

P. RAMI REDDY MEMORIAL COLLEGE OF PHARMACY

(AUTONOMOUS)

44/35-1, Prakruthi Nagar, Utukur, Kadapa – 516 003 A.P.

**(Approved by AICTE & PCI, New Delhi and Affiliated to JNTUA, Ananthapuramu)
Recognized u/s 2(f) & 12(b) of the UGC Act, 1956, New Delhi. Accredited by NAAC.**



PRRMCP R25 REGULATIONS

Academic Regulations & Syllabus (R25) for M.Pharmacy (Regular – Full Time)

(Effective for the students admitted into I Year from the
Academic Year 2025 – 2026 onwards)

P. Rami Reddy Memorial College of Pharmacy (Autonomous) offers **Two Years (Four Semesters)** full-time Master of Pharmacy (M.Pharm.) Post Graduate Degree programme, under Choice Based Credit System (CBCS) with different specializations.

P. Rami Reddy Memorial College of Pharmacy (Autonomous) shall confer M.Pharm. degree on candidates who are admitted to the programme and fulfill all the requirements for the award of the degree.

1. Award of the M.Pharm. Degree

A student will be declared eligible for the award of the M.Pharm. degree if he/she fulfils the following:

1.1 Pursues a course of study for not less than two academic years and not more than four academic years.

1.2 Registers for 95 credits and secures all 95 credits.

2. Students, who fail to fulfil all the academic requirements for the award of the degree within four academic years from the year of their admission, shall forfeit their seat in M.Pharm. course and their admission stands cancelled.

3. Programme of Study:

The following M.Pharm. specializations are offered at P. Rami Reddy Memorial College of Pharmacy (Autonomous):

| S. No. | Discipline | Name of the Specialization | Code |
|--------|--------------------|----------------------------|-------|
| 1 | Master of Pharmacy | Pharmacology | RRCOL |
| 2 | | Pharmaceutics | RRCEU |
| 4 | | Pharmaceutical Analysis | RRANA |
| 5 | | Pharmacognosy | RRCOG |

and any other specializations as approved by PCI/University from time to time.

4. Eligibility for Admissions:

4.1 Admission to the M.Pharm. programme shall be made subject to the eligibility, qualifications and specialization prescribed by the A.P. State Government/University for each programme, from time to time.

4.2 Admissions shall be made on the basis of either the merit rank or Percentile obtained by the qualified student in the relevant qualifying GPAT Examination / the merit rank obtained by the qualified student in an entrance test conducted by A.P. State Government (APPGECET) for M.Pharm. programmes/an entrance test conducted by university/ on the basis of any other exams approved by the University, subject to reservations as laid down by the Govt. from time to time.

5. Programme related terms:

5.1 **Credit:** A unit by which the course work is measured. It determines the number of hours of instructions required per week. One credit is equivalent to one hour of teaching (Lecture/Tutorial) or two hours of practical work/field work per week.

Credit definition:

| | |
|------------------------------|------------|
| 1 Hr. Lecture (L) per week | 1 credit |
| 1 Hr. Tutorial (T) per week | 1 credit |
| 1 Hr. Practical (P) per week | 0.5 credit |

- 5.2 Academic Year:** Two consecutive (one odd + one even) semesters constitute one academic year.
- 5.3 Choice Based Credit System (CBCS):** The CBCS provides choice for students to select from the prescribed courses.

6. Programme Pattern:

- 6.1** Total duration of the of M.Pharm. programme is two academic years
- 6.2** Each academic year of study is divided into two semesters.
- 6.3** Each Semester shall be of 22 weeks duration (inclusive of Examinations), with a minimum of 90 instructional days per semester.
- 6.4** The student shall not take more than four academic years to fulfill all the academic requirements for the award of M.Pharm. degree from the date of commencement of first year first semester, failing which the student shall forfeit the seat in M.Pharm. programme.
- 6.5** The medium of instruction of the programme (including examinations and project reports) will be in English only.
- 6.6** All subjects/courses offered for the M.Pharm. programme are broadly classified as follows:

| S. No. | Broad Course Classification | Course Category | Description |
|--------|-----------------------------|---|--|
| 1. | Core Courses | Foundational & Professional Core Courses (PC) | Includes subjects related to the parent discipline |
| 2. | Elective Courses | Electives | Includes elective subjects related to the parent discipline/inter-disciplinary subjects or subjects in an area outside the parent discipline which are of importance in the context of special skill development |
| 3. | Research | Research methodology & IPR | To understand importance and process of creation of patents through research |
| | | Seminar | Ensures preparedness of students to undertake major projects/Dissertation, based on core contents related to specialization |
| | | Cocurricular Activities/Journal Club | Attending conferences, scientific presentations and other scholarly activities |
| | | Dissertation | Major Project |
| 4. | | Mandatory noncredit courses | Covering subjects of developing desired attitude among the learners is on the line of initiatives such as Unnat Bharat Abhiyan, Yoga, Value education etc. |

- 6.7** The college shall take measures to implement Virtual Labs (<https://www.vlab.co.in>) which provide remote access to labs in various disciplines of science and will help

student in learning basic and advanced concept through remote experimentation. Student shall be made to work on virtual lab experiments during the regular labs.

- 6.8 A faculty advisor/mentor shall be assigned to each specialization to advise students on the programme, its Course Structure and Curriculum, Choice of Courses, based on his competence, progress, pre-requisites and interest.
- 6.9 Preferably 25% course work for the theory courses in every semester shall be conducted in the blended mode of learning.

7. Attendance Requirements:

- 7.1 A student shall be eligible to appear for the **Institutional** external examinations if he/she acquires i) a minimum of 50% attendance in each course and ii) 75% of attendance in aggregate of all the courses.
- 7.2 Condonation of shortage of attendance in aggregate up to 10% (65% and above and below 75%) in each semester may be granted by the College Academic Committee.
- 7.3 Condonation of shortage of attendance shall be granted only on genuine and valid reasons on representation by the candidate with supporting evidence
- 7.4 Students whose shortage of attendance is not condoned in any semester are not eligible to take their end examination of that class.
- 7.5 A stipulated fee shall be payable towards condonation of shortage of attendance.
- 7.6 A student will not be promoted to the next semester unless he satisfies the attendance requirements of the present semester. They may seek re-admission into that semester when offered next.
- 7.7 If any candidate fulfils the attendance requirement in the present semester, he shall not be eligible for readmission into the same class.
- 7.8 If the learning is carried out in blended mode (both offline & online), then the total attendance of the student shall be calculated considering the offline and online attendance of the student.

