PHYSICS OF SURFACES AND INTERFACES

3-1-0

Detailed syllabus and Lecture-wise Break-up

Sr.	Topic	Hours
1.	Surface structures, relaxations and reconstructions	3
2.	Two-dimensional reciprocal lattice and crystal truncation rods	5
3.	Adsorption, desorption and diffusion	2
4.	Physics of ultra-high vacuum (UHV)	3
5.	Reciprocal space mapping - Grazing angle Xray diffraction (GAXRD)	4
6.	Electron diffraction	3
7.	X-ray reflectivity (XRR), X-ray standing wave (XSW) analysis	4
8.	Ion scattering techniques - Particle induced X-ray emission (PIXE) and Secondary ion mass spectroscopy (SIMS), Rutherford backscattering spectroscopy (RBS); Elastic recoil detection analysis (ERDA)	8
9.	Surface magnetism; X-ray magnetic circular dichroism (XMCD)	4
10.	X-ray photoelectron spectroscopy (XPS)	3
11.	Scanning probe microscopy (SPM)	3
12.	Tutorials	14
Total		56