4	75	3
Pharmacology & Toxicology	75	3	50	2
Pharmaceutical Jurisprudence	50	2	-	
Drug store and Business Management	75	3	-	
Hospital & Clinical Pharmacy	75	3	50	2
	450	18	275	11

Table-III Diploma in pharmacy (part-I) Examination

Subject	Max. Marks in Theory			Max. Marks in Practical		
	Examination	Sessional	Total	Examination	Sessional	Total
Pharmaceutics-I	80	20	100	80	20	100
Pharmaceutical Chemistry-I	80	20	100	80	20	100
Pharmacognosy	80	20	100	80	20	100
Biochem. & Clinical Pathology	80	20	100	80	20	100
Human Anatomy & Physiology	80	20	100	80	20	100
Health Education & community pharmacy	80	20	100			
			600			500

TABLE-IV Diploma in Pharmacy (Part-II)

Subject	Max. Marks in Theory			Max. Marks in Practical		
	Examination	Sessional	Total	Examination	Sessional	Total
Pharmaceutics-II	80	20	100	80	20	100
Pharmaceutical Chemistry-II	80	20	100	80	20	100
Pharmacology & Toxicology	80	20	100	80	20	100
Pharmaceutical Jurisprudence	80	20	100	-	-	-
Drug store and Business Management	80	20	100	-	-	-
Hospital & Clinical Pharmacy	80	20	100	80	20	100
			600			400

Appendix E

(of Pharmacy Council of India Education Regulations, 1991 for diploma course in Pharmacy)
Practical Training contract form for Pharmacist

SECTION I

This form has been issued _____ (Name of student pharmacist)-----
son of /daughter of residing at
.....who has
produced evidence before me that he/she is entitled to receive the Practical Training as set out in
the Education Regulations framed under section 10 of the Pharmacy Act, 1948.

Date:

The Head of the Academic
Training Institution

SECTION II

I.....(Name of the Student Pharmacist).....accept
.....(Name of the Apprentice Master) of.....(Name of the
Institution).....(Hospital or Pharmacy) as my Apprentice Master for the above training
and agree to obey and respect him /her during the entire period of my training.

(Student Pharmacist)

SECTION III

I,..... (Name of the Apprentice Master).....accept
.....(Name of the student pharmacist)..... as a trainee and I agree to give
him /her training facilities in my organisation so that during his /her training he /she may acquire

1. Working knowledge of keeping of records required by the various Acts affecting the profession of pharmacy; and
2. Practical experience in : “
 - (a) the manipulation of pharmaceutical apparatus in common use;
 - (b) the reading, translation and copying of prescriptions including the checking of doses;
 - (c) the dispensing of prescriptions illustrating the commoner methods of administering medicaments; and
 - (d) the storage of drugs and medicinal preparations.

I also agree that a Registered Pharmacist shall be assigned for his /her guidance.

(Apprentice Master)
(Name & address of the Institution)

SECTION IV

I certify that(Name of student pharmacists).....has undergone
_____hours training spread over _____months in accordance with the details
enumerated in SECTION III

(Head of the Organisation or Pharmaceutical Division)

SECTION V

I certify that(Name of student pharmacists).....has completed in
all respect his practical training under regulation 20 of the Education Regulations framed under
section 10 of the Pharmacy Act, 1948. He had his practical training in an Institution approved the
Pharmacy Council of India.

Date:

(Head of the Academic Institution)



CHAPTER - II:

SYLLABUS



Second Year D. Pharm

Course code	Name of the course	No. of Hrs/ week	No. of Hr/year	Total Marks
DP201T	Pharmaceutics-II – (T)	3	75	100
DP202T	Pharmaceutical Chemistry-II– (T)	4	100	100
DP203T	Pharmacology & Toxicology– (T)	3	75	100
DP204T	Pharmaceutical Jurisprudence– (T)	2	50	100
DP205T	Drug store and Business Management– (T)	3	75	100
DP206T	Hospital & Clinical Pharmacy– (T)	3	75	100
DP201P	Pharmaceutics-II-(P)	4	100	100
DP202P	Pharmaceutical Chemistry-II-(P)	3	75	100
DP203P	Pharmacology & Toxicology-(P)	2	50	100
DP206P	Hospital & Clinical Pharmacy-(P)	2	50	100
Total		29	725	1000

**DP201T. PHARMACEUTICS –II (Theory)****Theory (75 Hours)**

Course Code	Course Title	L	T	P	Component	Exam	WT		Min. Passing (%)
DP201T	Pharmaceutics –II (Theory)	3	-	-	Theory (100 marks)	Sessional-1	20	20	40
						Sessional -2	20		
						Sessional -3	20		
						Annual Exam		80	

Course Content:**Scope:**

This course is designed to impart a basic knowledge required for preparing, packaging and dispensing conventional and sterile dosage forms, requirements and techniques thereof.