8. Evaluation – Distribution and Weightage of Marks:

The performance of a student in each semester shall be evaluated subject - wise (irrespective of credits assigned), for a maximum of 100 marks for theory and 100 marks for practical, based on Internal Evaluation and End Semester Examination.

- 8.1 There shall be five units in each of the theory subjects. For the theory subjects 60 marks will be for the End Examination and 40 marks will be for Internal Evaluation.
- 8.2 Two Internal Examinations shall be conducted for 30 marks each, one in the middle of the Semester and the other immediately after the completion of instruction. First mid examination shall be conducted for I & II units of the syllabus and second mid examination for III, IV & V units. Each mid exam shall be conducted for a total duration of 120 minutes with 3 questions (without choice) each question for 10 marks. Final Internal marks for a total of 30 marks shall be arrived at by considering the marks secured by the student in both the internal examinations with 80% weightage to the better internal exam and 20% to the other. There shall be an online examination (TWO) conducted during the respective mid examinations by the college for the remaining 10 marks with 20 objective questions.
- 8.3 The following pattern shall be followed in the End Examination:
 - Five questions shall be set from each of the five units with either/or type for 12 marks each.
 - All the questions have to be answered compulsorily.
 - Each question may consist of one, two or more bits.
- 8.4 For practical subjects, 60 marks shall be for the End Semester Examinations and 40 marks will be for internal evaluation based on the day-to-day performance.

The internal evaluation based on the day-to-day work-10 marks, record- 10 marks and the remaining 20 marks to be awarded by conducting an internal laboratory test. The end examination shall be conducted by the examiners, with a breakup mark of Procedure-10, Experimentation-25, Results-10, Viva- voce-15.

- 8.5 There shall be a **Seminar/Assignment** for internal evaluation of 100 marks. A student under the supervision of a faculty member, shall collect the literature on a topic and critically review the literature and submit it to the department in a report form and shall make an oral presentation before the Project Review Committee consisting of Head of the Department, supervisor/mentor and two other faculty members of the department. The student has to secure a minimum of 50% of marks, to be declared successful. If he fails to obtain the minimum marks, he has to reappear for the same as and when supplementary examinations are conducted. The seminar shall be conducted anytime during the semester as per the convenience of the Project Review Committee and students. There shall be no external examination for Technical Seminar.
- 8.6 For Teaching Practice/Assignments there will be an internal evaluation of 100 marks. A candidate has to secure a minimum of 50% to be declared successful. Student has to teach 10 Hours in his/her interesting subject/subjects in the entire III Semester instruction period for his juniors at PG level or Undergraduate students who are available on the campus. For each teaching hour maximum of 10 marks are allotted. The assessment will be made by the faculty allotted by the HoD.
- 8.7 There shall be Mandatory **Audit courses** for zero credits. There is no external examination for audit courses. However, attendance shall be considered while calculating aggregate attendance and student shall be declared to have passed the mandatory course only when he/she secures 50% or more in the internal examinations. In case, the student fails, a re-examination shall be conducted for failed candidates for 40 marks every six months/semester satisfying the conditions mentioned in item 1 & 2 of the regulations.
- 8.8 There shall be **Comprehensive Viva-Voce** in III semester. This will test the student's learning and understanding during the course of their specialization. The Comprehensive viva-voce will be conducted by the committee consisting of Head of the Department and two faculty members related to the specialization. The Comprehensive Viva-Voce shall be evaluated for 100 marks by the committee. There are no internal marks for the Comprehensive Viva-Voce. A student shall acquire 2 credits assigned to the Comprehensive Viva-voce when he/she secures 50% or more marks for the total of 100 marks. In case, if a student fails in Comprehensive Viva-voce he/she shall reappear as and when III semester supplementary examinations are conducted.
- 8.9 A candidate shall be deemed to have secured the minimum academic requirement in a subject if he secures a minimum of 40% of marks in the End Examination and a minimum aggregate of 50% of the total marks in the End Semester Examination and Internal Evaluation taken together.
- 8.10 In case the candidate does not secure the minimum academic requirement in any of the subjects he/she has to reappear for the Semester Examination either supplementary or regular in that subject or repeat the course when next offered or do any other specified subject as may be required.
- 8.11 The laboratory records and mid semester test papers shall be preserved for a minimum of 3 years in the institution as per the University norms and shall be produced to the Committees of the University as and when the same are asked for.

9. Credit Transfer Policy (As per the guidelines of JNTUA)

As per University Grants Commission (Credit Framework for Online Learning Courses through SWAYAM) Regulation, 2016, the University shall allow up to a maximum of 40% of the total courses being offered in a particular Programme in a semester through the Online Learning courses through SWAYAM.

- 9.1 The Institute shall offer credit mobility for MOOCs and give the equivalent credit weightage to the students for the credits earned through online learning courses through SWAYAM platform.
- 9.2 The online learning courses available on the SWAYAM platform will be considered for credit transfer. SWAYAM course credits are as specified in the platform
- 9.3 Student registration for the MOOCs shall be only through the institution, it is mandatory for the student to share necessary information with the institution
- 9.4 The institution shall select the courses to be permitted for credit transfer through SWAYAM. However, while selecting courses in the online platform institution would essentially avoid the courses offered through the curriculum in the offline mode.
- 9.5 The institution shall notify at the beginning of semester the list of the online learning courses eligible for credit transfer in the forthcoming Semester.
- 9.6 The institution shall also ensure that the student has to complete the course and produce the course completion certificate as per the academic schedule given for the regular courses in that semester
- 9.7 The institution shall designate a faculty member as a Mentor for each course to guide the students from registration till completion of the credit course.
- 9.8 The university shall ensure no overlap of SWAYAM MOOC exams with that of the university examination schedule. In case of delay in SWAYAM results, the university will re-issue the marks sheet for such students.
- 9.9 Student pursuing courses under MOOCs shall acquire the required credits only after successful completion of the course and submitting a certificate issued by the competent authority along with the percentage of marks and grades.
- 9.10 The institution shall submit the following to the examination section of the university:
 - a) List of students who have passed MOOC courses in the current semester along with the certificates of completion.
 - b) Undertaking form filled by the students for credit transfer.
- 9.11 The **Institute with the help of University** shall resolve any issues that may arise in the implementation of this policy from time to time and shall review its credit transfer policy in the light of periodic changes brought by UGC, SWAYAM, NPTEL and state govt.

Note: Students shall also be permitted to register for MOOCs offered through online platforms other than SWAYAM NPTEL. In such cases, credit transfer shall be permitted only after seeking approval of the University at least three months prior to the commencement of the semester.

