Title of Course: Biophysical Chemistry
Score: ٢ Credits

The aim of this course:
The aim of this course understands of protein ligand binding from theory to experimental actions. This course expresses the biomacromolecular interactions and discusses extensively different binding isotherms for protein binding sites analysis. In this course discuss vastly concerning different methods of protein denaturation.

Subtitles:

Characterization of biomacromolecules
Understanding the inter and intra-molecular forces for biomacromolecules
Protein structure function relationship
The importance of Protein denaturation
Description on all forms of protein denaturation
Protein ligands binding
Theoretical insights into protein–ligand binding
Identification of Protein–Ligand Binding Sites
Protein–Ligand Binding linkages
Protein usual and unusual binding isotherms and various analysis by Scatchard and Hill plots
The philosophy and mechanism for Protein cooperative and non-cooperative binding sites
Hemoglobin and myoglobin oxygen binding affinity and analysis by binding isotherms and Hill plots
The applications of binding isotherms for diagnostic tests

References:
-C.R. Cantor and P.R. Schimmel “Biophysical Chemistry” W. H. Freeman,١٩٨٠
-R. Chang, "Physical chemistry with application to Biological system", MacMillan publishing Co., New York, ١٩٨١.
- D. Freifelder, “Physical Biochemistry, Applications to Biochemistry and Molecular Biology, Publisher: W. H. Freeman, ٢nd edition, ١٩٨٣
- J. Wyman and S.J. Gill, "Binding and linkage", University Science Book, California, ١٩٩٠.
- A.A. Moosavi–Movahedi “Physical Chemistry of Biological Macromolecules” University of Tehran Press, ١٩٩٥
- A.A. Moosavi–Movahedi and et al. “Protein Structure”, University of Tehran Press, In Persian, ٢٠٠٤
-G.U. Nienhaus, "Protein-Ligand Interaction" Humana Press, New Jersey, ٢٠٠٥.
- B. Goliaei and A.A. Moosavi–Movahedi, J. Chamani “Biophysical Chemistry” University of Tehran Press, Fourth Edition, ٢٠١٥