

99-1 Preliminary Syllabus, Da-Yeh Univ

Information			
Title	熱對流	Serial No. / ID	1564 / MUR5004
Dept.	機械與自動化工程學系碩士班	School System / Class	研究所碩士班1年1班
Lecturer	吳佩學	Full or Part-time	專任
Required / Credit	Optinal / 3	Graduate Class	No
Time / Place	(二)34 / H455 (三)4 / H455	Language	English

Introduction
<p>This is a one-semester, selective course for graduate students who are in Master or Ph.D. programs. The course is an extension of the undergraduate “ Heat Transfer ” course with specialization in CONVECTION mode of heat transfer. Main objectives of this course are for students</p> <p>(1) to acquire the ability and use more advanced math to analyze, formulate, and solve complex convective problems from basic principles, and</p> <p>(2) to get familiar with some well known convection solutions and gain physical sense on real-world problem from the obtained solutions.</p>

Outline
<p>Chapter 1 Introduction</p> <p>Chapter 2 Conservation Principles</p> <p>Chapter 3 Fluid Stresses and Flux Laws</p> <p>Chapter 4 Differential Equations for the Laminar Boundary Layer</p> <p>Chapter 5 Integral Equations for the Boundary Layer</p> <p>Chapter 7 Laminar Internal Flows: Momentum Transfer</p> <p>Chapter 8 Laminar Internal Flows: Heat Transfer</p> <p>Chapter 9 Laminar External Boundary Layers: Momentum Transfer</p> <p>Chapter 10 Laminar External Boundary Layers: Heat Transfer</p> <p>Chapter 15 Influence of Temperature-Dependent Fluid Properties</p> <p>Chapter 16 Convective Heat Transfer at High Velocities</p> <p>Chapter 17 Convective Heat Transfer with Body Forces</p> <p>Introduction to Turbulence (notes)</p> <p>Turbulence Modeling (notes and papers)</p>

Prerequisite
Engineering Mathematics, Heat Transfer, Fluid Mechanics