

Advanced Quantum Mechanics (BMETEEFBsFEHKM-00)

Schedule for semester 2025/26/2

Week	Date	Topic
1	Feb. 20	Solution of the Helium atom; exchange interactions
2	Feb. 27	Solution of the H ₂ ⁺ ion; covalent bonds
3	Mar. 6	Symmetries in quantum mechanics; Heisenberg picture; Translations and rotations
4	Mar. 13	Addition of angular momentum and spin
5	Mar. 20	Discrete symmetries; Parity and time-reversal
6	Mar. 27	Scattering theory
7	Apr. 17	Scattering theory cont.; optical theorem
8	Apr. 24	The Dirac equation
9	May 8	Dirac equation cont.; Spin-orbit coupling
10	May 15	The path integral formulation
11	May 22	Motion in a magnetic field; Aharonov-Bohm effect
12	May 29	The density matrix; Entanglement entropy