

Course Description Form

1. Course Name:				
Thermal Fluid Mechanics II				
2. Course Code:				
WBM-42-07				
3. Semester / Year:				
Semester 2 / 2026				
4. Description Preparation Date:				
17/2/2026				
5. Available Attendance Forms:				
In-class attendance				
6. Number of Credit Hours (Total) / Number of Units (Total)				
30 hours / 3 units				
7. Course administrator's name (mention all, if more than one name)				
Natiq Aziz Imran nataq.az@uowa.edu.iq				
8. Course Objectives				
This course aims to provide students with knowledge of the fundamental concepts in fluids and systems used in thermal sciences, including thermodynamic laws, processes, cycles, work, and heat.				
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9. Teaching and Learning Strategies				
- Use of smart board - Use of illustrative images whenever possible				
10. Course Structure				
Week	Hours	Unit or subject name and required learning outcomes	Learning method	Evaluation method
1	2	Properties of fluids and basic thermodynamics	Lectures provided in PDF	Daily quizzes Homework Monthly exam

2	2	Closed and open systems, thermodynamic properties	Lectures provided in PDF	Daily quizzes + Homework + Monthly exams
3	2	Temperature and zeroth law, work, heat, and internal energy	Lectures provided in PDF	Daily quizzes + Homework + Monthly exams
4	2	Ideal gas equation of state, pure substance phases, schematic diagrams	Lectures provided in PDF	Daily quizzes + Homework + Monthly exams
5	2	Properties of fluids and thermodynamics	Lectures provided in PDF	Daily quizzes + Homework + Monthly exams
6	2	First law of thermodynamics, mass conservation, and volume control	Lectures provided in PDF	Daily quizzes + Homework + Monthly exams
7	2	Basic heat transfer, three modes of heat transfer and governing equations	Lectures provided in PDF	Daily quizzes + Homework + Monthly exams
8	2	Heat transfer modes and governing equations; conduction, convection, radiation	Lectures provided in PDF	Daily quizzes + Homework + Monthly exams
9	2	Dry and frozen phases	Lectures provided in PDF	Daily quizzes + Homework + Monthly exams
10	2	Absorption, deposition, and sublimation membrane	Lectures provided in PDF	Daily quizzes + Homework + Monthly exams
11	2	Heat exchanger descriptions	Lectures provided in PDF	Daily quizzes + Homework + Monthly exams
12–13	4	Types of heat exchangers	Lectures provided in PDF	Daily quizzes + Homework + Monthly exams
14–15	4	Cooling and air conditioning	Lectures provided	Daily quizzes + Homework + Monthly exams

11. Course Evaluation	
- Daily exams with scientific questions - Grading of assigned homework and reports - Semester exams covering the syllabus, in addition to midterm and final exams	
12. Learning and Teaching Resources	
	أساسيات علم السوائل الحرارية بقلم Cengel Y. A. و Turner R.H. و .cimbala J

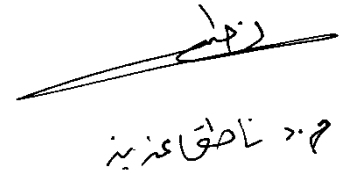


Head of the Department

Dr. Osama Abdulbari



أ.م.د. حسين هادي حسين
عميد كلية الهندسة



د. ناصر الزهراني