Semester	AUG 2022
Open to semester	5,7,11,13,21
Course code	**BI3323/BI6333**
Course title	**Structural Biology**
Credits	3 /3
Course Coordinator & participating faculty (if any)	Saikrishnan Kayarat*, Gayathri Pananghat
Nature of Course	Lectures
Pre-requisites	Nil
Objectives (goals, type of students for whom useful, outcome etc)	The course provides an introduction to the structure of biomolecules with emphasis on the techniques used for structure determination and analysis. The course covers basic aspects of sample preparation, structure determination and structure analysis. The aim of the course is to introduce students to the process involved in structure determination and analysis, and how structural information can be utilized for better understanding of biological processes.
Course contents (details of topics /sections with no. of lectures for each)	1) Introduction to structures of biomolecules: proteins and nucleic acids? (10 lectures) 2) Recombinant technology and purification techniques to isolate biomolecules (4 lectures) 3) Determination of atomic structure using X-ray crystallography (5 lectures) 4) Studying macromolecular assembly using electron microscopy (5 lectures) 5) Biophysical and spectroscopic techniques to understand structures (2 lectures)? 6) Graphics tools to visualize and analyze atomic structure of biomolecules (2 lectures)
Evaluation /assessment	End-Sem Examination-40% Mid-Sem Examination-40% Others-20%
Suggested readings (with full list of authors, publisher, year, edn etc.)	1) Introduction to Protein Structure by Carl Branden, John Tooze, Garland Science; 2 edition (January 3, 1999) 2) Biomolecular Crystallography: Principles, Practice, and Application to Structural Biology by Bernhard Rupp, Garland Science; 1 edition (October 20, 2009)

	3) Understanding DNA by Chris Calladine, Horace Drew, Ben Luisi, Andrew Travers, Elsevier Academic Press (2004) 4) Textbook of Structural Biology by Anders Liljas, Lars Liljas, Jure Piskur, Goran Lindblom, Poul Nissen & Morten Kjeldgaard, ?Pub. Date: March 2009, Publisher: World Scientific Publishing