

Free “Quantum Physics” course, on Fridays, 6-8PM

by Dr. [Roman Senkov](mailto:rsenkov@lagcc.cuny.edu) (rsenkov@lagcc.cuny.edu) for LaGuardia Society of Physics Students
Registration form: https://docs.google.com/forms/d/e/1FAIpQLSfkEaLnMdKuSZE716Ltx-OgG6EkdEQu62-8gb_mOTBkYoaAkg/viewform?usp=sf_link

with support of [Ad Astra Newsletter](#) and LaGuardia [ASAP](#) program

This is a set of free and friendly online lectures/seminars on topics of Modern Physics. The lectures will be given by Prof. Roman Senkov, scheduled on Fridays, from 6pm to 8pm, via zoom. These lectures can serve as a good transition into a for-credit modern physics course, in particular, Quantum Mechanics for Engineers, that the electrical engineering students have to take at City College. After taking this set of lectures (about 20hrs) the you will learn the basic ideas of Quantum Mechanics, which had revolutionized the way people thought of space, time, matter, and energy. You will also learn about the experiments that led to the development of early quantum mechanics.

Tentative program and schedule

- Lecture #01: Introduction. Blackbody Radiation and Photoelectric Effect.
Date: **March 19th**, zoom, 6-8pm
- Lecture #02: The Compton Effect. Photons.
Date: **March 26th**, zoom, 6-8pm
- Lecture #03: De Broglie’s Matter Waves and Wave-Particle Duality.
Date: **April 9th**, zoom, 6-8pm
- Lecture #04: Wave Functions. The Heisenberg Uncertainty Principle.
Date: **April 16th**, zoom, 6-8pm
- Lecture #05: The Schrödinger Equation. The Quantum Particle in a Box.
Date: **April 23rd**, zoom, 6-8pm
- Lecture #06: Quantum SHM. The Quantum Tunneling of Particles through Potential Barriers.
Date: **April 30th**, zoom, 6-8pm
- Lecture #07: Quantization of Angular momentum and Spin. Clebsch-Gordan expansion.
Date: **May 7th**, zoom, 6-8pm
- Lecture #08: The Exclusion Principle and the Periodic Table.
Date: **May 14th**, zoom, 6-8pm
- Lecture #09: Atomic Spectra. Lasers. Ultracold atoms.
Date: **May 21st**, zoom, 6-8pm
- Lecture #10: Quantum gases. Fermi-Dirac and Bose-Einstein statistics. Superfluidity.
Date: **May 28th**, zoom, 6-8pm