Course Syllabus

1. Course number and name: 020PP2NI3 Physics Laboratory 2
2. Credits and contact hours: 2 ECTS credits, 1x2:30 Lab. hours
3. Instructor's or course coordinator's name: Joseph KESSERWANI
4. Specific course information
    a. Catalog description
    Summing/differential amplifiers, Linear filter, Fourier analysis, Thomson tube, Acoustic waves, heat transfer, Stefan-Boltzmann's law, Two degrees of freedom oscillator, Diffraction and interferences, Light polarization.
5. Prerequisites: 020PP1NI2 Physics Laboratory 1
    a.
    b. Required/Elective/Selected Elective: Required
6. Specific goals for the course
    a. specific outcomes of instruction
        - Study electric circuits with operational amplifiers.
        - Analyze high-pass and low-pass filters.
        - Sketch Bode diagrams.
        - Analyze Fourier series.
        - Study acoustic waves.
        - Compare thermal conductivity for different materials.
        - Verify Stephan-Boltzmann law.
        - Examine the mechanical properties on a two degree of freedom (2DOF) oscillator.
        - Analyze light diffraction, interference and polarization.
        - Calculate experimental uncertainty.
    b. KPIs addressed by the course.

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

7. Brief list of topics to be covered and approximate number of lectures:

1. Summing/differential amplifiers (1 lecture)
2. Linear filter (1 lecture)
3. Fourier analysis (1 lecture)
4. Thomson tube (1 lecture)
5. Acoustic waves (1 lecture)
6. heat transfer (1 lecture)
7. Stefan-Boltzmann's law (1 lecture)
8. Two degrees of freedom oscillator (1 lecture)
9. Diffraction and interferences (1 lecture)
10. Light polarization. (1 lecture)