Materiale Didattico

MP – Medical Physiology, Arthur C. Guyton and John E. Hall, 11th Edition;
ME – Metabolic Engineering: Principles and Methodologies, Gregory N. Stephanopulos, Aristos A. Aristidou and Jens Nielsen, Academic Press, 1998.
EZ – Enzyme Kinetics: Behavior and Analysis of Rapid Equilibrium and Steady-State Enzyme Systems, Wiley Classics Library, Irwin H. Segel, 1975.
ACSMAEP – ACSM's Advanced Exercise Physiology, Lippincott Williams & Wilkins, 2006.

Lecture 1 **Enzyme kinetics**

ME 27-34, 147-161	Henri-Michaelis-Menten Equation
EZ Ch 2 & 3 & slides	Haldane Relationship
	Reaction order
	Estimation of kinetic parameters
	Competitive inhibition

Lecture 2 **Transport of O_2 and CO_2 in Body Fluids**

MP 502-13 & slides	Transport of oxygen from lungs to body tissues
	Role of hemoglobin in oxygen transport
	Metabolic use of oxygen by the cells
	Diffusion of CO_2 from peripheral tissue to alveoli
	Transport of CO_2 in blood

Lecture 3 **Introduction to mathematical models of physiological systems**

ACSMAEP	Mathematical model of physiological systems
300-313 & slides	Compartment model of blood-tissue O2 transport: Tissue perfusion dynamics, Capillary-tissue transport
	Compartment model of blood-tissue O2 transport and metabolism
	Integrated function of the Lungs, Heart, Blood and Muscles