

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري لمادة فيزياء هندسية

	Material Covered
Week	Syllabus
1+2+3	Introduction to Engineering Physics, Newtonian mechanics and applications, Overview of wave motion and harmonic oscillators, Wave properties: Interference and diffraction
4	Coherence and the basics of wave-particle duality, Practical: Diffraction experiments and interference patterns
5+6	Basics of blackbody radiation, Blackbody Radiation Spectrum, Energy Distribution in Blackbody Radiation Spectrum, Photo-Electric Effect, Experimental Study, Compton Effect
7	Wave Particle Dualism, de-Broglie Hypothesis, de-Broglie's Wavelength, de-Broglie's Wavelength-Extension to electron Particle
8	Matter Waves And Their Characteristic Properties, Phase Velocity, Group Velocity and Particle Velocity, Relation between Phase Velocity and Group Velocity,
9	Relation between Group Velocity, Phase Velocity and Velocity of Light, Solved Problems.
10	Dielectric Constant And Polarization Of Dielectric Materials, Dielectric Constant, Dielectric Susceptibility, Polarizability
11	Relation between Dielectric Constant and Polarization, Types of Polarization, Electronic Polarization, Ionic Polarization, Orientational Polarization
12+13	Space Charge Polarization, Frequency and Temperature Dependence of Polarization , Ferro And Piezo–Electricity, Properties of Ferroelectric materials, Piezoelectric Materials , Important Applications of Dielectric Materials , Solved Problems
14+15	Classification of Magnetic Material, Antiferro Magnetic Materials, Ferrimagnetic Materials, Domain Theory of Ferromagnetism, Hysteresis Curve , Soft and Hard Magnetic Materials , Solved Problems
16	Final Exam