

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI
INSTRUCTION DIVISION
First Semester 2016-2017
Course Handout

Date: 01:08:2016

Course No. : PHA F 211
Course Title : Pharmaceutical Analysis
Instructor-in-charge : Balaram Ghosh
Instructor : Balaram Ghosh

Scope and Objective:

The objective of this course is to provide students with knowledge of basic principles of quantitative analytical chemistry necessary for use and interpretation of pharmaceutical methods of analysis especially those methods official in the Indian, United States and British Pharmacopeias.

Text Book: A.H. Beckett and J.B. Stenlake. "Practical Pharmaceutical Chemistry" 4th ed., Part 1 and 2.

Ref. Book:

1. Remington's Pharmaceutical Sciences 18th ed.
2. Jenkin's quantitative Pharmaceutical Chemistry.
3. A Text book of Pharmaceutical Analysis – Kenneth A Connors.
4. A text book of quantitative inorganic analysis-Arthur. I. Vogel.
5. Parimoo P, Pharm Analysis CBS 1998

3. Course Plan :

Lec.No	Objective	Topics to be covered	Reference
1-2	Brief Introduction to the Pharmaceutical analysis	Pharmacopoeia, Sources of impurities in medicinal agents. Assays, Titration methods	TB:1 (Part 1)
3-4	Study on Acid-Base titrimetric methods	Standard volumetric solutions, direct titration of acids, bases Back titration Determination of organically combined nitrogen	TB:5 (1)
5-7	To study titrations in Non-aqueous solvents	Theory, titration of amine and amine salts, titration of halogen acid salts of bases and acidic substances	TB:6 (1)
8-12	Study on oxidation-Reduction titrations	Determination involving the use of Pot. Permanganate, iodine, iodine-Sod. thiosulphate, iodine value of fixed oil	TB: 7(1)
12-14	Study on precipitation titrations	Argentometric titration, ammonium thiocyanate titration of silver salts and mercury compounds	TB:8 (1)
15-19	Study on complexometric methods	Theory of complexometric analysis, pM indicators, Direct titration with Sod. edetate, back titration, and Displacement titration	TB: 8 (1)
19-20	Study on Gravimetric analysis	Gravimetric method determination of medicinal compounds	TB: 8 (1)
21-22	Study on electro chemical methods	Introduction, conductometric titration, potentiometry and amperometric titration	TB:5 (Part 2)
23-24	Study on Nephelometry and turbidometry	Introduction, instrumentation and application of nephelometric and turbidometry	RB:4:12 chap
25-35	Study on chromatography	Theory, Mobile phases, Stationary phases, Thin layer chromatography, paper chromatography and column chromatography	TB:4 (2)
36-39	Polarimetry	Principles and instrumentation	RB:4 - 10
40-42	Miscellaneous method of analysis	Determination of water content, methoxyl group etc.	TB:10 (1)

Practicals:

Name of the Experiment	No. of Days	Ref. to text book
Quantitative and qualitative analysis of Pharmaceuticals by volumetric, conductometric, Potentiometric titrations, gravimetric and Chloromatographic analysis.	15	# Different chapters of text book # I.P., B.P. and USP

4. Evaluation Scheme:

Component	Duration	Weightage	Date& Time	Venue	Remarks
Test-I	60 min.	15%	8/9, 11.30-12.30 PM		CB
Test-II	60 min.	15%	25/10, 11.30-12.30 PM		CB
Compre	3 h.	40%	07/12 AN		(CB 20% and OB 20%)
Quiz		10%	Surprise	class room	
(Higher scores of 5 Quiz out of 7 will be considered)					
Practical (12 Experiments)		15%	Lab hours		
Lab Compre. Exam.		5%	To be announced		

1. **Mid Semester Evaluation** will be announced after as per the dates from Instruction Division.
2. **Attendance:** Regularity in attendance will be the one of the criteria in deciding the border line cases at the time of final grading.
3. **Grading Procedure:**
 - a. It is not mandatory to award all the five grades (A to E); subjective judgement will be exercised while awarding grades.
 - b. In borderline cases subjective judgement will be exercise to decide the final grade.
 - c. The student shall not be considered exposed to the course, unless he/she demonstrates appreciable skill in both laboratory and theory component of the course.
4. **Make-up :** Make-up's will be given only for genuine reasons and for only regular students (50% attendance). It is expected that students shall avoid misuse of this feature.
7. **Chamber Consultation Hour :** To be announced in the class.
5. **Notices :** Notices pertaining to this course will be displayed only on Pharmacy Group notice board.

Instructor-in-charge
PHA F211