

Lesson Planning for the semester started w.e.f 5th Jan. 2018.

Name of Institute :- Sat Kabir Institute of Technology and Management,Ladrawan (Jhajjar)

Name of teacher with designation :-Ms. Rajab , A.P

Department :- Applied Science

Month	Class	Topic/Chapter Covered	Academic Activity	Test/Assignment
Jan.	2 nd	Crystal Structure Space lattice, unit cell and translation vector, Miller indices, simple crystal structure. Laue's treatment to Bragg's law, powder method, Point defects in solids – Schottky and Frenkel defects. Bonding in solids- Ionic and covalent bonds (2 week)	Presentation	Assignment(3 rd week)
		Quantum Physics Difficulties with Classical physics, Introduction to quantum mechanics-simple concepts. Black Body radiations Discovery of Planck's constant Schrodinger wave equations-time dependent and time independent, Expectation value, Ehrenfest Theorem, particle in a one-dimensional box. Elementary ideas of quark, gluons and hadrons. (2 week)	Seminar	Test(4 th week)
Feb.	2 nd	Nano-Science Features of nanosystems, concept of quantum size effect, quantum dots and their applications. (2 week)	GD	Assignment(3 rd week)
		Free Electron Theory Elements of classical free electron theory and its limitations. Drude's theory of conduction , quantum theory of free electrons. Fermi level, density of states. Fermi-Dirac distribution function. Thermionic emission, Richardson's equation. (2 week)	Presentation	Test(4 th week)
March	2 nd	Band Theory Of Solids Origin of energy bands, Kronig-Penny model (qualitative), E-K diagrams, Brillouin Zones, concept of effective mass and holes. Classification of solids into metals, semiconductors and insulators. Fermi energy and its variation with temperature. Hall Effect and its applications. (2 week)	Seminar	Assignment(3 rd week)
		Photoconductivity & Photovoltaics Photoconductivity in insulating crystal, variation with illumination, effect of traps, application of photoconductivity, photovoltaics cells, solar cell and its characteristics. (2 week)	GD	Test(4 th week)
April	2 nd	Magnetic Properties Of Solids Atomic magnetic moments, orbital diamagnetism. Classical theory of paramagnetism (2 week)	Presentation	Assignment(3 rd week)
		Ferromagnetism, molecular fields and domain hypothesis. (2 week)	Seminar	Test(4 th week)

Rajab

29.12.17