Objectives:

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

- CO1. Explain²** the basics of prescription, different dosage forms, incompatibilities and posology.
- CO2. Discuss¹** the theoretical and practical aspects of different dosage form.
- CO3. Describe²** the appropriate use of containers and labeling for different dosage forms.
- CO4. Prepare⁵** various conventional dosage forms.
- CO5. Illustrate³** the requirements, preparation, testing, quality control of different sterile dosage forms.

UNIT	Description	Hours
1.	Prescriptions -Reading and understanding of prescriptions; Latin terms commonly used (Detailed study is not necessary), Modern methods of prescribing, adoption of metric system. Calculations involved in dispensing. Incompatibilities in prescriptions - study of various types of incompatibilities-physical, chemical and therapeutic. Posology - Dose and dosage of drugs, factors influencing dose, calculations of doses on the basis of age, sex, surface area and veterinary doses.	17
2.	Dispensed medications: (Note: A detailed study of the following dispensed medication is necessary. Methods of preparation with theoretical and practical aspects, use of appropriate containers and closures. special labeling requirements and storage conditions should be high-lighted).	
2.1	Powders -Type of powders-advantages and disadvantages of powders, granules, cachets and tablet triturates. preparation of different types of powders encountered	05

in prescriptions. Weighing methods, possible errors in weighing, minimum weighable amounts and weighing of a material below the minimum weighable amount, geometric dilution and proper usage and care of dispensing balance.	
2.2 Liquid oral dosage forms:	06
<p>Monophasic-Theoretical aspects including commonly used vehicles, essential adjuvant like stabilizers, colorants and flavors, with examples.</p> <p>Review of the following monophasic liquids with details of formulation and practical methods.</p> <p><u>Liquids for internal administration</u>:- Mixtures and concentrates, Syrups, Elixirs</p> <p><u>Liquids for external administration or used on mucous membranes</u>:- Gargles, Mouth washes, Throat-paints, Douches, Ear Drops, Nasal drops, Sprays, Liniments, Lotions.</p>	
2.3 Biphasic liquid dosage forms:	13
<p>Suspensions (elementary study)-Suspensions containing diffusible solids and liquids and their preparations. Study of the adjuvant used like thickening agents, wetting agents, their necessity and quantity to be incorporated ,suspensions of precipitate forming liquids like tinctures, their preparations and stability. suspensions produced by chemical reaction. An introduction to flocculated /non-flocculated suspension system.</p> <p>Emulsions-Types of emulsions, identification of emulsion system, formulation of emulsions, selection of emulsifying agent. Instabilities in emulsions, preservation of emulsions</p>	
2.4 Semi-solid dosage forms:	13
<p>Ointments: Types of ointments, classification and selection of dermatological vehicles. Preparation and stability of ointments by the following processes:</p> <p>j) Trituration, ii) fusion iii) chemical reaction iv) Emulsification.</p> <p>Pastes: Differences between ointments and pastes, Bases of pastes. preparation of pastes and their preservation .</p> <p>Jellies: An introduction to the different types of jellies and their preparation.</p> <p>An elementary study of poultice.</p> <p>Suppositories and pessaries-Their relative merits and demerits, types of suppositories, suppository bases , classification, properties. preparation and packing of suppositories. Use of suppositories of drug absorption.</p>	
2.5 Dental and cosmetic preparations:	08
Introduction to Dentifrices, facial cosmetics, Deodorants. Antiperspirants, shampoo, Hair dressings and Hair removers	
2.6 Sterile Dosage forms:	13
Parenteral dosage forms -Definition, General requirements for parenteral dosage forms. Types of parenteral formulations, vehicles, adjuvant, processing and	



personnel, Facilities and quality control.

Preparation of Intravenous fluids and admixtures-Total parenteral nutrition, Dialysis fluids.

