Academic Council Meeting No. and Date : 10 / April 26, 2025

Agenda Number : 4 Resolution Number : 48 / 4.1

Vidya Prasarak Mandal's
B. N. Bandodkar College of Science (Autonomous), Thane

Certificate Course On

"Scientific Documentation Using Chem Draw Software In Chemistry"

[With effect from Academic Year 2025-2026]

BOS Chairwomen: Prof.(Dr.) Anita S. Goswami_Giri

Syllabus: BCCCD045

Module	COURSE CONTENTS	NO. OF LECTURES
Module 1	**Introduction to ChemDraw** Overview of ChemDraw software: History and versions. Installation, interface, and basic tools, Importance and applications in academia and industry.	03
Module 2	**Drawing Chemical Structures** Drawing organic molecules, inorganic complexes, and polymers, Customizing bonds, atoms, and labels. Managing stereochemistry and 3D structures.	04
Module 3	**Reaction Mechanisms and Pathways** Drawing reaction schemes and mechanisms. Representing electron flow with curved arrows. Annotating reaction pathways. Drawing chemical structure using chemdraw, Determination of chemical properties, melting point and boiling point, Convert name into structure and vice versa	04
Module 4	**Advanced Features and Customization** Using templates and structure libraries. Predicting molecular properties and spectral data. Creating and customizing structure properties. Drawing structure of bigger molecules such as proteins, carbohydrates, and RNA/DNA, bio arts,	04
Module 5	**Practical Applications** Generating publication-quality images. Exporting and integrating ChemDraw diagrams into research articles and presentations. Collaboration tools and file formats.	03
Module 6	**Practical Sessions** Hands-on practice: Drawing molecules, reactions, and mechanisms. Group project: Creating a complex reaction scheme or a multi-step synthesis.	12
	Total Period	**30**
	Credit	**02**

Reference:

1. Andrew R. Leach & Valerie, J. Gillet. (2007) *An introduction to Chemoinformatics.* Springer: The Netherlands.
2. Gasteiger, J. & Engel, T. (2003) *Chemoinformatics: A text-book.* Wiley-VCH.
3. Layne A. Morsch & Michael Lewis (2015) *J. Chem. Educ.*, 92, 8, 1402-1405.

Scientific Documentation Using Chem Draw Software In Chemistry

Marks Distribution and Passing Criterion for allotment of certificate credits

Semester V or VI

Theory				
Course Code	Assignment	Min marks for passing	Hybrid mode on;ine /offline Examination	Min marks for passing
	10	**04**	**40**	16