

Course Syllabus

1. **Course number and name:** 020OPTNI3 Wave Optics
2. **Credits and contact hours:** 2 ECTS credits, 2x1:15 course hours
3. **Instructor's or course coordinator's name:** Pascale ABBOUD
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)