ORGANIC CHEMICAL TECHNOLOGY (11SHPH10)

(Course work for Ph.D Program)

UNIT I - BASIC PRINCIPLES OF CHEMICAL TECHNOLOGY

Classification of chemical technological processes - chemical equilibrium in technological processes – rates of technological processes – designing and modeling chemical technological processes and reactors.

UNIT II - INDUSTRIAL ORGANIC SYNTHESIS

Raw materials – manufacture of methyl alcohol, ethyl alcohol, ethylene, 1,3-butadiene, acetylene – ethyl benzene, cumene, linear alkyl benzenes alkyl phenols.

UNIT III - SYNTHETIC ORGANIC CHEMICALS

Chemicals derived from ethylene – polyethylene, ethylene oxide, ethylene dichloride chlorinated hydrocarbons – chemicals derived from propylene – isopropyl alcohol, polypropylene, acrylonitrile, propylene oxide – oxidation of butane – esters – maleic anhydride – acetone – ethyl methyl ketone – bisphenol – DDT – aniline.

UNIT IV – PHARAMACEUTICALS AND PESTICIDES

Introduction – manufacture – aspirin, Phenobarbital, penicillin – malathion, parathion, naled.

UNIT V - DYES

Classification – raw materials – intermediates – manufacture – azodyes – triphenylmethane dyes – xanthenes dyes. Indigoid and thioindigoid dyes, sulphur dyes, phthalocyanines – optical brighteners.

REFERENCES

1. P.H. Groggins, Unit Processes in Organic Synthesis, McGraw Hill Book Co., Kogakusha (1984)

2. Peter Wiseman, An Introduction to Industrial Organic Chemistry, 2nd Edition, Applied science publishers Ltd., London (1979)

3. J.A. Kent, Riegel's Hand book of Industrial Chemistry, 7th Edition, Van Nostrand Reinhold Co., New York (1974)