Title of Course: Biothermodynamics
Score: ٢ Credits

Aim of this Course:
Thermodynamics of protein folding refers to the stability measurements where structural changes of a given protein in the presence of a denaturing agents are monitored by calorimetric and spectroscopic techniques. The aim of this study was to determine protein stability, protein thermal denaturation via various methods such Differential Scanning Calorimetry, Isothermal Titration Calorimetry, thermal spectroscopy

Subtitles:
Cold and thermal protein denaturation
Theoretical and experimental thermodynamic study on Cold and thermal protein denaturation
The analysis of protein thermal profiles
Comparative states of intermediates for protein thermal denaturation
Comparative study on thermodynamic and non-thermodynamic parameters for protein structure
Protein Calorimetry: Isothermal Titration Calorimetry and Differential Scanning Calorimetry study for protein –ligand interaction, protein structure deconvolution, measurement of energetic domains for protein, study the reversibility and irreversibility states for protein denaturation
Protein stability measurements by different methods

References:

-J.T. Edsall and H. Gutfrund, "Biothermodynamics", John Wiley, New York, ١٩٨٣.
-M.N. Jones, "Biochemical Thermodynamics", Elsevier, ١٩٨٤.
- Biocalorimetry [Eds: J.E. Ladbury and M.L. Doyle], John Wiley, New York, ٢٠٠٤.
- A. A. Moosavi-Movahedi and J. Chamani, "Thermodynamic indications of molten globule state of cytochrome c induced by hydrophobic salts" in Biocalorimetry II (Eds. J. E. Ladbury and M. Doyle), John Wiley and Sons, Ltd., New York, Chapter ١٢, pp ٢١٥-٢٣٠ (٢٠٠٤)
- J. Chamani and A.A.Moosavi-Movahedi “Biothermodynamics “University of Tehran Press, ٢٠٠٩
- M. Bastos “Biocalorimetry: Foundations and Contemporary Approaches” CRC Press,٢٠١٩
- J.S. Jimenz “Biochemical Thermodynamics” Cambridge Scholar Publishing ,٢٠٢٠
-The Handbook of Differential Scanning Calorimetry [Eds: J. Menczel, J. Grebowicz], Elsevier,٢٠٢٢