Sterility testing: particulate matter monitoring- Faculty seal packaging.

Ophthalmic products: study of essential characteristics of different ophthalmic preparations. Formulation: additives, special precautions in handling and storage of ophthalmic products.

Guideline for Good Manufacturing Practice (GMP)

DP201P. PHARMACEUTICS- II (Practical)

Practical -(100 hours)

Course Code	Course Title	L	T	P	Component	Exam	WT		Min. Passing (%)
DP201P	Pharmaceutics- II (Practical)	-	-	4	Practical (100 marks)	Sessional-1	20	20	40
						Sessional -2	20		
						Sessional -3	20		
						Annual Exam		80	

No.	Description
	Dispensing of at least 100 products covering a wide range of preparations such as:
1.	Mixtures,
2.	Emulsion,
3.	Solutions,
4.	Liniments,
5.	E.N.T. preparations.
6.	Ointments, pastes
7.	Suppositories,
8.	Powders,
9.	Incompatible prescriptions etc.

Books recommended:(Latest editions)

1. Indian Pharmacopoeia.
2. British pharmacopoeia.
3. National formularies (N.F.I.,B.N.P)
4. Remington's pharmaceutical sciences.
5. Martindale's Extra pharmacopoeia.

**DP202T. PHARMACEUTICAL CHEMISTRY-II (Theory)****Theory (100 Hours)**

Course Code	Course Title	L	T	P	Component	Exam	WT		Min. Passing (%)
DP202T	Pharmaceutical Chemistry-II (Theory)	4	-	-	Theory (100 marks)	Sessional-1	20	20	40
						Sessional-2	20		
						Sessional-3	20		
						Annual exam		80	

Scope:

This subject designed to inculcate knowledge of organic compounds as medicinal and pharmaceutical agents, their nomenclature, structure, physicochemical properties, stability storage and their popular brands.

Objectives:

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

- CO1. Define and Classify¹** the drugs on the basis of their medicinal uses.
- CO2. Illustrate⁴** the nomenclature of different organic, heterocyclic compounds and drugs.
- CO3. Describe²** the monograph of drugs including physical chemical properties, uses, dose etc.
- CO4. Synthesize⁶**, recrystallize different organic compounds.
- CO5. Identify³** unknown organic compounds by qualitative analysis

Course Content:

UNIT	Description	Hours
1.	Introduction to the nomenclature of organic chemical systems with particular reference to hetero-cyclic system containing up to 3 rings	03
2.	Bsics of stereochemistry	02
3.	The chemistry of following pharmaceutical organic compounds covering their nomenclature, chemical structure, uses and the important physical and chemical properties (chemical structure of only those compounds marked with asterisk*). The stability and storage conditions and the different type of pharmaceutical formulations of these drugs and their popular brand names.	
3.1	Antiseptics and Disinfectants -Proflavine*, Benzalkonium chloride, Cetrimide, Phenol, chloroxylenol, Formaldehyde solution, Hexachlophene, Nitrofurantoin.	03
3.2	Antibiotics - Benzyl penicillin*, Phenoxy methyl penicillin*, Benzathine penicillin, Ampicillin*, Cloxacillin, Carbencicillin, Gentamicin, Neomycin, Erythromycin, Tetracycline, Cephalixin, Cephaloridine, Cephalothin, Griseofulvin, Chloramphenicol.. Sulphonamides - Sulphadiazine, Sulphaguanidine, Phthalylsulphathiazole,	08



