CHE 331A (Computer project)

Develop a computer code (Programme) to determine the required minimum volume of different reactor-systems for treating an organic containing wastewater effluent. The inputs to the code are

⇒ Flowrate of the wastewater = 0.05 – 0.2 m^3/min

⇒ Concentration of the organics in wastewater
= 1 – 20 mmol/m^3

⇒ Required concentration in the treated stream
= 0.1 – 2 mmol/m^3

System 1 : A single PFR
2. A single CSTR
3. Two stirred tanks of any size
4. A combination of a PFR and a MFR
5. A PFR with recycle

The computer code should also be able to determine the rate of the reaction from the following measurements used to study the degradation of the organics in the wastewater samples using a laboratory-scale MFR:

$C_{A,inlet}$ (mmole/m^3)	1 – 25
$C_{A,exit}$ (mmole/m^3)	0.1 – 5
τ (min)	50 – 1

} It is expected that the degradation follows an auto-catalytic type of reaction

You should test your code with the example 6.3 of the textbook.

Your code should also plot the results.