

# YouTube Videos: DrMorrisonMTU

## Transport 2 CM3120

### **Module 1: prereq**

Introduction to manometers: Two essential rules

Short introduction to the mechanical energy balance

Unit conversion issues with the mechanical energy balance

Analysis of a pitot tube

Microscopic momentum balances with the Navier-Stokes equation, part 1, part 2, part 3

Average fluid velocity in a pipe (steady, turbulent flow)

Calculating flow rate from velocity profile

Fluid force on a surface, (via stress tensor), part 1, part 2, part 3

Force on the wall in turbulent pipe flow

Macroscopic momentum balance—nozzle flow to tilted wall

Microscopic energy balance in a tube (1D radial heat transfer)

Microscopic energy balance in a slab (1D rectangular heat transfer)

### **Module 2: unsteady heat transfer**

Lumped parameter analysis in unsteady heat transfer

### **Module 3: Intro to diffusion**

McCabe-Thiele binary diffusion, part 1, part 2

### **Module 4: Mass transfer coefficients, UO**

To appear as time permits