	Succinylsulphathiazole, Sulphadimethoxine, Sulphamethoxypyridazine, Co-trimoxazole, Sulfacetamide*	
3.3	Anti-tubercular Drugs- Isoniazid*, PAS*, Streptomycin, Rifampicin, Ethambutol*, Thiacetazone, Ethionamide, cycloserine, pyrazinamide* Antileprotic Drugs- Clofazimine, Thiambutosine, Dapsone*, solapsone,	05
3.4	Antimoebic and Anthelmintic Drugs- Emetine, Metronidazole, Halogenated hydroxyquinolines, Diloxanide furoate, Paromomycin, Piperazine*, Ebendazole, D.E.C.* Antifungal agents- Udecylenic acid, Tolnaftate, Nystatin, Amphotericin, Hamycin. Antimalarial Drugs- Chloroquine*, Amodiaquine, Primaquine, Proguanil, Pyrimethamine*, Quinine, Trimethoprim	09
3.5	Tranquilizers- Chlorpromazine*, Prochlorperazine, Trifluoperazine, Thiothixene, Haloperidol*, Triperiodol, Oxypertine, Chlordizepoxide, Diazepam*, Lorazepam, Meprobamate. Antidepressant Drugs- Amitriptyline, Nortriptyline, Imperamine*, Phepelzine, Tranylcypramine. Hypnotics- Phenobarbitone*, Butobarbitone, Cylobarbitone, Nitrazepam, Glutethimide*, Methypylon, Paraldehyde, Triclofosodium. Anticonvulsants. Analeptics- Theophylline, Caffeine*, Coramine*, Dextro-amphetamine General Anaesthetics- Halothane*, Cyclopropane*, Diethyl ether*, Methohexital sodium, Thiopecal sodium, Trichloroethylene. Local Anaesthetics- Lignocaine*, Procaine*, Benzocaine,	15
3.6	Adrenergic drugs- Adrenaline*, Noradrenaline, Isoprenaline*, Phenylephrine, Salbutamol, Terbutaline, Ephedrine*, Pseudoephedrine. Adrenergic antagonist- Tolazoline, Propranolol*, Practolol. Cholinergic Drugs- Neostigmine*, Pyridostigmine, Pralidoxime, Pilocarpine, Physostigmine*. Cholinergic Antagonists- Atropine*, Hyoscine, Homatropine, Propantheline*, Benztropine, Tropicamide, Biperiden*.	15
3.7	Cardiovascular Drugs- Ethylnitrite*, Glyceryl trinitrate, Alpha methyl dopa, Guanethidine, Clofibrate, Quinidine. Cardiac glycosides, Antiarrhythmic, Antihypertensives & Vitamins. Diuretic Drugs- Furosemide*, Chlorothiazide, Hydrochlorothiazide*, Benzthiazide, Urea*, Mannitol*, Ethacrynic Acid.	12
3.8	Hypoglycemic Agents- Insulin, Chlorpropamide*, Tolbutamide, Glibenclamide, Phenformin*, Metformin. Thyroxine and Antithyroids- Thyroxine*, Methimazole, Methyl thiouracil, Propylthiouracil.	06
3.9	Coagulants and Anti coagulants- Heparin, Thrombin, Menadione*, Bisphydroxy-coumarin, Warfarin sodium.	02



3.10	Histamine and anti Histaminic Agents- Histamine, Diphenhydramine*, Promethazine, Cyproheptadine, Mepyramine*, Pheniramine, Chlorpheniramine* Analgesics and Anti-pyretics- Morphine, Pethidine, Codeine, Mathadone, Aspirin*, Paracetamol, Analgin, Dextropropoxphene, Pentazocine. Non-Steriodal Anti-Inflammatory Drugs (NSAIDs)- Indomethacin*, Phenylbutazone*, Oxyphenbutazone, Ibuprofen. Steroidal Drugs- Betamethasone, Cortisone, Hydrocortisone, Prednisolone, Progesterone, Testosterone, Oestradiol, Nandrolone.	13
3.11	Anti-Neoplastic Drugs- Actinomycin, Azathioprie, Busulphan, Chloramubucil, Cisplatin, Cyclophosphamide, Daunorubicin Hydrochoride, Fluorouracil, Mercaptopurine, Methotrexate, Mytomycin	05
3.12	Diagnostic Agents- Lopanoic Acid, Propyliodone, Sulfobromophthalein-sodium, Indigotindisulfonate, Indigo Carmine, Evans blue, Congo Red, Fluorescein sodium	02

DP202P. PHARMACEUTICAL CHEMISTRY-II (Practical)

Practical- (75 hours)

Course Code	Course Title	L	T	P	Component	Exam	WT		Min. Passing (%)
DP202P	Pharmaceutical Chemistry-II (Practical)	-	-	3	Practical (100 marks)	Sessional-1	20	20	40
						Sessional -2	20		
						Sessional -3	20		
						Annual exam		80	

No.	Description
1.	Systematic qualitative testing of organic drugs involving solubility determination, melting point and/or boiling point, detection of elements and functional groups (10 compounds).
2.	Official identification tests for certain groups of drugs included in the I.P. like Barbiturates, Sulfonamides, Phenothiazines, Antibiotics etc.(8 compounds).
3.	Preparation of three simple organic preparations. Recrystallization of prepared compound.

