

### **103a: Momentum Transfer**

Week 1: Classical Mechanics; Dimensional Analysis

Week 2: Continuum Mechanics

Week 3: Momentum Transport with One Independent Coordinate

Week 4: Momentum Transport with One or More Independent Coordinates

Week 5: Momentum Transport with More than One Independent Coordinate

Week 6: Computational Fluid Dynamics

Week 7: Microfluidics

Week 8: Non-Newtonian Fluids; Viscoelasticity

Week 9: Colloidal Suspensions

Week 10: Boundary Layers; Turbulence

### **103b: Transport Phenomena**

Week 1: Macroscopic Balances: Momentum Transfer

Week 2: Macroscopic Balances: Momentum Transfer, Heat Transfer

Week 3: Macroscopic Balances: Heat Transfer

Week 4: Radiation

Week 5: Thermal Energy Transfer with One Independent Coordinate

Week 6: Simultaneous Thermal Energy and Momentum Transfer

Week 7: Thermal Energy Transfer with More than One Independent Coordinate

Week 8: Numerical Heat Transfer

Week 9: Introduction to Mass Transfer Velocity and Flow

Week 10: Fick's Law of Diffusion