

CH-425 Food and Drug Analysis

Credit Hours: 3-0

Pre-requisite: NIL

Course Objectives:

1. Upon successful completion of the course, the student will be able to:
IDENTIFY different types of analytical methods of analysis of food and drugs.
UNDERSTAND the principles behind analytical techniques associated with food and drugs.
FIND required information about drugs from US and British Pharmacopeia.

Outcomes:

2. Upon successful completion of the course, the student will be able to:
IDENTIFY different types of analytical methods of analysis of food and drugs.
UNDERSTAND the principles behind analytical techniques associated with food and drugs.
FIND required information about drugs from US and British Pharmacopeia

Detailed contents:

3. *Food analysis*
Introduction to food analysis; Sampling of food; Analysis of carbohydrates; Analysis of proteins and amino acids; Analysis of lipids, determination of adulteration in fats and oils; Methods of analysis of vitamins, Principles of microbial assay of vitamins of B-series; Analysis of food additives: Preservatives, antioxidants, artificial sweeteners, flavors, flavor enhancers, stabilizers, thickening and jelling agents; Organophosphorus and organochlorine pesticides analysis, determination of pesticide residues in grain, fruits, vegetables and milk products; Analysis of milk, butter, wheat flour, meat, beverages, tea, coca, honey and soft drinks.
2. *Analysis of Pharmaceuticals* Classification of drugs; Extraction and separation of drugs from biological samples using analytical techniques; Tests for analysis of different pharmaceuticals; Introduction to US and British pharmacopeia; Liquid chromatography in pharmaceutical analysis
3. *Impurity and stability studies:* Classification of impurities in drug Substance or Active Pharmaceutical Ingredients; Quantification of impurities as per ICH guidelines; Impurities in new drug products; Qualification of degradation products; Impurities in residual solvents

Recommended Books:

1. Jill Barber, Chris Rostron, Pharmaceutical Chemistry, OUP Oxford, 2013
2. Steen Honoré Hansen, Stig Pedersen-Bjergaard, Knut Rasmussen, Introduction to Pharmaceutical Chemical Analysis, John Wiley & Sons, 2011
3. David C Lee, Michael L. Webb, Pharmaceutical Analysis, John Wiley & Sons, 2009
4. J.R.J. Paré, J.M.R. Bélanger, Instrumental Methods in Food Analysis, Elsevier, 1997
5. Y. Pomeranz, Food Analysis: Theory and Practice, Springer Science & BusinessMedia, 2013
6. S. Suzanne Nielsen, Food Analysis Laboratory Manual, Springer, 2017