Books recommended (Latest editions)

- 1.Pharmacopoeia of India.
- 2.British Pharmaceutical codex.
- 3.Martindale's Extra pharmacopoeia.



DP203T. PHARMACOLOGY & TOXICOLOGY (Theory)

Theory (75 Hours)

Course Code	Course Title	L	T	P	Component	Exam	WT		Min. Passing (%)
DP203T	Pharmacology & Toxicology (Theory)	3	-	-	Theory (100 marks)	Sessional-1	20	20	40
						Sessional -2	20		
						Sessional -3	20		
						Annual exam		80	

Scope:

This subject is designed with the view of imparting knowledge to the learners about fundamentals of pharmacology, toxicology, and pharmacology of drugs acting various system of body.

Objectives:

On successful completion of following theory topics, a learner should be able to:

- CO1. Describe²** basic concepts of pharmacology
- CO2. Classify¹** different categories of drugs with its doses
- CO3. Explain⁵** the mechanism of drug action and adverse drug reaction different categories of drugs
- CO4. Illustrate⁴** the different pharmacological instruments and equipments.
- CO5. Demonstrate⁴** the effect of various drugs on tissues, organs and animals by using software's

Course Content:

UNIT	Description	Hours
1.	Introduction to pharmacology, scope of pharmacology. Routes of administration of drugs , their advantages and disadvantages. Various processes of absorption of drugs and the factors affecting them. Metabolism, distribution and excretion of drugs. Drug interaction and adverse drug reaction. General mechanism of drugs action and their factors which modify drugs action. Pharmacological classification of drugs. The discussion of drugs should emphasize the following aspects:	05
2.	Drugs acting on the central Nervous system: <u>General anaesthetics</u> - adjunction to anaesthesia, intravenous anaesthetics. Sedatives and Hypnotics, psychopharmacological agents, anticonvulsants, analeptics. Centrally acting muscle relaxants and anti parkinsonism agents. Local anesthetics.	08
3.	Drugs acting on autonomic nervous system. Cholinergic drugs, Anticholinergic drugs, anticholinesterase drugs. Adrenergic drugs and adrenergic receptor blockers. Neurone blockers and ganglion blockers. Neuromuscular blockers, used in myasthenia gravis.	08



	Drugs acting on eye: Mydriatics, drugs used in glaucoma	
4.	Drugs acting on respiratory system:- Respiratory stimulants, Bronchodilators, Nasal decongestants, Expectorants and Antitussive agents.	07
5.	Autocoids: physiological role of histamine and serotonin, Histamine and Antihistamines, prostaglandins. Analgesic antipyretics and Non-steroidal Anti-Inflammatory Drugs (NSAIDs), Narcotic analgesics. Antirheumatic and anti-gout remedies.	05
6.	Cardio vascular drugs: Cardiotonics, Antiarrhythmic agents, Anti-anginal agents, Antihypertensive agents, peripheral vasodilators and drugs used in atherosclerosis. Drugs acting on the blood and blood forming organs. Haematinics, coagulants and anticoagulants, Haemostatic, Blood substitutes and plasma expanders. Drugs affecting renal function- Diuretics and anti-diuretics	12
7.	Hormones and hormone antagonists- Hypoglycemic agents, anti--thyroid drugs, sex hormones and oral contraceptives, corticosteroids.	05
8.	Drugs acting on digestive system- carminatives, digestants, bitters, antacids and drugs used in peptic ulcer, purgatives, and laxatives, antidiarrhoeals, emetics, anti-emetics, antispasmodics	08
9.	Chemotherapy of microbial diseases: Urinary antiseptics, sulphonamides, penicillin, streptomycin, Tetracyclines and other antibiotics. Antitubercular agents, Antifungal agents, antiviral drugs, anti-leprotic drugs. Chemotherapy of protozoal diseases, Anthelmintic drugs. Chemotherapy of cancer	12
10.	Disinfectants and antiseptics	05

DP203P. PHARMACOLOGY (Practical)

Practical -(50 hours)

Course Code	Course Title	L	T	P	Component	Exam	WT	Min. Passing (%)
DP203P	Pharmacology (Practical)		-	2	Practical (100 marks)	Sessional- 1	20	40
						Sessional- 2	20	
						Sessional- 3	20	
						Annual exam	80	

No.	Description
	The first six of the following experiments will be done by the students while the remaining will be demonstrated by the teacher
1.	Effect of potassium and calcium ions, acetylcholine and adrenaline on frog's heart
2.	Effect of acetyl choline on rectus abdomens muscle of frog and guinea pig ileum
3.	Effect of spasmogens and relaxants on rabbits intestine
4.	Effect of local anaesthetics on rabbit cornea.



