LS101A	Physics for Biologists	2 Credits

Name of the Faculty: Prof. Ajay Kumar Saxena*, Prof. S. Gourinath & Dr. Karunakar Kar

S. No.	Topic		Faculty Name/ Contact Hours
1.	**Quantum Physics**	Wave versus Particle ; Heisenberg and Uncertainty	AKS/1
		Radioactivity; Photoelectric effect	AKS/1
		Atom and Nuclei; Particles	AKS/1
2.	**Mechanics**	Scalars and vectors, Newton laws of motion, Force, Work, Energy	KK/2
		Gravitation, Simple Harmonic Motion, Circular motion, Torque	KK/2
		Elasticity, Surface tension; Hydrostatic	KK/2
3.	**Crystal theory**	Structure of solids, amorphous solids	AKS/1
		Structure of single crystals	AKS/1
		Basic introduction to x-ray crystallography Crystal theory	AKS/2
4.	**Thermal Physics**	Laws of Thermodynamics and its application in Biological system	AKS/1
		Temperature and related topics	AKS/1
		Internal energy, Heat and First law of Thermodynamics	AKS/1
		The ideal monatomic gas	AKS/1
		Application of first law to Ideal Gases	AKS/1
		Entropy and the Second law	AKS/2
5.	**Optics, waves and sound**	Black body radiation; Optics, Geometrical optics	SGN/1
		Sound; Interferences, Diffraction,	SGN/1
6.	**Fundamental Electro-magnetism**	Charge and Current	SGN/1
		Coulomb's law, Electric field, Electrostatic potential	SGN/1
		Magnetic effects on study currents	SGN/1
		Forces on current in a Magnetic field	SGN/2
		Forces on charges in Electric and Magnetic field	SGN/1

Further Reading:

1. Fundamentals of Physics: by Halliday, Resnick, Walker
2. Fundamental of Physics: by Alan Giambattista, Betty Richardson
3. Nanomaterials, Nanotechnologies and Design: Michael F. Ashby, Paulo J. Ferreira and Daniel L Schodek. Elsevier Ltd 2009, Butterworth-Heinemann