



FACULTY OF ENGINEERING
DEPARTMENT OF CHEMICAL ENGINEERING

INTRODUCTION TO CHEMICAL ENGINEERING

CEN 101

Assoc.Prof.Dr. Hakan KAYI

CHEMICAL PROCESS ?????



CHEMICAL PROCESS

A chemical process is a combination of steps in which starting materials are converted into desired products using equipment and conditions that facilitate conversion.

With a general definition, operations that cause physical or chemical change in a substance or mixture of substances.

CHEMICAL ENGINEERING deals with chemical processes where raw materials are converted to valuable products through chemical reactions and physical changes.

Chemical Change

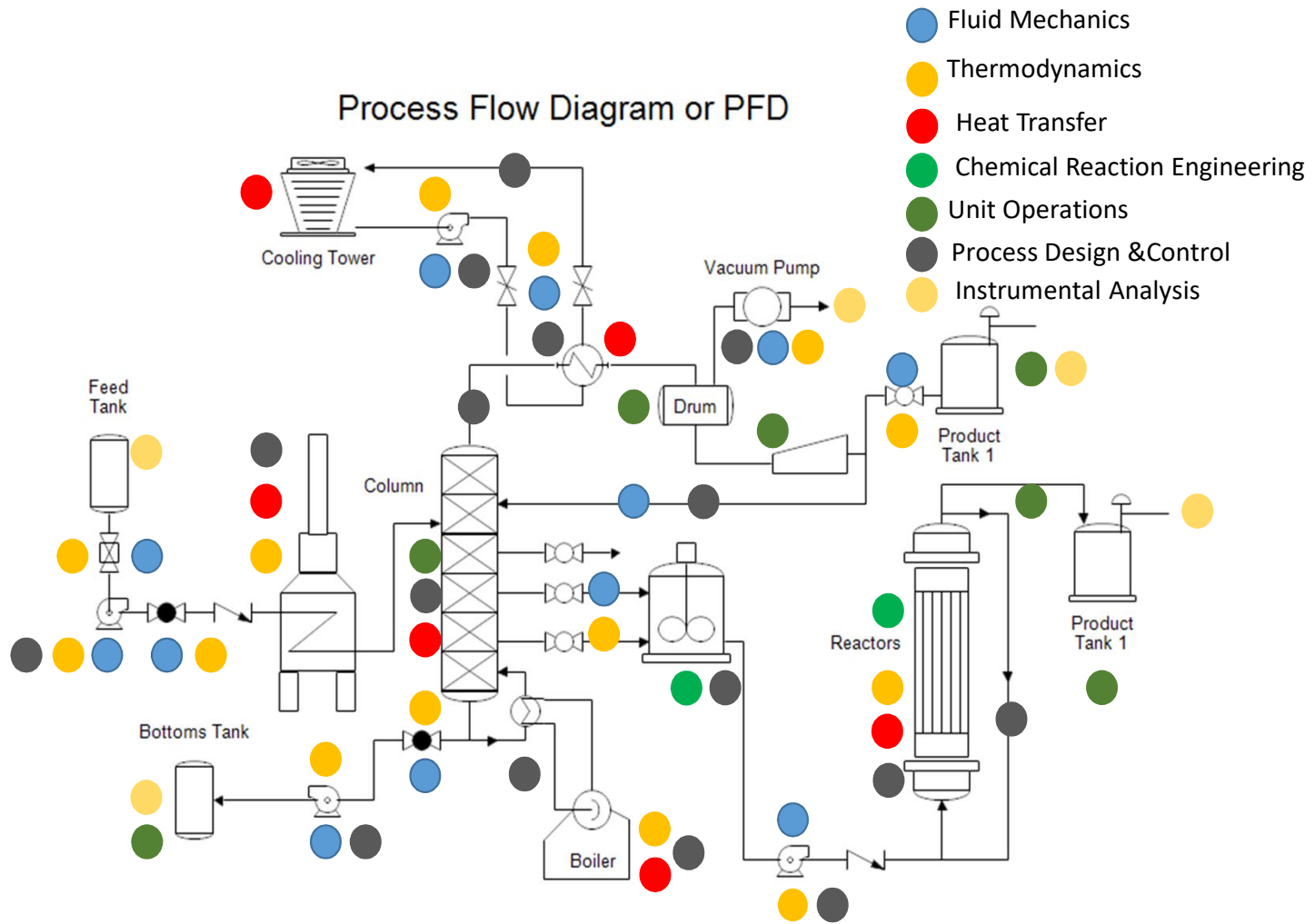
(Production of H_2SO_4 , NH_3 , plastics/polymers, etc.)

Physical Change

(sugar from sugar beet, olive oil, etc.)

Chemical + Physical Changes

Process Flow Diagram or PFD



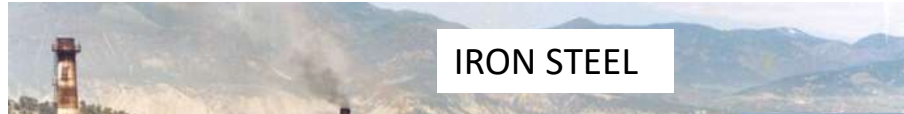
CHEMICAL ENGINEER

Design

- Flowsheet
- Unit design and specifications
(reactors, separation units,
heat exchangers)

Operation

- Production rate
- Quality
- Energy consumption
- Environmental effects
- Operation problems



IRON STEEL



PHARMACEUTICALS



PETROCHEMICALS



GLASS



CERAMIC



PAINT



CELLULOSE AND PAPER