10. Re-registration for Improvement of Internal Evaluation Marks:

A candidate shall be given one chance to re-register for each subject provided the internal marks secured by a candidate are less than 50% and has failed in the end examination

- 10.1 The candidate should have completed the course work and obtained examinations results for **I, II and III** semesters.
- 10.2 The candidate should have passed all the subjects for which the Internal Evaluation marks secured are more than 50%.
- 10.3 Out of the subjects the candidate has failed in the examination due to Internal Evaluation marks secured being less than 50%, the candidate shall be given one

chance for each Theory subject and for a maximum of **three** Theory subjects for Improvement of Internal evaluation marks.

- 10.4 The candidate has to re-register for the chosen subjects and fulfill the academic requirements.
- 10.5 For reregistration the candidates have to apply to the **Institutional Exam Section** by paying the requisite fees and get approval from the **Controller of Examinations** before the start of the semester in which re-registration is required
- 10.6 In the event of availing the Improvement of Internal evaluation marks, the internal evaluation marks as well as the End Examinations marks secured in the previous attempt(s) for the reregistered subjects stand cancelled.

11. Evaluation of Project/Research Work:

The Project work shall be initiated at the beginning of the III Semester and the duration of the Project is of two semesters. Evaluation of Project work is for 300 marks with 200 marks for internal evaluation and 100 marks for external evaluation. Internal evaluation of the Project Work – I & Project work – II in III & IV semesters respectively shall be for 100 marks each. External evaluation of final Project work viva voce in IV semester shall be for 100 marks.

A Project Review Committee (PRC) shall be constituted with the Head of the Department as Chairperson, Project Supervisor and one faculty member of the department offering the M.Pharm. programme.

- 11.1 A candidate is permitted to register for the Project Work in III Semester after satisfying the attendance requirement in all the subjects, both theory and laboratory (in I & II semesters).
- 11.2 A candidate is permitted to submit Project dissertation with the approval of PRC. The candidate has to pass all the theory, practical and other courses before submission of the Thesis.
- 11.3 Project work shall be carried out under the supervision of teacher in the parent department concerned.
- 11.4 A candidate shall be permitted to work on the project in an industry/research organization on the recommendation of the Head of the Department. In such cases, one of the teachers from the department concerned would be the internal guide and an expert from the industry/ research organization concerned shall act as co-supervisor/ external guide. It is mandatory for the candidate to make full disclosure of all data/results on which they wish to base their dissertation. They cannot claim confidentiality simply because it would come into conflict with the Industry's or R&D laboratory's own interests. A certificate from the external supervisor is to be included in the dissertation.
- 11.5 Continuous assessment of Project Work - I and Project Work – II in III & IV semesters respectively will be monitored by the PRC.
- 11.6 The candidate shall submit status report by giving seminars in three different phases (two in III semester and one in IV semester) during the project work period. These seminar reports must be approved by the PRC before submission of the Project Thesis.
- 11.7 After registration, a candidate must present in Project Work Review - I, in consultation with his Project Supervisor, the title, objective and plan of action of his Project work to the PRC for approval within four weeks from the commencement of III Semester. Only after obtaining the approval of the PRC can the student initiate the project work.
- 11.8 The Project Work Review - II in III semester carries internal marks of 100.

Evaluation should be done by the PRC for 50 marks and the Supervisor will evaluate the work for the other 50 marks. The Supervisor and PRC will examine the Problem Definition, Objectives, Scope of Work, Literature Survey in the same domain and progress of the Project Work.

- 11.9** A candidate has to secure a minimum of 50% of marks to be declared successful in Project Work Review - II. Only after successful completion of Project Work Review – II, candidate shall be permitted for Project Work Review – III in IV Semester. The unsuccessful students in Project Work Review - II shall reappear for it as and when supplementary examinations are conducted.
- 11.10** The Project Work Review - III in IV semester carries 100 internal marks. Evaluation should be done by the PRC for 50 marks and the Supervisor will evaluate it for the other 50 marks. The PRC will examine the overall progress of the Project Work and decide whether or not eligible for final submission. A candidate has to secure a minimum of 50% of marks to be declared successful in Project Work Review - III. If he fails to obtain the required minimum marks, he has to reappear for Project Work Review - III after a month.
- 11.11** For the approval of PRC the candidate shall submit the draft copy of dissertation to the Head of the Department and make an oral presentation before the PRC.
- 11.12** After approval from the PRC, the students are required to submit a report showing that the plagiarism is within 30%. The dissertation report will be accepted only when the plagiarism is within 30%, which shall be submitted along with the dissertation report.
- 11.13** Research paper related to the Project Work shall be published in conference proceedings/UGC recognized journal. A copy of the published research paper shall be attached to the dissertation.
- 11.14** After successful plagiarism check and publication of research paper, three copies of the dissertation certified by the supervisor and HOD shall be submitted to the College.
- 11.15** The dissertation shall be adjudicated by an external examiner selected by the Controller of Examination. For this, the HOD of the respective department shall submit a panel of three examiners as submitted by the supervisor concerned. However, the dissertation will be adjudicated by one examiner nominated by the Controller of Examination.
- 11.16** If the report of the examiner is not satisfactory, the candidate shall revise and resubmit the dissertation, in the time frame as decided by the PRC. If report of the examiner is unfavorable again, the thesis shall be summarily rejected. The candidate has to reregister for the project and complete the project within the stipulated time after taking the approval from the **Exam Section**.
- 11.17** If the report of the examiner is satisfactory, the Head of the Department shall coordinate and make arrangements for the conduct of Project Viva voce exam.
- 11.18** The Project Viva voce examinations shall be conducted by a board consisting of the Supervisor, Head of the Department and the external examiner who has adjudicated the dissertation. For Dissertation Evaluation (Viva voce) in IV Sem. there are external marks of 100 and it is evaluated by external examiner. The candidate has to secure a minimum of 50% marks in Viva voce exam.
- 11.19** If he fails to fulfill the requirements as specified, he will reappear for the Project Viva voce examination only after three months. In the reappeared examination also, if he fails to fulfill the requirements, he will not be eligible for the award of the degree.

12. Credits for Co-curricular Activities

The credits assigned for co-curricular activities shall be given by the HOD of the respective departments and the same shall be submitted to the Exam section.

A Student shall earn 02 credits under the head of co-curricular activities, viz., attending Conference, Scientific Presentations and Other Scholarly Activities.

