

PRINCIPLES OF BIOPHYSICAL TECHNIQUES (2 credits)

Second First semester (2025)

Time: WE 09.00 - 11.00 THU 13.00--15.00		Co-ordinator: Kuakarun (kuakarun.k@chula.ac.th)	
Room: 521 SCI10			
Topic	Hrs.	Date	Instructor
Spectroscopy			
· Photospectroscopy	1	6 Aug 2025	Tanakarn
· Fluorescence spectroscopy	2	13, 20 Aug 2025	Tanakarn
Radioisotopes : autoradiography and radioimmunoassay	2		Tanakarn
Mass spectrometry and Molecular weight determination			
· mass spectrometry	3	27 Aug, 3 Sep 2025	Veerasak
· electrophoresis, osmosis pressure	2	3, 10 Sep 2025	Veerasak
· equilibrium ultracentrifugation	3	10, 17 Sep 2025	Veerasak
Mid-term examination: 22 - 26 Sep 2025; 23 Sep 2025 08:30 - 11:30 น.			
Three-dimensional structure determination of macromolecules			
· NMR	2	1 Oct 2025	Kuakarun
· X-ray diffraction	3	8, 15 Oct 2025	Kuakarun
· cryo-EM	2	15, 22 Oct 2025	Kuakarun
Biocalorimetry			
· Isothermal titration calorimetry	2	29 Oct 2025	Kuakarun
· differential scanning calorimetry	2	5 Nov 2025	Kuakarun
Presentation/Discussion on 3D strcuture determination techniques and Biocalorimetry applications	4	12, 19 Nov 2025	Kuakarun
Final-term examination: 24 Nov - 8 Dec 2025; 25 Nov 2025 08:30 - 11:30 น.			

Quiz, Presentation, Assignment 10%

Exam 90%