Course Syllabus

1. **Course number and name:** 020OPTCI3 Wave Optics
2. **Credits and contact hours:** 2 ECTS credits, 2x1:15 course hours
3. **Instructor's or course coordinator's name:** Marwan BROUCHE
4. **Textbook:** *Physique tout-en-un MP, Salamito, J'intègre-Dunod, 2014*
5. **Specific course information**
   a. **catalog description:** Optical path length, Propagating waves, Malus theory, Complex representation of waves: Plane waves: sign convention, propagation directions, Spherical waves, Superposition of Waves, Division of Wavefront Interferometers (Young's Experiment), Division of Amplitude Interferometers (Michelson Interferometer)

   b. **prerequisites:** 020SPHNI1 Physical Signals
   c. **Required/Elective/Selected Elective:** Required
6. **Specific goals for the course**
   a. **specific outcomes of instruction**
      - To learn the fundamental principles of classical physical optics.
      - Define the different type of waves.
      - Illustrate the principle of superposition
      - To describe Young's experiment using complex amplitudes and phasors
      - To be familiar with a range of equipment used in modern optics, particularly the Michelson interferometer.
      - To describe Fraunhofer diffraction.

   b. **KPIs addressed by the course:**

KPI	a1	a2	b1	b2	b3
Covered	x		x		
Assessed	x				
Give Feedback	x				

7. **Topics and approximate lecture hours:**
   - Optical path length, Propagating waves, Malus theory (6 Lecture)
   - Complex representation of waves: Plane waves: sign convention, propagation directions, Spherical waves, Superposition of Waves (6 Lectures)
   - Division of Wavefront Interferometers (Young's Experiment), (8 Lectures)
   - Division of Amplitude Interferometers (Michelson Interferometer) (8 lectures)