Following are the guidelines for awarding Credits for Co-curricular Activities

| Name of the Activity | Maximum Credits / Activity |
|---|----------------------------|
| Participation in National Level Seminar/ Conference / Workshop/Training programs (related to the specialization of the student) | 1 |
| Participation in International Level Seminar / Conference /workshop/Training programs held outside India (related to the specialization of the student) | 2 |
| Academic Award/Research Award from State Level/National | 1 |

Note:

- i) Credit shall be awarded only for the first author. Certificate of attendance and participation in a Conference/Seminar is to be submitted for awarding credit.
- ii) Certificate of attendance and participation in workshops and training programs (Internal or External) is to be submitted for awarding credit. The total duration should be at least one week.
- iii) Participation in any activity shall be permitted only once for acquiring required credits under cocurricular activities.

13. Grading:

As a measure of the student's performance, a 10-point Absolute Grading System using the following Letter Grades and corresponding percentage of marks shall be followed:

After each course is evaluated for 100 marks, the marks obtained in each course will be converted to a corresponding letter grade as given below, depending on the range in which the marks obtained by the student fall.

Structure of Grading of Academic Performance

| Range in which the marks in the subject fall | Grade | Grade points Assigned |
|--|---------------|-----------------------|
| ≥ 90 | S (Superior) | 10 |
| ≥ 80 < 90 | A (Excellent) | 9 |
| ≥ 70 < 80 | B (Very Good) | 8 |
| ≥ 60 < 70 | C (Good) | 7 |
| ≥ 50 < 60 | D (Pass) | 6 |
| < 50 | F (Fail) | 0 |
| Absent | Ab (Absent) | 0 |

- i) A student obtaining Grade 'F' or Grade 'Ab' in a subject shall be considered failed and will be required to reappear for that subject when it is offered the next supplementary examination.
- ii) For noncredit audit courses, "Satisfactory" or "Unsatisfactory" shall be indicated instead of the letter grade and this will not be counted for the computation of SGPA/CGPA/Percentage.

Computation of Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

The Semester Grade Point Average (SGPA) is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student, i.e.,

$$SGPA = \frac{\sum (C_i \times G_i)}{\sum C_i}$$

where, C_i is the number of credits of the i^{th} subject and G_i is the grade point scored by the student in the i^{th} course.

- i) The Cumulative Grade Point Average (CGPA) will be computed in the same manner considering all the courses undergone by a student over all the semesters of a program, i.e.,

$$CGPA = \frac{\sum (C_i \times S_i)}{\sum C_i}$$

where " S_i " is the SGPA of the i^{th} semester and C_i is the total number of credits up to that semester.

- ii) Both SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.
- iii) While computing the SGPA the subjects in which the student is awarded Zero grade points will also be included.

Grade Point: It is a numerical weight allotted to each letter grade on a 10-point scale. Letter Grade: It is an index of the performance of students in a said course. Grades are denoted by letters S, A, B, C, D and F.

14. Award of Class:

After a student has satisfied the requirements prescribed for the completion of the program and is eligible for the award of M. Pharm. Degree, he shall be placed in one of the following three classes:

| Class Awarded | Percentage of Marks to be secured |
|------------------------------|-----------------------------------|
| First Class with Distinction | $\geq 70\%$ |
| First Class | $< 70\% \geq 60\%$ |
| Pass Class | $< 60\% \geq 50\%$ |

- 15. Exit Policy:** The student shall be permitted to exit with a PG Diploma based on his/her request to the university through the respective institution at the end of first year subject to passing all the courses in first year.

The University shall resolve any issues that may arise in the implementation of this policy from time to time and shall review the policy in the light of periodic changes brought by UGC, PCI, AICTE and State government.

16. Withholding of Results:

If the candidate has any case of in-discipline pending against him, the result of the candidate shall be withheld, and he will not be allowed/promoted into the next higher semester. The issue of degree is liable to be withheld in such cases.

17. Transitory Regulations

Discontinued, detained, or failed candidates are eligible for readmission as and when the semester is offered after fulfilment of academic regulations. Candidates who have been detained for want of attendance or not fulfilled academic requirements or who have failed after having undergone the course in earlier regulations or have discontinued and wish to continue the course are eligible for admission into the unfinished semester from the date of commencement of class work with the same or equivalent subjects as and when subjects are offered, subject to Section 2 and they will follow the academic regulations into which they are readmitted.

18. General:

- 18.1 The academic regulations should be read as a whole for purpose of any interpretation.
- 18.2 Disciplinary action for Malpractice/improper conduct in examinations is appended.
- 18.3 There shall be no places transfer within the constituent colleges and affiliated colleges of Jawaharlal Nehru Technological University Anantapur.
- 18.4 Where the words “he”, “him”, “his”, occur in the regulations, they include “she”, “her”, “hers”.
- 18.5 In the case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Vice-Chancellor is final.
- 18.6 The University may change or amend the academic regulations or syllabi at any time and the changes or amendments shall be made applicable to all the students on rolls with effect from the dates notified by the University.

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RULES FOR

DISCIPLINARY ACTION FOR MALPRACTICES / IMPROPER CONDUCT IN EXAMINATIONS

| | Nature of Malpractices/Improper conduct | Punishment |
|-------|--|--|
| | <i>If the candidate:</i> | |
| 1.(a) | Possesses or keeps accessible in examination hall, any paper, note book, programmable calculators, Cell phones, pager, palm computers or any other form of material concerned with or related to the subject of the examination (theory or practical) in which he is appearing but has not made use of (material shall include any marks on the body of the candidate which can be used as an aid in the subject of the examination) | Expulsion from the examination hall and cancellation of the performance in that subject only. |
| (b) | Gives assistance or guidance or receives it from any other candidate orally or by any other body language methods or communicates through cell phones with any candidate or persons in or outside the exam hall in respect of any matter. | Expulsion from the examination hall and cancellation of the performance in that subject only of all the candidates involved. In case of an outsider, he will be handed over to the police and a case is registered against him. |
| 2. | Has copied in the examination hall from any paper, book, programmable calculators, palm computers or any other form of material relevant to the subject of the examination (theory or practical) in which the candidate is appearing. | Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted to appear for the remaining examinations of the subjects of that semester/year. The Hall Ticket of the candidate is to be cancelled and sent to the University. |
| 3. | Impersonates any other candidate in connection with the examination. | The candidate who has impersonated shall be expelled from examination hall. The candidate is also debarred for four consecutive semesters from class work and all University examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat. The performance of the original candidate who has been impersonated, shall be cancelled in all the subjects of the examination (including practicals and project work) already appeared and shall not be allowed to appear for examinations of the remaining subjects of that semester/year. The candidate is also debarred for four consecutive semesters from class work and all University examinations, if his involvement is established. Otherwise, the candidate is debarred for two consecutive semesters from class work and all University examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat. If the imposter is an outsider, he will be handed over to the police and a case is registered against him. |

