Course Type	Course Code	Name of Course		Т	Р	Credit
DE	NCYD509	Modern Terpyridine Chemistry		0	0	3

Course Objective

- This course will impart
- Fundamental understanding of the synthesis and applications of Terpyridine and corresponding metal complexes

Learning Outcomes

- After studying this course, students should be able to:
- Understand the basic techniques used in synthesis of Terpyridine and its derivatives along with corresponding metal complexes.
- Study the models of supramolecular and photophysical properties of Terpyridine complexes.
- Study the homogeneous and surface anchored catalysis by Terpyridine complexes.

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	Basic synthetic strategies, Ring assembly, Cross coupling methods, synthesis of 2,2':6',2"-Terpyridine derivatives, Unsymmetrically terminally substituted 2,2':6',2"-Terpyridines, Multi-functional 2,2':6',2"-Terpyridine with variable substituents.	14L	In this unit the students will learn the basic techniques used in synthesis of Terpyridine.
2	Synthetic strategies for mono- and bis- chelate Terpyridine based transition metal complexes, Ruthenium Terpyridine complexes, luminescent and chiral properties of the complexes. Dyads, Triads, Helicates Rotaxanes and Catenanes in supramolecular Terpyridine architectures. Fullerene Terpyridine complexes.	14L	In this unit the students will understand the basic techniques used in synthesis of Terpyridine based-complexes and its structural information.
3	Homogeneous and Surface anchored catalysis by Terpyridine complexes: Oxidation and Reduction reactions by chemical, photochemical and electrochemical methods.	14L	In this unit the students will learn regarding the catalytic applications of the terpyridine- based complexes.
Total		42	

Text Books:

Ruthenium Complexes: Photochemical and Biomedical Applications, Edited by A. A. Holder, L. Lilge, W. R. Browne, M. A.W. Lawrence, J. L. Bullock Jr., WILEY -VCH Verlag GmbH & Co. KGaA, Weinheim, 2018, ISBN: 978-3-527-33957-0.

Reference Books:

1. Modern Terpyridine Chemistry, G. R. Newkome, H. Hofmeier, and U. S. Schubert WILEY -VCH Verlag GmbH & Co. KGaA, Weinheim, 2003, ISBN-3-527-30630-7.

2. Terpyridine-based Materials: For Catalytic, Optoelectronic and Life Science Applications, A. Winter, G. R. Newkome, and U. S. Schubert WILEY -VCH Verlag GmbH & Co. KGaA, Weinheim, 2012, ISBN-978-3-527-63963-2.