

## Course Description Form of thermofluids

<b>1. Course Name:</b>					
thermofluids					
<b>2. Course Code:</b>					
<b>3. Semester / Year:</b>					
Semester 1 AND semester 2					
<b>4. Description Preparation Date:</b>					
2024-3-19					
<b>5. Available Attendance Forms:</b>					
presence in the classroom					
<b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>					
30 Hours / 3Units					
<b>7. Course administrator's name (mention all, if more than one name)</b>					
Prof. Dr. Ghanim Kadhim Abdulsada Email: Ghanim.sada@uowa.edu.iq					
<b>8. Course Objectives</b>					
<b>Course Objectives</b>			This subject aims to provide students with knowledge of basic concepts in fluids and systems used in thermal science, including thermodynamic laws, processes and cycles, work and heat		
<b>9. Teaching and Learning Strategies</b>					
<b>Strategy</b>		<ul style="list-style-type: none"> <li>• Using the smart board</li> <li>• Use illustrative pictures whenever possible</li> </ul>			
<b>10. Course Structure</b>					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Basic Fluid and Thermodynamics Properties State ;	Thermodynamics fundamental	Lectures presented in PDF format	Daily exams + homework assignments + monthly exams

2	2	Closed and open systems; Thermal properties	Thermodynamics fundamental	Lectures presented in PDF format	Daily exams homework assignments monthly exam
3	2	Temperature and the Zeroth law; Work, heat and internal energy;	Thermodynamics fundamental	Lectures presented in PDF format	Daily exams homework assignments monthly exam
4	2	Equation of state of ideal gas; Pure substance; Phase diagrams;	Thermodynamics fundamental	Lectures presented in PDF format	Daily exams homework assignments monthly exam
5	2	Fluid properties and thermodynamic	Thermodynamics fundamental	Lectures presented in PDF format	Daily exams homework assignments monthly
6	2	The First Law of Thermodynamics Conservation of mass and control volume ;	Thermodynamics fundamental	Lectures presented in PDF format	Daily exams homework assignments monthly
7	2	Basic Heat Transfer The three basic modes heat transfer and their governing equations;	Heat transfer modes	Lectures presented in PDF format	Daily exams homework assignments monthly
8	2	modes heat transfer and their governing equations;  Conduction heat transfer , convection heat transfer And radiation heat	Modes of heat transfer	Lectures presented in PDF format	Daily exams homework assignments monthly

9	2	Dry and freezing	Two phase properties	Lectures presented in PDF format	Daily exams homework assignments monthly
10	2	Absorption and deposition and sublimation	<b>Properties of substances</b>	Lectures presented in PDF format	Daily exams homework assignments monthly
11	2	Heat exchanger descriptions	Fundamental of heat exchanger	Lectures presented in PDF format	Daily exams homework assignments monthly
12 +13	4	Type of heat exchangers	Fundamental of heat exchanger	Lectures presented in PDF format	Daily exams homework assignments monthly
14+15	4	Membrane and refrigeration	Intertrochanteric, Subtrochanteric & Femur Shaft Fracures	Lectures presented	Daily exams homework

### 11. Course Evaluation

- Daily exams scientific questions.
- Establishing grades for environmental duties and the reports assigned to them
- Semester exams for the curriculum, in addition to the mid-year exam and final exam

### 12. Learning and Teaching Resources

Fundamental of Thermal fluid Science By Cengel Y. A. , Turner R.H. and cimbala J .