PHYS1.4: OPTICS AND QUANTUM MECHANICS

I. Course description:

1. **Credit points**: 2 ECTS
2. **Time commitment:**

Items	Lecture	Tutorial	Practical	**Total**
No. of hours	12	8	0	**20**

3. **Prerequisites:** Mathematical analysis, mechanics
4. **Recommended background knowledge:** Basic knowledge in high school level
5. **Subject description:** The course consists of the essential topics related to geometry, wave and quantum properties of light.
6. **Objectives & Outcome:**

   This course will cover the basics of physical optics including geometric optics. The nature of light will be first introduced together with its behaviour in different cases. Geometrical optics will deal with the phenomena of reflection and refraction where light is considered as rays. Image formation, mirrors, lenses, and more complex optical instruments will be studied in detail.

7. **Assessment/ Evaluation:**

Component	Attendance	Exercises	Assignments	Lab-work	Midterm	Final
Percentage %	10	10	0	0	30	50

8. **Prescribed Textbook(s):**

[1] Halliday and Resnick, Fundamentals of PHYSICS 10th Edition, Jearl Walker.
[2]Young and Freedman, Sears and Zemansky's UNIVERSITY PHYSICSwith Modern Physics, 13th Edition, Pearson-Addison Wesley.
[3]Serway and Jewett, PHYSICS for Scientists and Engineers with Modern Physics, 6th Edition, Thomson-Brooks/Cole.

II. Course content & schedule:

1. Image
2. Interference
3. Diffraction

4. Introduction to quantum physics

III. Reference Literature: N/A

[1] Halliday and Resnick,Fundamentals of PHYSICS 10th Edition, Jearl Walker