

The Department of Mathematics

2024–25–A term

Course Name Quantum Theory 2

Course Number 203.1.3241

Course web page

<https://www.math.bgu.ac.il/en/teaching/fall2025/courses/quantum-theory-2>

Office Hours <https://www.math.bgu.ac.il/en/teaching/hours>

Abstract

Requirements and grading¹

Course topics

Hilbert space. The probability matrix. Unitary operations: Displacements, Rotations, Boosts, Gauge. Unitary representations of rotations and the spin concept. Actual procedure for building rotation matrices. Addition of angular momentum (elementary). Perturbation theory. Wigner decay. Fermi golden rule. The adiabatic equation. Particle in a few site system. Particle in 1D ring and AB effect. Particle in a uniform magnetic field (Landau, Hall). Spin s in magnetic field.

¹Information may change during the first two weeks of the term. Please consult the webpage for updates