- Podstawowe treści programowe (General knowledge):
  - Light as electromagnetic wave.
  - Physical interpretation of Maxwell's equations and wave equation.
  - Interference and diffraction of waves.
  - Polarization of light
  - Dispersion of electromagnetic waves in media.
  - Interaction between light and matter.
  - Wave-particle duality and its experimental confirmation.
  - Hamiltonian in classical and quantum mechanics.
  - Classical and quantum harmonic oscillator.
  - Time-dependent and time-independent Schrödinger equation.
  - Fundamentals of quantum formalism - physical quantities, states, operators.
  - Quantum description of hydrogen atom. Quantum numbers.
  - Coherence of light.
  - Holography and holograms.
  - Light beams
- Istotne zagadnienia specjalności studiów (Expertise knowledge):
  - Superposition of waves. Spatial and temporal frequencies.
  - Fresnel and Fraunhoffer diffraction.
  - Liquid crystals.
  - Optical fibers.
  - Planar optical waveguides.
  - Nonlinear effects in optics.*
  - Fiber and waveguide sensor.
  - Diffractive optical elements.
  - Interferometers and their applications.
  - Absorption and emission of light.
  - Principles of operation of laser.
  - Electromagnetic field as a quantum structure.
  - Light propagation in geometrical and wave description.
  - Sampling and its application in optical information processing.
  - Optical transforms.