FCYF 908	Synthesis of Fine Chemicals	3-1-0	4 Credits

Module I **[10 Lectures]**

Industrial Gases and Inorganic Chemicals

Industrial Gases: Large scale production, uses, storage and hazards in handling of the following gases: oxygen, nitrogen, argon, neon, helium, hydrogen, acetylene, carbon monoxide, chlorine, fluorine, sulphur dioxide and phosgene.

Inorganic Chemicals: Manufacture, application, analysis and hazards in handling the following chemicals: hydrochloric acid, nitric acid, sulphuric acid, caustic soda, common salt, borax, bleaching powder, sodium thiosulphate, hydrogen peroxide, potash alum, chrome alum, potassium dichromate and potassium permanganate.

Module II **[10 Lectures]**

Synthesis of industrial fine chemicals and solvent; Acetone, chloroform, Acetic acid, Tetrahydrofuran (THF), Ethylacetoacetate, fractionation of petroleum products (Lemax etc.)

Module III **[10 Lectures]**

Synthesis of useful reagents; organometallic reagents (Organo -Li bases, nBuLi, etc LDA);Grignard reagents, chiral/achiral boron reagents.

Module IV

Synthesis of value added drugs and APIS **[10Lectures]**

Cardiovascular drugs, such as Alapril (lisinopril), Captoril (captopril), .antiulcerants (cimetidine. Artificial sweetener Aspartame (N-L-α-Aspartyl-L-phenylalanine 1-methyl ester) riboflavin (B2), and thiamine (B1)

References

1. Eco-friendly Synthesis of Fine Chemicals, Edited by Roberto Ballini from RSC Green Chemistry Series, edited by James H. Clark and George A. Kraus, Royal Society of Chemistry, 2009
2. Aqueous Microwave Assisted Chemistry: Synthesis and catalysis, ed. V. Polshettiwar and R. S. Verma, from RSC Green Chemistry Series, Royal Society of Chemistry, 2010
3. G. L. David Krupadanam, Fundamentals of Assymetric Synthesis, Universities Press, 2013