Course Syllabus

1. **Course number and name:** 020TH2CI4 Thermodynamics 2
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:**
      First and second law of thermodynamics for an open system in a steady state, one dimensional steady state flow at the input and output sections. Introduction to conduction, convection and radiation, Fourier's law, Thermal conductivity, Thermal contact resistance, Steady-state. Thermal transfer coefficient of the surface, Newton's law
   b. **prerequisites:** 020TR1CI2 Thermodynamics I
   c. **Required/Elective/Selected Elective:** Required
6. **Specific goals for the course**
   a. **specific outcomes of instruction**
      - To develop a strong understanding of engineering thermodynamics and heat transfer and to be able to use this to solve engineering problems.
      - To be able to understand the basic concepts of the first and second law of thermodynamics for an open system in a steady state.
      - To develop a conceptual understanding of the fundamental elements of heat transfer.
      - To gain a basic working knowledge of the various modes of heat transfer.
      - To develop some methods of analysis for problems involving heat flow.
   b. **KPIs addressed by the course:**

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

7. Topics and approximate lecture hours:

   - Review of first and second Laws (4 Lectures)
   - Principles for an open system in a steady state (5 Lectures)
   - Introduction to conduction, convection and radiation (8 lectures)
   - Fourier's law, Thermal conductivity, Thermal contact resistance (8 Lectures)
   - Thermal transfer coefficient of the surface, Newton's law (3 Lectures)