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|----|---|---|
| 4. | Smuggles in the Answer book or additional sheet or takes out or arranges to send out the question paper during the examination or answer book or additional sheet, during or after the examination. | Expulsion from the examination hall and cancellation of performance in that subject and all the other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred for two consecutive semesters from classwork and all University examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat. |
| 5. | Uses objectionable, abusive or offensive language in the answer paper or in letters to the examiners or writes to the examiner requesting him to award pass marks. | Cancellation of the performance in that subject only. |
| 6. | Refuses to obey the orders of the Chief Superintendent /Assistant - Superintendent /any officer on duty or misbehaves or creates disturbance of any kind in and around the examination hall or organizes a walk out or instigates others to walk out, or threatens the officer-in charge or any person on duty in or outside the examination hall of any injury to his person or to any of his relations whether by words, either spoken or written or by signs or by visible representation, assaults the officer-in-charge, or any person on duty in or outside the examination hall or any of his relations, or indulges in any other act of misconduct or mischief which result in damage to or destruction of property in the examination hall or any part of the College campus or engages in any other act which in the opinion of the officer on duty amounts to use of unfair means or misconduct or has the tendency to disrupt the orderly conduct of the examination. | In case of students of the college, they shall be expelled from examination halls and cancellation of their performance in that subject and all other subjects the candidate(s) has (have) already appeared and shall not be permitted to appear for the remaining examinations of the subjects of that semester/year. If the candidate physically assaults the invigilator/ officer-in-charge of the Examinations, then the candidate is also debarred and forfeits his/her seat. In case of outsiders, they will be handed over to the police and a police case is registered against them. |
| 7. | Leaves the exam hall taking away answer script or intentionally tears of the script or any part thereof inside or outside the examination hall. | Expulsion from the examination hall and cancellation of performance in that subject and all the other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all University examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat. |
| 8. | Possess any lethal weapon or firearm in the examination hall. | Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred and forfeits the seat. |

| | | |
|-----|---|--|
| 9. | If student of the college, who is not a candidate for the particular examination or any person not connected with the college indulges in any malpractice or improper conduct mentioned in clause 6 to 8. | Student of the colleges expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred and forfeits the seat. Person (s) who do not belong to the College will be handed over to police and, a police case will be registered against them. |
| 10. | Comes in a drunken condition to the examination hall. | Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. |
| 11. | Copying detected on the basis of internal evidence, such as, during valuation or during special scrutiny. | Cancellation of the performance in that subject only or in that subject and all other subjects the candidate has appeared including practical examinations and project work of that semester / year examinations, depending on the recommendation of the committee. |
| 12. | If any malpractice is detected which is not covered in the above clauses 1 to 11 shall be reported to the University for further action to award suitable punishment. | |

Malpractices identified by squad or special invigilators.

- i) Punishments to the candidates as per the above guidelines.
- ii) Punishment for institutions: (if the squad reports that the college is also involved in encouraging malpractices)
- iii) A show cause notice shall be issued to the college.
- iv) Impose a suitable fine on the college.
- v) Shifting the examination center from the college to another college for a specific period of not less than one year.

Note: Whenever the performance of a student is cancelled in any subject/subjects due to Malpractice, he/she has to register for End Examinations in that subject/subjects consequently and has to fulfil all the norms required for the award of Degree.



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SEMESTER – I

| S. No. | Course codes | Course Name | Hours per | | | Credits |
|--------------|-------------------------------------|--|-----------|---|----|---------|
| | | | L | T | P | |
| 1. | 25S01101 | Modern Pharmaceutical Analytical Techniques | 4 | - | - | 4 |
| 2. | 25S03101 | Advanced Physical Pharmaceutics | 4 | - | - | 4 |
| 3. | 25S03102 | Modern Pharmaceutics-I | 4 | - | - | 4 |
| 4. | 25S03103 | Advanced Biopharmaceutics & Pharmacokinetics | 4 | - | - | 4 |
| 5. | 25S01105 | Modern Pharmaceutical Analytical Techniques lab | - | - | 6 | 3 |
| 6. | 25S03104 | Modern Pharmaceutics -I lab | - | - | 6 | 3 |
| 7. | 25DAC101a 25DAC101b 25DAC101c | Audit Course – I English for Research paper writing Disaster Management Sanskrit for Technical Knowledge | 2 | - | - | 0 |
| 8. | 25S03105 | Seminar/Assignment | - | 1 | 6 | 4 |
| Total | | | 18 | 1 | 18 | 26 |

SEMESTER – II

| S.No. | Course codes | Course Name | Hours per | | | Credits |
|--------------|-------------------------------------|---|-----------|---|----|---------|
| | | | L | T | P | |
| 1. | 25S03201 | Modern Pharmaceutics-II | 4 | - | - | 4 |
| 2. | 25S03202 | Advanced Drug Delivery system | 4 | - | - | 4 |
| 3. | 25S03203 | Industrial Pharmacy | 4 | - | - | 4 |
| 4. | 25S03204 | Nano Drug Delivery system | 4 | - | - | 4 |
| 5. | 25S03205 | Modern Pharmaceutics-II Lab | - | - | 6 | 3 |
| 6. | 25S03206 | Advanced Drug Delivery System Lab | - | - | 6 | 3 |
| 7. | 25DAC201a 25DAC201b 25DAC201c | Audit Course – II Pedagogy Studies Stress Management for Yoga Personality Development through Life Enlightenment Skills | 2 | - | - | 0 |
| 8. | 25S03207 | Seminar/Assignment | - | 1 | 6 | 4 |
| Total | | | 18 | 1 | 18 | 26 |



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SEMESTER - III

| S.No. | Course codes | Course Name | Hours per | | | Credits |
|--------------|-------------------------------------|--|-----------|---|----|---------|
| | | | | T | P | |
| 1. | 25DRM101 | Research Methodology and Intellectual Property Right | 4 | - | - | 4 |
| 2. | 25SOE301d 25SOE301a 25SOE301c | Open Elective Biological Screening methods Pharmaceutical Validation Entrepreneurship Management | 3 | - | - | 3 |
| 3. | 25S03301 | Teaching Practice/Assignment | - | - | 4 | 2 |
| 4. | 25S03302 | Comprehensive viva voce | - | - | - | 2 |
| 5. | 25S03303 | Research Work - I | - | - | 24 | 12 |
| Total | | | 7 | - | 32 | 23 |

SEMESTER - IV

| S.No. | Course codes | Course Name | Hours per week | | | Credits |
|--------------|--------------|--------------------------|----------------|---|----|---------|
| | | | L | T | P | |
| 1. | 25S03401 | Co-Curricular Activities | 2 | | | 2 |
| 2. | 25S03402 | Research Work - II | 3 | | 30 | 18 |
| Total | | | 5 | | 30 | 20 |

