E82 Fall 2002 Second Exam Skills List

1. Given the temperature, pressure and critical properties of a real gas, determine the compressibility and the specific volume of the gas.

2. Given a Txy diagram and an overall composition for a binary mixture, determine the bubble-point temperature and composition and the dew-point temperature and composition for the mixture, OR, given a Pxy diagram and an overall composition for a binary mixture, determine the bubble-point pressure and composition and the dew-point pressure and composition of the mixture.

3. Given the overall composition and temperature of a ternary mixture that follows Raoult's law; given the vapor pressures, calculate the bubble-point and dew-point pressures, OR, given the bubble-point pressure and two of the vapor pressures, calculate the dew-point pressure and the remaining vapor pressure, OR, given the dew-point pressure and two of the vapor pressures, calculate the bubble-point pressure and the remaining vapor pressure.

4. Given the length, material and diameter of a level section of a pipe, as well as the volumetric flow rate, density and Reynolds Number of the fluid flowing in the pipe, calculate the pressure drop in the pipe.