**Chbe 4400 Project 1**

Group 1

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Mass Balance:

(1)

Linearization:

At steady state:

Finally:

(2)

If Steady State:

Since outflow mass must equal to inflow mass, we have:

Energy balance:

(3)

Linearization:

At steady state:

Finally:

(4)

Equation for h:

(5)

At steady state:

(6)

[] =][ + [][]

Operating temperature plot:

Use mass balance to substitute C2:

Plug C2 in the Qreaction: