



University of Salerno
Department of Industrial Engineering



www.minerva.unisa.it

Transport Phenomena in Food Processes

Master Degree in Food Engineering

Prof. Ing. Gaetano Lamberti
Prof. Ing. Francesco Marra

Course code
0622800020

Academic Year 2013/2014

Course Introduction

Teachers

Prof. Ing. Gaetano Lamberti

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Timetable

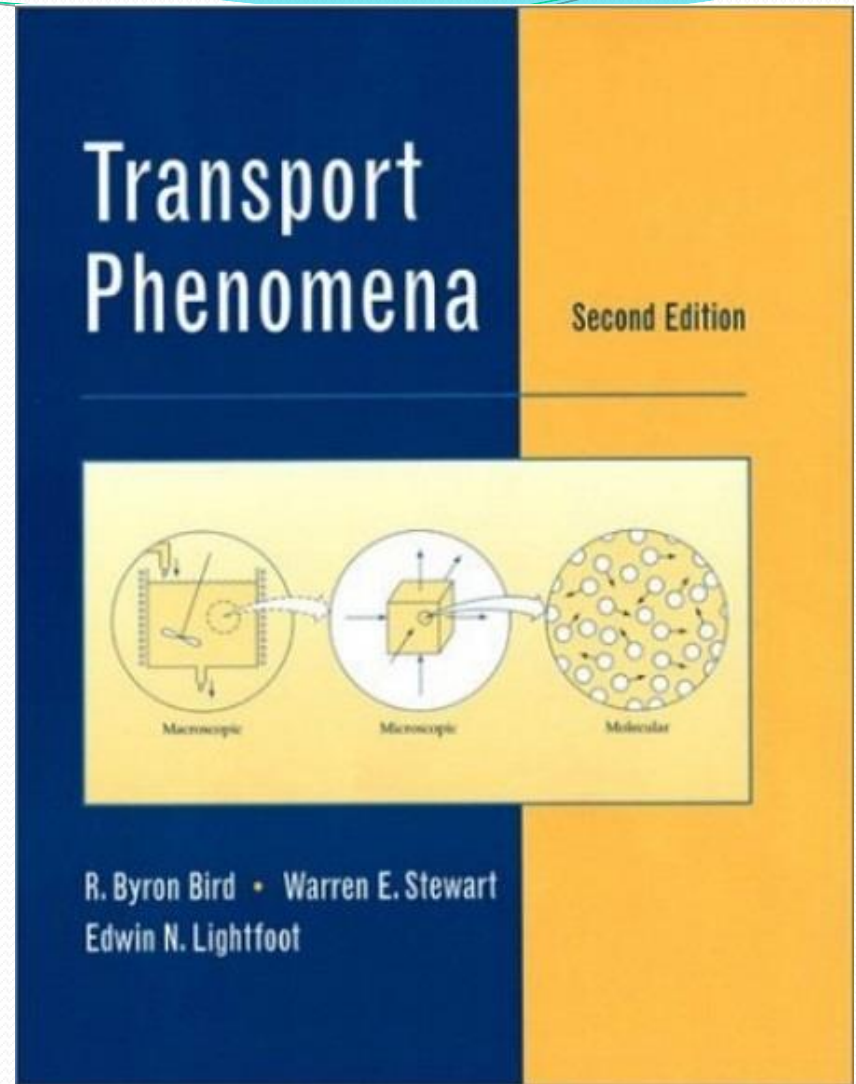
	Monday	Tuesday	Wednesday	Thursday	Friday
8:30-9:30					
9:30-10:30					
10:30-11:30					
11:30-12:30					Room 136
12:30-13:30					Room 136
13:30-14:30					
14:30-15:30				Room 136	
15:30-16:30		Room 129		Room 136	
16:30-17:30		Room 129		Room 136	
17:30-18:30		Room 129			



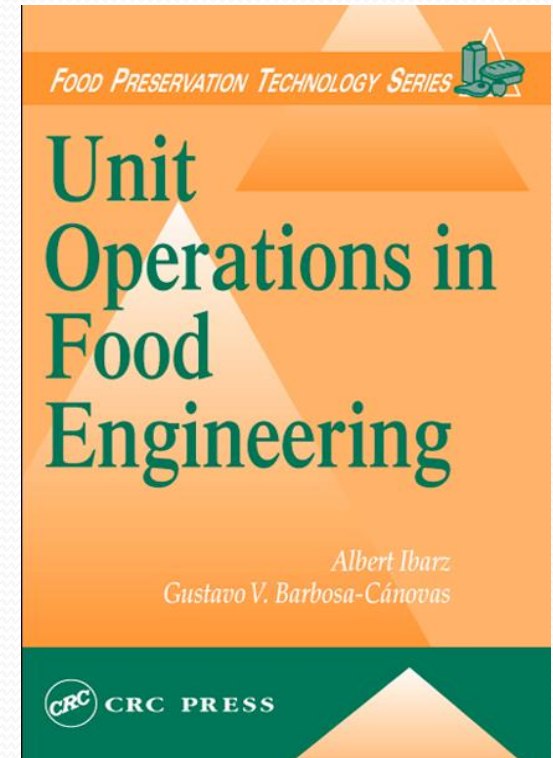
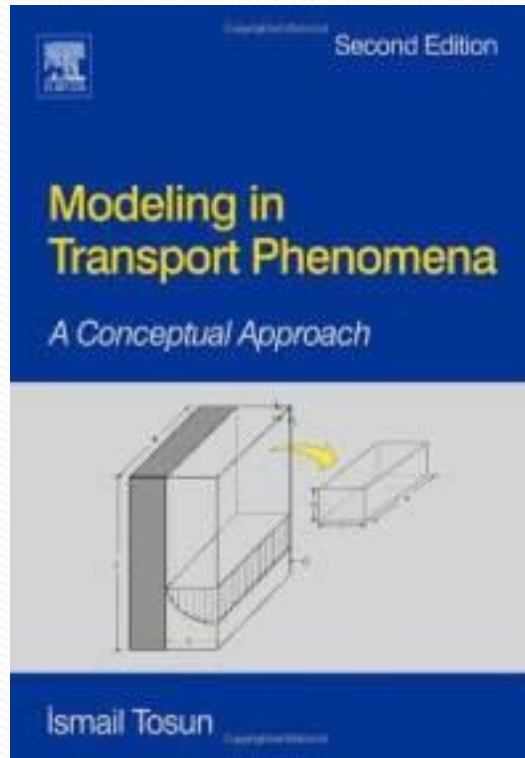
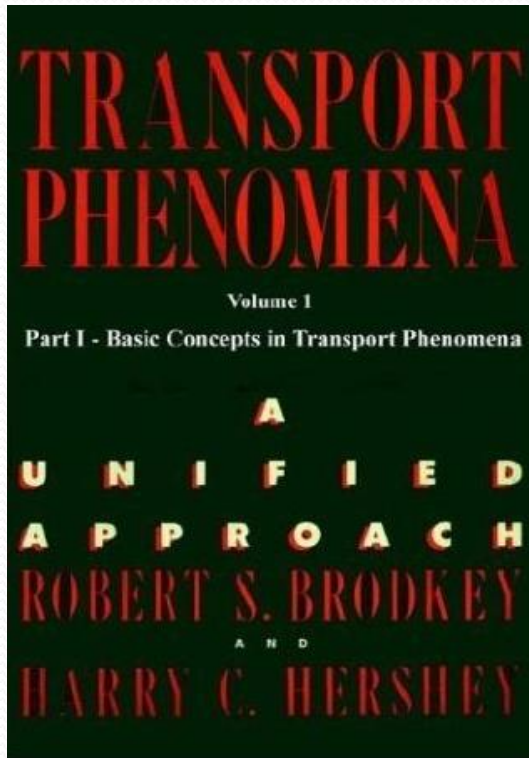
Textbook: main

Course website:

<http://www.minerva.unisa.it/serv/tpfp>



Textbooks: ancillary



Course outline

First level course
«Principi di Ingegneria
Chimica»

This course
«Transport Phenomena in
Food Processes»

Table 0.2-1 Organization of the Topics in This Book

Type of transport	Momentum	Energy	Mass
Transport by molecular motion	1 Viscosity and the stress (momentum flux) tensor	9 Thermal conductivity and the heat-flux vector	17 Diffusivity and the mass-flux vectors
Transport in one dimension (shell-balance methods)	2 Shell momentum balances and velocity distributions	10 Shell energy balances and temperature distributions	18 Shell mass balances and concentration distributions
Transport in arbitrary continua (use of general transport equations)	3 Equations of change and their use [isothermal]	11 Equations of change and their use [nonisothermal]	19 Equations of change and their use [mixtures]
Transport with two independent variables (special methods)	4 Momentum transport with two independent variables	12 Energy transport with two independent variables	20 Mass transport with two independent variables
Transport in turbulent flow, and eddy transport properties	5 Turbulent momentum transport; eddy viscosity	13 Turbulent energy transport; eddy thermal conductivity	21 Turbulent mass transport; eddy diffusivity
Transport across phase boundaries	6 Friction factors; use of empirical correlations	14 Heat-transfer coefficients; use of empirical correlations	22 Mass-transfer coefficients; use of empirical correlations
Transport in large systems, such as pieces of equipment or parts thereof	7 Macroscopic balances [isothermal]	15 Macroscopic balances [nonisothermal]	23 Macroscopic balances [mixtures]
Transport by other mechanisms	8 Momentum transport in polymeric liquids	16 Energy transport by radiation	24 Mass transport in multi-component systems; cross effects



End of the lesson