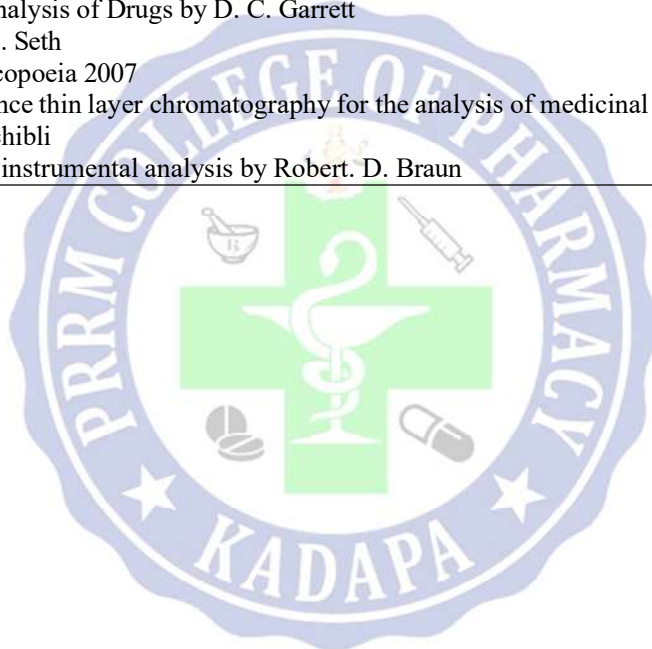


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COURSE STRUCTURE & SYLLABI**

COURSE STRUCTURE & SYLLABI

4. Principles of Instrumental Analysis - Douglas A Skoog, F. James Holler, Timothy A. Nieman, 5th edition, Eastern press, Bangalore, 1998.
5. Instrumental methods of analysis – Willards, 7th edition, CBS publishers.
6. Practical Pharmaceutical Chemistry – Beckett and Stenlake, Vol II, 4th edition, CBS Publishers, New Delhi, 1997.
7. Organic Spectroscopy - William Kemp, 3rd edition, ELBS, 1991.
8. Quantitative Analysis of Drugs in Pharmaceutical formulation - P D Sethi, 3rd Edition, CBS Publishers, New Delhi, 1997.
9. Pharmaceutical Analysis - Modern Methods – Part B - J W Munson, Vol 11, Marcel. Dekker Series
10. Spectroscopy of Organic Compounds, 2nd edn., P.S/Kalsi, Wiley esternLtd., Delhi.
11. Textbook of Pharmaceutical Analysis, KA.Connors, 3rd Edition, John Wiley & Sons, 1982.
12. Organic Chemistry by I. L. Finar
13. Quantitative Analysis of Drugs by D. C. Garrett
14. HPTLC by P.D. Seth
15. Indian Pharmacopoeia 2007
16. High Performance thin layer chromatography for the analysis of medicinal plants by Eike
17. Reich, Anne Schibli
18. Introduction to instrumental analysis by Robert. D. Braun





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COURSE STRUCTURE & SYLLABI**

| Course Code | ADVANCED PHYSICAL PHARMACEUTICS | L | T | P | C |
|--|---------------------------------|----------|---|---|---|
| 25S03101 | | | 4 | 0 | 0 |
| Semester | | I | | | |
| Course Objectives: | | | | | |
| The students shall know about particle science, polymer science and its use in pharmaceutical dosage forms. They also know the compression and consolidation parameters for powders and granules. Students also know about the rheology, disperse systems, dissolution and solubility parameters for dosage forms. | | | | | |
| Course Outcomes (CO): Student will be able to | | | | | |
| The students will know particle size analysis method, solid dispersion, physics of tablets, polymer classification and its applications, student will also know the stability calculations, shelf life calculations and accelerated stability studies. They also know the rheology, absorption related to liquids and semi-solid dosage forms. They also know the factors affecting the dissolution and solubility in related to invitro/invivo correlations. | | | | | |
| UNIT - I | | | | | |
| Polymer science: Classification, properties and characterization of polymers, phase separation, polymers in solid state, preparation of polymer solution, application of polymers in pharmaceutical formulations. Mechanism of biodegradation of biodegradable polymers including controlled drug delivery systems, Mucoadhesive, Hydrodynamically balanced and Transdermal Systems. | | | | | |
| UNIT - II | | | | | |
| Physics of tablet compression: Basic principles of interactions, compression and consolidation, compression and consolidation under high loads, effect of friction, distribution of forces in compaction, force volume relationships, Heckel plots, compaction profiles, energy involved in compaction, Measurement of compression with strain gauges, compression pressure-QA parameters. | | | | | |
| UNIT - III | | | | | |
| Kinetics and drug stability: Stability calculations, rate equations, complex order kinetics, Factors influencing stability, strategy of stability testing, method of stabilization, method of accelerated stability testing in dosage forms, temperature and humidity control, physical stability testing of pharmaceutical products. Photodecomposition, Method, solid state decomposition. | | | | | |
| UNIT - IV | | | | | |
| Theoretical consideration, instrumentation, rheological properties of disperse systems and semisolids. Oscillatory testing, Creep measurement. Characterization of API and excipients: Differential Scanning Calorimetry: Principle, thermal transitions, advantages, disadvantages, instrumentation, applications and interpretations X Ray Diffraction methods: Origin of x-rays, principle, advantages, disadvantages, instrumentation, applications and interpretations. | | | | | |
| UNIT - V | | | | | |
| Dissolution and solubility: Solubility and solubilization of nonelectrolytes, solubilization by the use of surfactants, cosolvents, complexation, drug derivatization and solid state manipulation, Mechanisms of Drug release - dissolution, diffusion (Matrix and Reservoir) and swelling controlled (Peppas Model) and dissolution equipment | | | | | |
| Textbooks: | | | | | |
| 1. Physical Pharmacy, 4th Edition by Alfred Martin. 2. Theory and Practice of Tablets – Lachman, Vol.4 3. Pharmaceutical Dosage forms – Disperse systems Vol. I & II 4. Cartenson “Drug Stability, Marcel Dekker Solid state properties, Marcel Dekker. 5. Industrial Pharmacy - Selected Topics, CVS Subramanyam and J Thimmasetty, Vallabh Prakashan | | | | | |



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| |
|---|
| Delhi – 2013 |
| Reference Books: |
| 1. Dispersive systems I, II, and III |
| 2. Robinson. Controlled Drug Delivery Systems |