-
- | | |
|-----|--|
| 5. | Effect of mydriatics and miotics on rabbit's eye |
| 6. | To study the action of strychnine on frog. |
| 7. | Effect of digitalis on frog's heart |
| 8. | Effect of hypnotics in mice |
| 9. | Effect of convulsants and anticonvulsant in mice or rats. |
| 10. | Test for pyrogens. |
| 11. | Taming and hypnosis potentiating effect of chlorpromazine in mice/rats. |
| 12. | Effect of diphenhydramine in experimentally produced asthma in guinea pigs |
-

Books recommended (Latest editions)

1. Tripathi KD. '**Essentials of Medical Pharmacology**', 5th Edition, Jaypee Brothers Medical Publications (P) Ltd., New Delhi
2. Rang HP, Dale MM. **Rang and Dale's pharmacology**. Edinburgh: Elsevier/Churchill Livingstone.
3. Satoskar RS, Rege N, Bhandarkar SD. **Pharmacology and Pharmacotherapeutics**. Elsevier



DP204T. PHARMACEUTICAL JURISPRUDENCE (Theory)

Theory -(50 Hours)

Course Code	Course Title	L	T	P	Component	Exam	WT		Min. Passing (%)
DP204T	Pharmaceutical Jurisprudence (Theory)	2	-	-	Theory (100 marks)	Sessional- 1	20	20	40
						Sessional -2	20		
						Sessional -3	20		
						Annual Exam		80	

Scope:

The subject is designed to impart the knowledge of pharmacy acts, rules, allied acts, ethics, and regulations essential to be known and followed as pharmacist.

Objectives:

Upon completion of course learner shall able to

CO1. Explain² the legislations concept and evaluation of pharmacy.

CO2. Describe² the sections pharmacy act 1948, and drug and cosmetic act 1940

CO3. Apply⁴ the ethics and laws that govern the different aspects of pharmacy.

CO4. Illustrate³ the Narcotic drugs and psychotropic substances Act and poisons act.

CO5. Describe² Latest drugs (price control) order, poisons act, medicinal and toilet preparation act, medical termination of pregnancy act.

Course Content:

UNIT	Description	Hours
1.	Origin and nature of pharmaceutical legislation in India , its scope and objectives. Evolution of the "Concept of pharmacy" as an integral part of the Health care system.	03
2.	Principles and significance of professional Ethics. Critical study of the Code of Pharmaceutical Ethics drafted by Pharmacy Council of India	02
3.	Pharmacy Act, 1948- The general study of the Pharmacy Act with special reference to Education Regulations. Working of state and central councils, constitution of these councils and functions. Registration procedures under the act.	09
4.	The Drugs and Cosmetics Act, 1940- General study of the Drugs and Cosmetics Act and the Rules there under. Definitions and salient features related to retail and whole sale distribution of drugs. The powers of inspectors, the sampling procedures and the procedure and formalities in obtaining licenses under the rule. Facilities to be provided for running a pharmacy effectively. General study of the schedules with special reference to schedules C, C1, F, G, J, H, P and X and salient features of labeling and storage conditions of drugs.	16



5.	The Drugs and Magic Remedies (Objectionable Advertisement) Act, 1954- General study of the Act, objectives , special reference to be laid on Advertisements, magic remedies and objections and permitted advertisements -diseases which cannot be claimed to be cured	04
6.	Narcotic Drugs and Psychotropic Substances Act, 1985- A brief study of the act with special reference to its objectives, offences and punishment.	06
7.	Brief introduction to the study of the following acts: <ul style="list-style-type: none">• Latest Drugs (Price Control) Order in force.• Poisons Act 1919 (as amended to date)• Medicinal and Toilet Preparations (excise Duties) Act, 1955 (as amended to date).• Medical Termination of Pregnancy Act, 1971(as amended to date).• Intellectual Property Right.	10

