Programme: M. Sc. (Chemistry, Part-II)
Course Code: OCO-505
Title of the Course: Heterocyclic Chemistry
Number of Credits: 3 **Effective from AY:** 2019-20

Prerequisites for the course:	Should have studied the synthetic organic chemistry at M. Sc. part-I (Chemistry) levels, part II organic level CHOC-501, 502, 503 and 504 courses and must be simultaneously studying CHOO-503 and 504, courses.	
Course Objective:	1. Understand the fundamentals of heterocyclic chemistry 2. Knowledge of synthesis of heterocycles.	
Course Outcome	1. Understand the reactivity of heterocyles towards electrophilic, nucleophilic, reducing and oxidizing reagents. 2. Knowledge of synthesis of heterocycles.	
Content:	1. **Introduction, classification and Nomenclature of mono- and bicyclic heteroaromatic molecules** **2. Physical properties, dipole moment, acidity-basicity, Aromaticity electron density distribution and reactivity of-** 2.1 Furan, Thiophene,Pyrrole, Indole 2.2 Pyridine, Pyridine-N-oxide 2.3 Quinoline and isoquinoline 2.4. Diazines and triazines 2.5. 1,3- and 1,2- azoles 3. **Synthetic strategies based on reterosynthetic approach: General methods of synthesis of the following-** 3.1 Furan, Thiophene, Pyrrole, Indole 3.2 Pyridine, Quinoline and isoquinoline 3.3 Chromones	04 hours 20 hours 12 hours
Pedagogy:		
References/Readings	1. J. A. Joule & G. F. Smith, *Heterocyclic Chemistry*, ELBS, 2. J. A. Joule & K. Mills, Heterocyclic *Chemistry*, Wiley-Blackwell, 2010. 5th Ed. 3. T. L. Gilchrist, *Heterocyclic Chemistry*, Pitman Publishing, 1985. 4. R. M. Acheson, *An Introduction to Chemistry of Hetreocyclic Compounds*, John Wiley and Sons, 1977, 3rd Ed. 5. D. W. Young, *Heterocyclic Chemistry*, Longman Group Ltd., London, 1975. 6. A. R. Katritzky & J. M. Lagowskii, *Principles of Heterocyclic Chemistry*, Mathesons and Co., 1967.	

	7. A. Weissberger & E. Taylor, *Chemistry of Heterocyclic Compounds*, Vol. 1 to 47, 1987. 8. A. R. Katritzky etal., *Advances in Heterocyclic Chemistry*, Vol. 1 to 50, Academic Press	