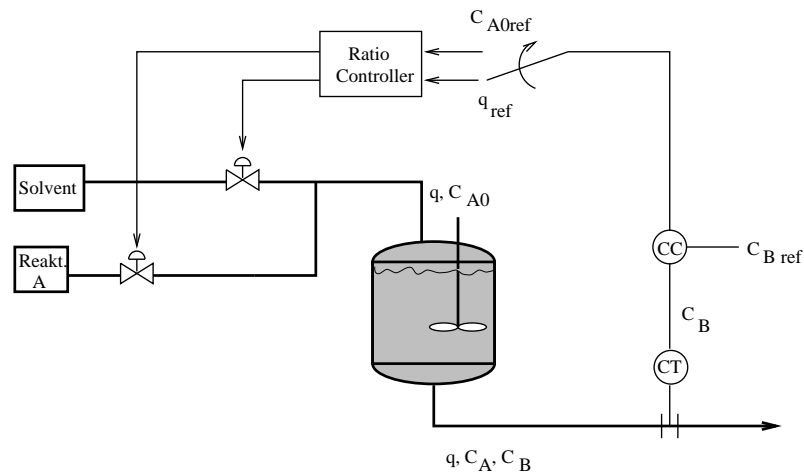


# Market Driven Systems (FRTN20)

## Introduction and Continuous Production Plants. Exercise 1 Solutions

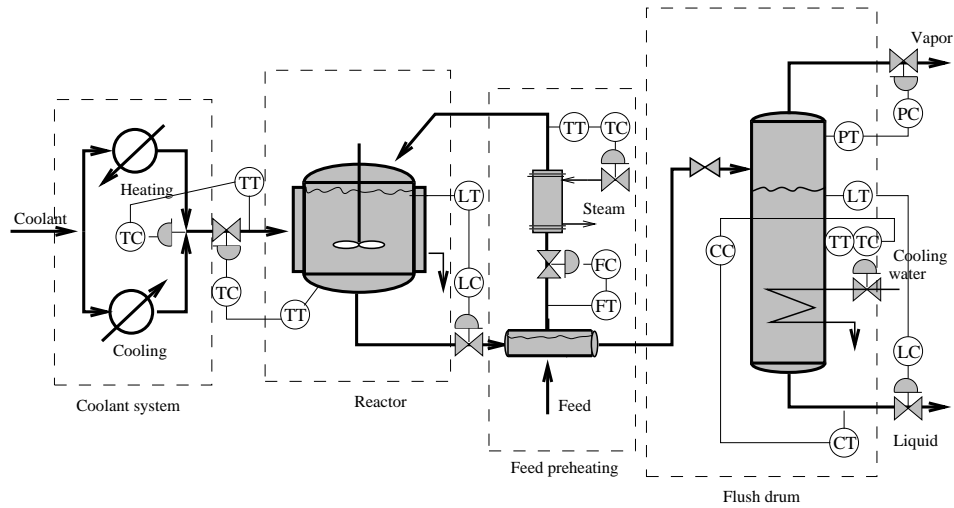
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1.
  - Continuous
  - Discrete
  - Batch
2. Produce products and thereby make money.
3. Continuous processes.
4. Continuous processes.
5. Discrete processes.
6.
  - The product is produced in batches.
  - Production is carried out in steps.
7.
  - Continuous: pulp and paper, metals
  - Discrete: automotive, machine parts
  - Batch: beverages, pharmaceuticals
8. One suggestion of how the sensors and transmitters can be placed is shown in Figure 1.



**Figure 1** The reactor with sensors and transmitters.

9. Transmitters and suggestions for controllers are shown in Figure 2.



**Figure 2** The chemical process with transmitters and controllers.

**a. Production rate**

- Inflow to the reactor.

**b. Inventory variables**

- The level in the reactor
- The level in the flash column

**c. Environment variables**

- The temperature in the reactor
- The temperature in the jacket
- The temperature of the inflow
- The temperature in the flash column
- The pressure in the flash column

**d. Production quality**

- The concentration in the outflow of the flash column