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| Course Code | MODERN PHARMACEUTICS – I | L | T | P | C |
|---|--------------------------|----------|---|---|---|
| 25S03102 | | | 4 | 0 | 0 |
| Semester | | I | | | |
| Course Objectives: | | | | | |
| Students will know the preformulation studies, methodology, different excipients used in solid dosage forms and their evaluation with references to production technologies. The students also know the optimization techniques and their applications in pharmaceutical industries. | | | | | |
| Course Outcomes (CO): Student will be able to | | | | | |
| Students shall explain the preformulation parameters, apply ICH guidelines and evaluate drug, drug excipients compatibility. Students also explain about formulation and development, use of excipients in tablets, powders, capsules, micro-encapsules and coating techniques. They also learn and apply the statistical design in different formulations. | | | | | |
| UNIT - I | | | | | |
| Preformulation studies: Goals of Preformulation, preformulation parameters, Polymorphs and Amorphous forms, selection of drugs- solubility, partition coefficient, salt forms, humidity, solid state properties, Particle Size Analysis (Laser Diffraction and Dynamic Light Scattering) drug - excipient compatibility, flow properties, format and content of reports of preformulation, preformulation stability studies (ICH) | | | | | |
| UNIT - II | | | | | |
| Formulation development of solid dosage forms – I: New materials, excipients science - diluents, disintegrants, super disintegrants, etc, evaluation of functional properties of excipients, co-processed materials, methods of preparation and evaluation. | | | | | |
| UNIT - III | | | | | |
| Formulation development of solid dosage forms– II: Coating, coating machines, coating techniques in tablet technology for product development, computerization, inprocess control of tablets, formulation development and manufacture of powder dosage forms for internal use. Microencapsulation- types, methodology, problems encountered. | | | | | |
| UNIT - IV | | | | | |
| Formulation development of soft and hard gelatin capsules: Introduction, production and methods of manufacture, filling equipment and filling operations, formulations, finishing, special techniques, advances in capsule manufacture, machines, processing and control including pharmaceutical aspects, physical stability and packaging. | | | | | |
| UNIT - V | | | | | |
| Optimization techniques in pharmaceutical formulation and processing: Introduction, optimization parameters, statistical design, response surface method, contour diagrams, factorial design, partial factorial design, simplex methods, mixture designs, Placket Burhan method, Box Benken method, applications in pharmaceutical formulation. | | | | | |
| Textbooks: | | | | | |
| 1. Pharmaceutics - The Science of Dosage form design by ME Aulton. 2. Pharmaceutical Dosage forms - Tablets (Vol I, II and III) by Lieberman, Lachman and Schwartz. 3. Pharmaceutical Dosage forms - Capsules (Vol I, II and III) by Avis, Lieberman and Lachman. 4. Pharmaceutical Dosage forms – Disperse systems (Vol I, II and III) by Avis, Lieberman and Lachman. 5. Modern Pharmaceutics by Gilbert S. Banker and Christopher T. Rhodes. 6. Pharmaceutical statistics by Bolton | | | | | |
| Reference Books: | | | | | |
| 1. The Theory and Practice of industrial Pharmacy by Leon Lachman, Herbert A. Lieberman. | | | | | |



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2. Remington's Science and Practice of Pharmacy by A. Gennaro.
3. Ansel's Pharmaceutical Dosage form and Drug delivery system by Loyd V. Allen, Jr. Nicholas G. Popovich, Howard C. Ansel.
4. Generic Drug Product Development by Leon Shargel and Isadore Kanfer.
5. Dispensing for Pharmaceutical Students by SJ Carter.
6. Industrial Pharmacy - Selected Topics, CVS Subramanyam and J Thimmasetty, Vallabh Prakashan Delhi – 2013





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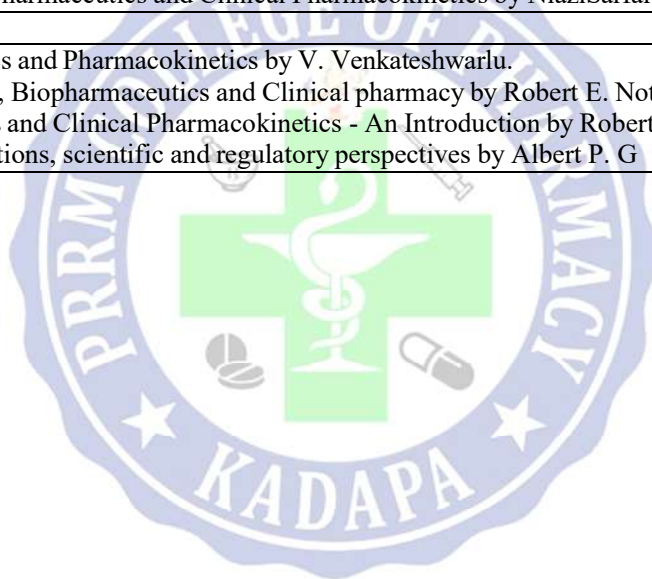
| Course Code | ADVANCED BIOPHARMACEUTICS & PHARMACOKINETICS | L | T | P | C |
|---|---|----------|---|---|---|
| 25S03103 | | 4 | 0 | 0 | 4 |
| Semester | | I | | | |
| Course Objectives: | | | | | |
| The student shall know about bioavailability, bioequivalence and factor affecting bioavailability. They also know the pharmacokinetic parameter like drug disposition, absorption, nonlinear and time dependant pharmacokinetics. They also know about the drug interactions & problems associated in pharmacokinetic parameters calculations. | | | | | |
| Course Outcomes (CO): Student will be able to | | | | | |
| Students will be able to tell factors affecting the bioavailability and stability of dosage form; they also know the bioequivalence studies and protocols for bioequivalent studies. They also know the parameters for the disposition, absorption and Michaelis-Menton constants for nonlinear kinetics. | | | | | |
| UNIT - I | | | | | |
| a. Biological and metabolic factors affecting bioavailability, complexation, dissolution - techniques of enhancing dissolution. b. Formulation factors affecting bioavailability of drugs in dosage forms of tablets, capsules, Parenterals, liquid orals and topical dosage forms. c. Bioavailability: Importance, dose dependency, AUC, rate and extent, assessment, blood and urine samples, single dose and multiple dose studies, <i>Invitro- Invivo</i> Correlation analysis and Levels of Correlations. d. Bioequivalence: Importance equivalency concepts, biowaivers, study designs, protocol, transformation of data, Statistical Criteria as per the Regulations. | | | | | |
| UNIT - II | | | | | |
| Pharmacokinetics – Drug Disposition: compartment models: One, two and non-compartmental approaches to pharmacokinetics. Recent trends, merits and limitations of these approaches. Application of these models to determine the various pharmacokinetic parameters pertaining to: a. Distribution: Apparent volume of distribution and its determination, factors affecting. b. Metabolism: Metabolic rate constant, Factors affecting Metabolism c. Elimination: Over all apparent elimination rate constant, and half life. All the above under the following conditions: 1. Intravenous infusion 2. Multiple dose injections d. Non-invasive methods of estimating pharmacokinetics parameters with emphasis on salivary and urinary samples. e. Concept of clearance: organ, total clearance, hepatic clearance, lung clearance and renal clearance. | | | | | |
| UNIT - III | | | | | |
| Pharmacokinetics – Absorption: Rate constants – Zero order, first order, Models of experimental study of absorption (in silico, in vitro, in situ and in vivo) – Absorption half lives, method of residuals, Wagner – Nelson method, Loo - Reigleman method, Analysis of kinetics from urine samples. Pharmacokinetic parameters determination pertaining to: Multiple dosage oral administration. | | | | | |
| UNIT - IV | | | | | |
| Non-linear pharmacokinetics: Concepts of linear and non-linear pharmacokinetics, Michaelis-Menton kinetics characteristics. Basic kinetic parameters, possible causes of non-induction, nonlinear binding, and non-linearity of pharmacological responses. Clinical Pharmacokinetics: Altered kinetics in pregnancy, child birth, infants and geriatrics. | | | | | |