Books recommended:(Latest editions)

1. Bare Acts of the said laws published by Government



DP205T. DRUG STORE AND BUSINESS MANAGEMENT (Theory)

Theory -(75 Hours)

Course Code	Course Title	L	T	P	Component	Exam	WT		Min. Passing (%)
DP205T	Drug Store And Business Management (Theory)	3	-	-	Theory (100 marks)	Sessional- 1	20	20	40
						Sessional -2	20		
						Sessional -3	20		
						Annual exam		80	

Scope:

The subject is focused to inculcate the knowledge of requirements and skills for managing the drug store, maintaining records and keeping the account of pharmacy store.

Objectives:

Upon completion of this course the learner should be able to:

- CO1. Describe¹** the basic concept and conventions of commerce and accountancy.
- CO2. Explain²** drug house management, tenders, inventory control and modern techniques of analyzing financial statement.
- CO3. Illustrate⁴** recruitment training, evaluation and compensation of pharmacist, banking and finance.
- CO4. Categorize⁴** different kinds of accounts, cash book, profit and loss account and balance sheet.

Course Content:

UNIT	Description	Hours
Part-I Commerce (50Hours)		
1.	Introduction -Trade, Industry and commerce, Functions and subdivision of commerce, Introduction to Elements for Economics and Management. Forms of Business Organizations. Channels of Distribution.	08
2.	Drug House Management -selection of site, space Lay-out and legal requirements. Importance and objectives of purchasing, selection of suppliers, credit information, tenders, contracts and price determination and legal requirements thereto. Codification, handling of drug stores and other hospital supplies. Inventory Control-objects and importance, modern techniques like ABC,VED analysis, the lead time, inventory carrying cost, safety stock, minimum and maximum stock levels, economic order quantity, scrap and surplus disposal. Barcode medicine identification and automated dispensing of drugs, mobile technology	20
3.	Sales promotion, market research, salesmanship, qualities of a salesman, advertising and window display.	08



4.	Recruitment, training, evaluation and compensation of the pharmacist.	06
5.	Banking and Finance-Service and functions of bank, finance planning and sources of finance.	08

Part-II Accountacy (25Hours)		
6.	Introduction to the accounting concepts and conventions. Double entry Book Keeping, Different kinds of accounts. Cash Book. General Ledger and Trial Balance. Profit and Loss Account and Balance Sheet. Simple techniques of analyzing financial statements. Introduction to Budgeting	25

Books Recommended (latest editions):

1. Mehta RM. Drug Store and Business Management. Vallabh Prakashan
2. Raje VN. Drug Store and Business Management. CBS publication
3. Gupta AK. Handbook of Drug Store and Business Management CBS Publication

DP206T. HOSPITAL AND CLINICAL PHARMACY (Theory)

Theory (75 Hours)

Course Code	Course Title	L	T	P	Component	Exam	WT		Min. Passing (%)
DP206T	Hospital And Clinical Pharmacy (Theory)	3	-	-	Theory (100 marks)	Sessional-1	20	20	40
						Sessional-2	20		
						Sessional-3	20		
						Annual exam		80	

Scope:

The subject is designed to transmit the knowledge of hospital functions, classification, drug distribution, manufacturing, drug information system, modern dispensing aspects and clinical parameters.

Objectives:

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

- CO1. Define and classify¹** hospital and clinical pharmacy and pharmaceutical services
- CO2. Differentiate⁴** drug distribution system in hospitals and sterile- non sterile manufacturing
- CO3. Explain²** the mechanism of drug action, adverse drug reaction, drug dependence and bioavailability of drug, different aids of surgical dressings.
- CO4. Describe²** application of computers in data handling/ hospital

Course Content:

UNIT	Description	Hours
Part-I Hospital Pharmacy		
1.	Hospital- Definition, function, classifications based on various criteria, organization, management and health delivery system in India.	02
2.	Hospital Pharmacy: Definition functions and objectives of hospital pharmaceutical services. Location, layout, flow chart of materials and men. Personnel and facilities requirements including equipments based on individual and basic needs. Requirements and abilities required for hospital pharmacists. Drug Distribution System in Hospitals. Out-patient service, In-patient services- types of services detailed discussion of unit Dose system, Floor ward stock system, satellite pharmacy services, central sterile services, Bed side pharmacy.	08
3.	Manufacturing: Economical considerations, estimation of demand. Sterile manufacture- Large and small volume parenterals, facilities, requirements, layout production planning, man-power requirements. Non-sterile manufacture- Liquid orals, externals, bulk concentrates. Procurement of stores and testing of raw materials.	10



