HANYANG UNIVERSITY

Hanyang International Summer School

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Course Information	**Class No.**	TBA	**Course Code**	MEE4001	**Credits**	3
	Course Name	Heat Transfer				
	Lecture Schedule	Tue-Fri / 9:00 AM - 12:00 PM				
	Course Description	Heat transfer is a fundamental science regarding how a thermal energy transfers from an object to another. This course offers an introduction to the manner in which heat is transferred between objects and very importantly, how to predict and engineer such transfer. Thermal management of an engineering system has drawn huge significance, as an engineering system such as electronics and energy systems become more integrated and high-power. To properly design and establish thermal management systems and strategy, it is very important to understand the fundamentals of heat and mass transfer including different modes of heat transfer and principles behind them.				
	Course Objective	The objective of the course is to introduce you to the fundamentals of heat transfer. Upon a successful completion of this course, students are expected to achieve the followings. 1. Understand three different modes of heat transfer: conduction, convection, radiation. 2. Analyze heat exchanger systems at a different orientation and operating conditions using the relevant empirical correlations with nondimensionalized numbers. 3. Understand fundamentals of mass transfer and analogy with heat transfer.				
	Prerequisite	Fluid Mechanics				
	Materials/Textbooks	*Main Textbook:* *Heat Transfer: A Practical Approach*, by Yunus A. Cengel, McGraw-Hill. *Reference Textbook:* Principle of Heat and Mass Transfer, Global Ed. by Frank P. Incropera et al., Wiley.				
Evaluation	**Attendance**	10 %	**Quiz**	%		
	Assignment	20 %	**Mid-term Exam**	35 %		
	Presentation	%	**Final Exam**	35 %		
	Group Project	%	**Participation**	%		
	Etc.	**Evaluation Item**		**Ratio**		
				%		
				%		
Daily	**Week**	Day 1	Basics of Heat Transfer			

Lecture Plan	**1**		
		Day 2	Steady Heat Conduction
		Day 3	Steady Heat Conduction
		Day 4	Transient Heat Conduction
	Week 2	Day 1	Transient Heat Conduction
		Day 2	Numerical Methods in Heat Conduction
		Day 3	Midterm Exam
		Day 4	Fundamentals of Convection
	Week 3	Day 1	External Forced Convection
		Day 2	External Forced Convection
		Day 3	Internal Forced Convection
		Day 4	Internal Forced Convection
	Week 4	Day 1	Heat Exchangers
		Day 2	Fundamentals of Thermal Radiation
		Day 3	Final Exam
		Day 4	Graduation (NO class)