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| | |
|---|--|
| Kinetics in GI disease, malabsorption syndrome, liver, cardiac, renal and pulmonary disease states. | |
| UNIT - V | |
| Time dependent pharmacokinetics: Introduction, classification, physiologically induced time dependency: Chronopharmacokinetics - principles, drugs– (amino glycosides, NSAIDS, antihypertensive drug) chemically induced dependency. | |
| Drug Interactions: Kinetics of drug interaction, study of drug-drug interaction mediated through absorption, distribution, metabolism and elimination, mechanisms of interaction and consequence. Numerical problems associated with all units, if any. | |
| Textbooks: | |
| <ol style="list-style-type: none">1. Biopharmaceutics and Clinical Pharmacokinetics by Milo Gibaldi.2. Learn Shargel and ABC yu, Applied Biopharmacokinetics and Pharmacokinetics3. Biopharmaceutics and Pharmacokinetics by C.V.S. Subrahmanyam, Vallabh Prakashan.2010.4. Basic biopharmaceutics, Sunil S. Jambhekar and Philip J Breaan.5. Text book of Biopharmaceutics and Clinical Pharmacokinetics by Niazi Sarfaraz | |
| Reference Books: | |
| <ol style="list-style-type: none">1. Bio-Pharmaceutics and Pharmacokinetics by V. Venkateshwarlu.2. Pharmacokinetics, Biopharmaceutics and Clinical pharmacy by Robert E. Notari.3. Biopharmaceutics and Clinical Pharmacokinetics - An Introduction by Robert E. Notari.4. Drug drug interactions, scientific and regulatory perspectives by Albert P. G | |

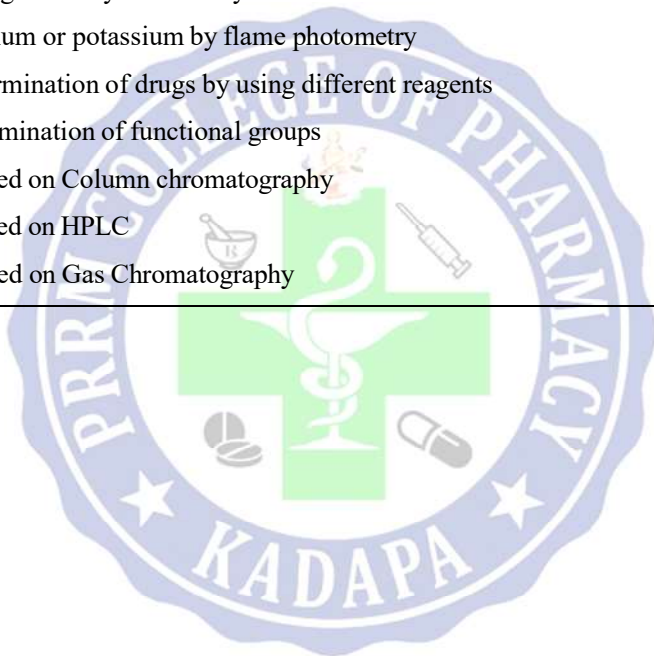




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| Course Code | MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES LAB | L | T | P | C |
|---|--|----------|---|---|---|
| 25S01105 | | 0 | 0 | 6 | 3 |
| Semester | | I | | | |
| List of Experiments | | | | | |
| 1. Analysis of Pharmacopoeial compounds and their formulations by UV Vis Spectrophotometer. | | | | | |
| 2. Simultaneous estimation of multi component containing formulations by UV Spectrophotometry | | | | | |
| 3. Effect of pH and solvent on UV –Spectrum | | | | | |
| 4. Determination of Molar absorption coefficient | | | | | |
| 5. Estimation of riboflavin/ quinine sulphate by fluorimetry | | | | | |
| 6. Study of quenching effect by fluorimetry | | | | | |
| 7. Estimation of sodium or potassium by flame photometry | | | | | |
| 8. Colorimetric determination of drugs by using different reagents | | | | | |
| 9. Quantitative determination of functional groups | | | | | |
| 10. Experiments based on Column chromatography | | | | | |
| 11. Experiments based on HPLC | | | | | |
| 12. Experiments based on Gas Chromatography | | | | | |





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| Course Code | MODERN PHARMACEUTICS – I LAB | L | T | P | C |
|--|------------------------------|----------|---|---|---|
| 25S03104 | | | 0 | 0 | 6 |
| Semester | | I | | | |
| List of Experiments | | | | | |
| 1. To carry out the preformulation studies of solid dosage forms. | | | | | |
| 2. To study the effect of compressional force on tablet disintegration time | | | | | |
| 3. To study the micromeritic properties of powders and granules | | | | | |
| 4. To study the effect of particle size on dissolution of tablets | | | | | |
| 5. To study the effect of binders on dissolution of tablets | | | | | |
| 6. To study pharmacokinetic models, to determine similarity factors | | | | | |
| 7. Accelerated stability testing of different tablets | | | | | |
| 8. Determination of first order, second order rate constants by acid and alkaline hydrolysis | | | | | |
| 9. Preparation and evaluation of beta cyclodextrin complexes of new drugs | | | | | |
| 10. Preparation of paracetamol tablets and comparison with marketed products | | | | | |