	Nomenclature and uses of surgical instruments and hospital equipments and health accessories.	
4.	P.T.C. (Pharmacy Therapeutic Committee) Hospital Formulary System and their organization, functioning, composition. Drug Information Service and Drug Information Bulletin. Surgical dressing like cotton, gauze, bandages and adhesive tapes including their pharmacopoeial tests for quality. Other hospital supply eg. I.V.sets, B.G. sets, Ryals tubes, Catheters, Syringes etc	10
5.	Application of computers in maintenance of records, inventory control, medication monitoring, drug information and data storage and retrieval in hospital retail pharmacy establishment	05
Part-II Clinical Pharmacy		
6.	Introduction to clinical pharmacy practice- Definition, scope. Modern dispensing aspects- Pharmacists and patient counseling and advice for the use of common drugs, medication history. Common daily terminology used in the practice of medicine.	04
7.	Disease, manifestation and patho-physiology including salient symptoms to understand the disease like Tuberculosis, Hepatitis, Rheumatoid Arthritis, Cardio-vascular diseases, Epilepsy, Diabetes, Peptic Ulcer, Hypertension.	08
8.	Physiological parameters with their significance. Drug interactions: Definition and introduction. Mechanism of Drug Interaction. Drug-drug interaction with reference to analgesics, diuretics, cardiovascular drugs, Gastro-intestinal agents. Vitamins and Hypoglycemic agents. Drug-food interaction. Adverse Drug Reaction (ADR): Definition and significance. Drug-Induced diseases and Teratogenicity. Bio-availability of drugs , including factors affecting it.	12
9.	Drugs in clinical toxicity- Introduction, general treatment of poisoning, systemic antidotes, Treatment of insecticide poisoning, heavy metal poison, Narcotic drugs, Barbiturate, Organo-phosphorus poisons.	12
10.	Drug dependences, drug abuse, addictive drugs and their treatment, complications.	04

Books recommended (Latest editions)

1. Remington's pharmaceutical sciences.



DP206P. HOSPITAL AND CLINICAL PHARMACY (Practical)

Practical (50 Hours)

Course Code	Course Title	L	T	P	Component	Exam	WT		Min. Passing (%)
DP206T	Hospital And Clinical Pharmacy (Practical)	-	-	2	Theory (100 marks)	Sessional-1	20	20	40
						Sessional-2	20		
						Sessional-3	20		
						Annual exam		80	

Sr.	Description
1.	Know your Hospital and Clinical Pharmacy Laboratory
2.	Raw materials and their evaluation
3.	To Prepare and evaluate Water For Injection I.P.
4.	To perform test for pyrogens on Water For Injection I.P
5.	To find out the suitability of Dextrose, Sodium Chloride used for preparation of transfusion fluid.
6.	To perform Hydrolytic resistance test on glass bottles used for transfusion fluids.
7.	To evaluate the plastic transfusion bottles (thickness more than 500) used for Large Volume Parenterals
8.	Preparation of Transfusion Fluids To Prepare and submit Dextrose intravenous infusion I.P., Sodium Chloride intravenous infusion, Sodium Chloride injection I.P. (Ringers solution), Sodium Lactate Injection I.P., Sodium Chloride and Dextrose injection I.P., Sodium Chloride hypertonic injection I.P., Sodium Bicarbonate intravenous infusion B.P
9.	Evaluation of Surgical Dressing To evaluate Absorbent cotton wool by sinking time and water holding capacity, loss on drying, number of threads, Absorbent cotton ribbon gauze, sulphated ash I.P.
10.	To study the different types of sterilizers (autoclave , hot air oven, membrane filter).
11.	To sterilize surgical instrument, syringes, needles and glassware, rubber gloves and rubber tubing, hospital fabrics, surgical dressings
12.	Handling and Use of Data Processing Equipment: To study the use of computers in hospitals for registration of patient in OPD/IPD, case history and preoperative check list
13.	Clinical Pharmacy: To study the role of Pharmacist in first and treatment, in improving patient compliance, in family planning