

Module (Course Syllabus) Catalogue

2023-2024

College	Erbil Technical Engineering College	
Department	Mechanical and Energy Engineering	
Module Name	Selected Topics in Heat Transfer	
Module Code	STH101	
Degree	Technical Diploma <input type="checkbox"/>	Bachelor <input type="checkbox"/> High Diploma <input type="checkbox"/> Master <input type="checkbox"/> PhD <input checked="" type="checkbox"/>
Semester	First	
Qualification	Ph.D. in Mechanical Engineering	
Scientific Title	Professor	
ECTS (Credits)	6	
Module type	Prerequisite <input type="checkbox"/>	Core <input checked="" type="checkbox"/> Assist. <input type="checkbox"/>
Weekly hours		
Weekly hours (Theory)	(3)hr Class	(36)Total hrs Workload
Weekly hours (Practical)	()hr Class	()Total hrs Workload
Number of Weeks	15	
Lecturer (Theory)	Prof. Dr. Ahmed Mohammed Adham	
E-Mail & Mobile NO.	ahmed.adham@epu.edu.iq ; 07500271523	
Websites	https://academicstaff.epu.edu.iq/faculty/ahmed.adham	

Course Book

Course Description	Individual or group study of selected topics in conduction and convection heat transfer under the supervision of the instructor. The course involves continuous study during the course period for the selected topics. The load of the course is carried mainly by the students, with a continuous supervision, guidance, and instruction of the course instructor. At the end of the course, a seminar for the topics under study should be submitted by the students. The study could be made either individually or by a group of students, depending on the degree of complexity of the topic's subjects, and also on the number of students attending the course.				
Course objectives	The objective of this course is to make the students familiar with selected topics in heat transfer in which they have not been in contact with. Focus will be on nanofluid heat transfer and its application in refrigeration and air conditioning, solar and cooling applications. After this course, the students should be to use the new subjects in their research field and explain why he has used certain fluids, material and concept in their upcoming research period.				
Student's obligation	The students are obliged to attend and pass this course as a requirement to start their doctoral dissertation. He / She has to submit a review paper (not less than 3000 words) on a selected topic which is preferred to be close to his/her research field and also they should pass the final examination.				
Required Learning Materials					
Evaluation	Task		Weight (Marks)	Due Week	Relevant Learning Outcome
	Review Article		10 %	12	
	Assignments	Homework	0 %		
		Class Activity	0 %		
		Report	0 %		
		Seminar	5 %	7	
		Attendance	5 %		
		Project	0 %		

	Quiz	10 %	5 & 7	
	Lab.	0 %		
	Midterm Exam	20 %	8	
	Final Exam	50 %	15	
	Total	100 %		
Specific learning outcome:	1- To describe the nanofluids preparation and applications 2- To deal with phase change heat transfer 3- To be able to cool electronic components 4- To deal with cooling and heating of buildings 5- To interact with Refrigeration and freezing process of foods			
Course References:	<ol style="list-style-type: none"> 1. “Convective Heat and Mass Transfer”, W.M.Kays, McGraw Hill Holman 2. “Heat Transfer: A Practical Approach”, Yunus A. Gengel, Mc Graw Hill 3. “Boundary Layer Theory”, Herman Schlichting, Mc Graw Hill 4. “Advanced Heat Transfer”, Greg F. Naterer, CRC press Taylor & Francis 5. “Nanofluids Science and Technology”, S. K. Das and et. al, a John Wiley & Sons, Inc., publication 			
Course topics (Theory)		Week	Learning Outcome	
Nanofluids Heat Transfer (Introduction)		1-2		
Nanofluids Preparations		3		
Nanofluids applications		4		
Convective Heat Transfer		5-6		
Phase change Heat Transfer		7-8		
Cooling of Electronic equipment		9-10		
Heat and Cooling of Buildings		11		
Refrigeration and Freezing of Foods		12-13		
Examination Preparations		14		
Final Examination		15		

Questions Example Design

Extra notes:

External Evaluator

I confirm that the contents of this syllabus (course catalogue) are sufficient and cover all the requirements of Selected Topics in Heat Transfer subject.



Dr. Banipal N. Yaqob
21/10/2023