

## SYLLABUS : PHARMACOGNOSY ✓

1. Importance of the following analytical methods in the qualitative, quantitative and structural elucidation of pharmaceutical compounds:
  - a) Optical Rotatory Dispersion
  - b) Spectrophotometric methods with emphasis on NMR including 2D & C<sup>13</sup>
  - c) Mass and HPLC.
  
2. A) General methods of isolation, purification, identification and estimation of different classes of phyto-constituents. WHO guidelines for assessment and quality control of crude drugs, extracts and formulations.  
B) Herbal based industries: i. types, forms, scope and applications ii. infrastructure requirements, research needs and areas, quality assurance in herbal drug industry. iii. Study of herbal formulations and cosmetics.  
C) Marine pharmacognosy
  
3. A) General aspects involved in the cultivation of medicinal plants. Chemotaxonomy.  
B) Phytochemical study of various class of phyto-constituents including important drugs: Alkaloids, glycosides, steroids and phospholipids. Structural elucidation of Nicotine, Atropine, Morphine, strophanthidine, cholesterol and citral.  
C) Complementary and alternative system of medicines.
  
4. A) Plant tissue culture: Types, techniques and applications, production of secondary metabolites, Germ plasm conservation, Biotransformation and transgenic plants and their applications.  
B) Enzymes: Types, methods of isolation and purification, Immobilization of enzymes and their applications. Plant derived enzymes  
C) Methods of improving quality of crops and their applications using plant breeding, chemodemes, hybridization, mutation and polyploidy.  
D) i. Gene transfer in plants: Vector mediated and direct gene transfer techniques. ii. Gene mapping and molecular maps of plant genomes including chromosome analysis, PCR, molecular maps and physical maps using in-situ hybridisation.