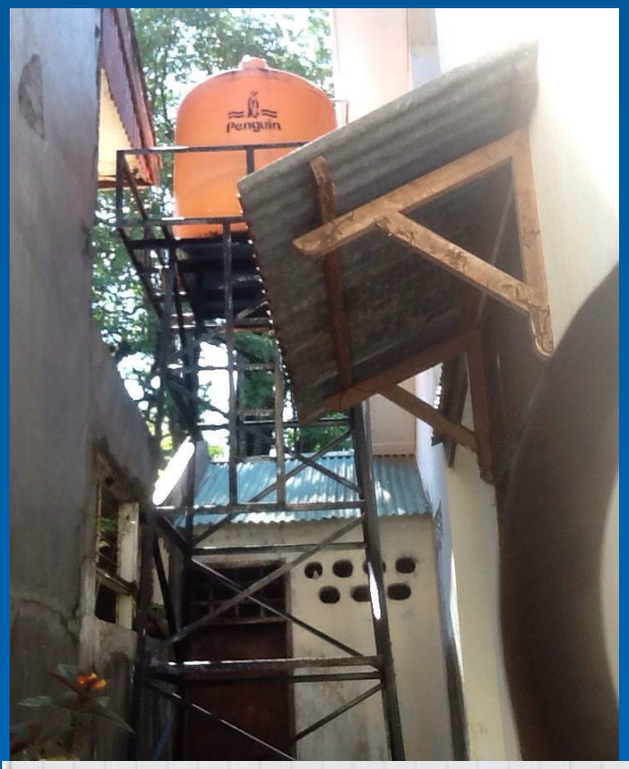
# 435D4233
# PEMODELAN dan SIMULASI
# MODUL 04C PROJECT 3
# MENARA AIR

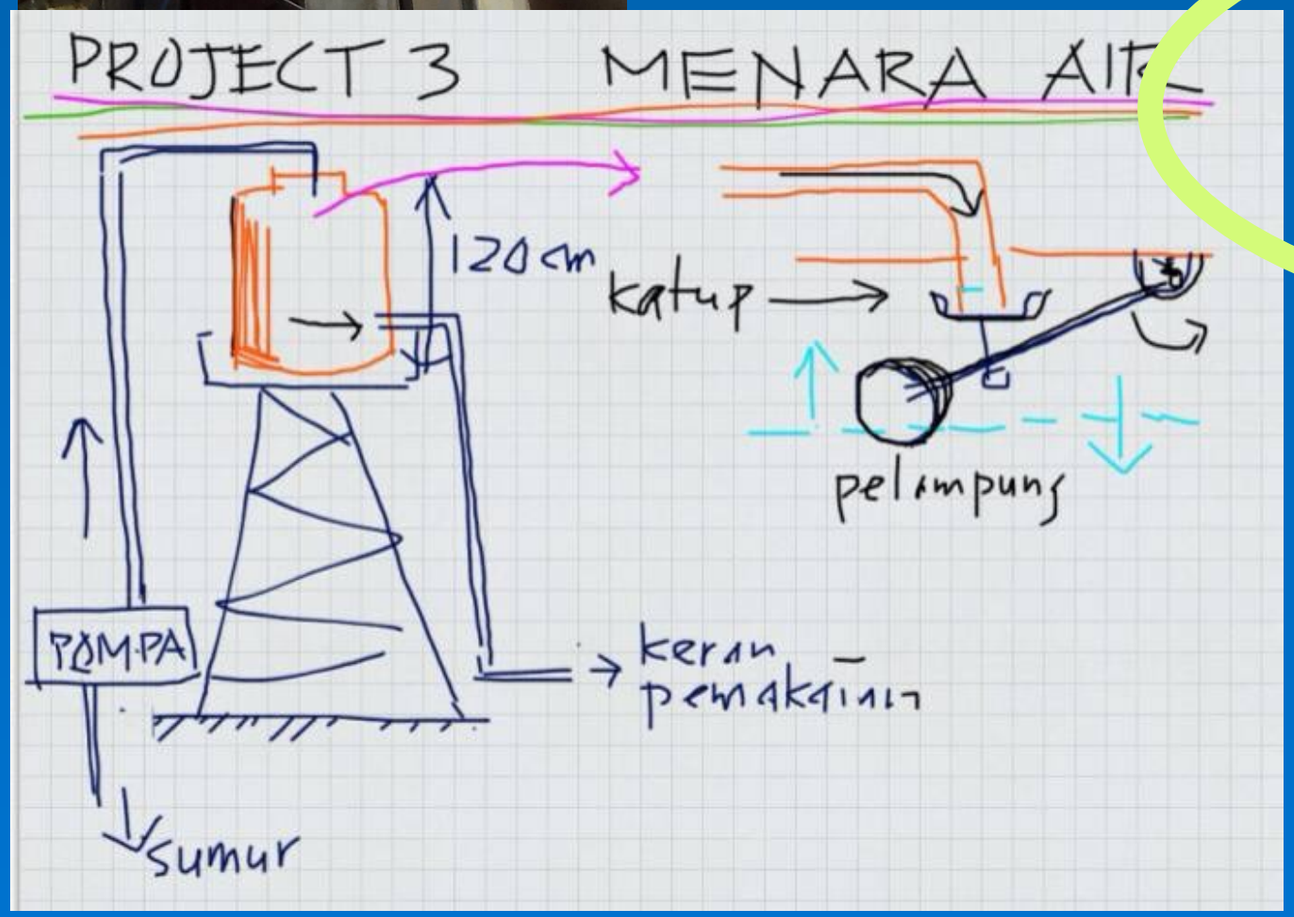
Semester Awal 2021-2022

# PROJECT 3

- Sumber pembelajaran (semua Projects): https://web.unhas.ac.id/rhiza/arsip/kuliah/Pemodelan-dan-Simulasi/dokumen_2018/
- (akan dibuat di): https://web.unhas.ac.id/rhiza/arsip/kuliah/Pemodelan-dan-Simulasi/MODE_DARLING_2021/

# PEMODELAN SISTEM



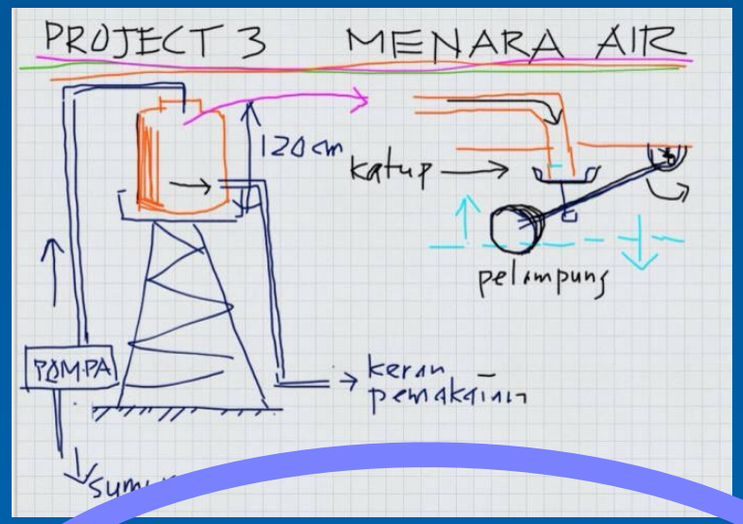

*Physical System*:
***Menara Air***

*System (Physical) Model*:
***Menara Air***

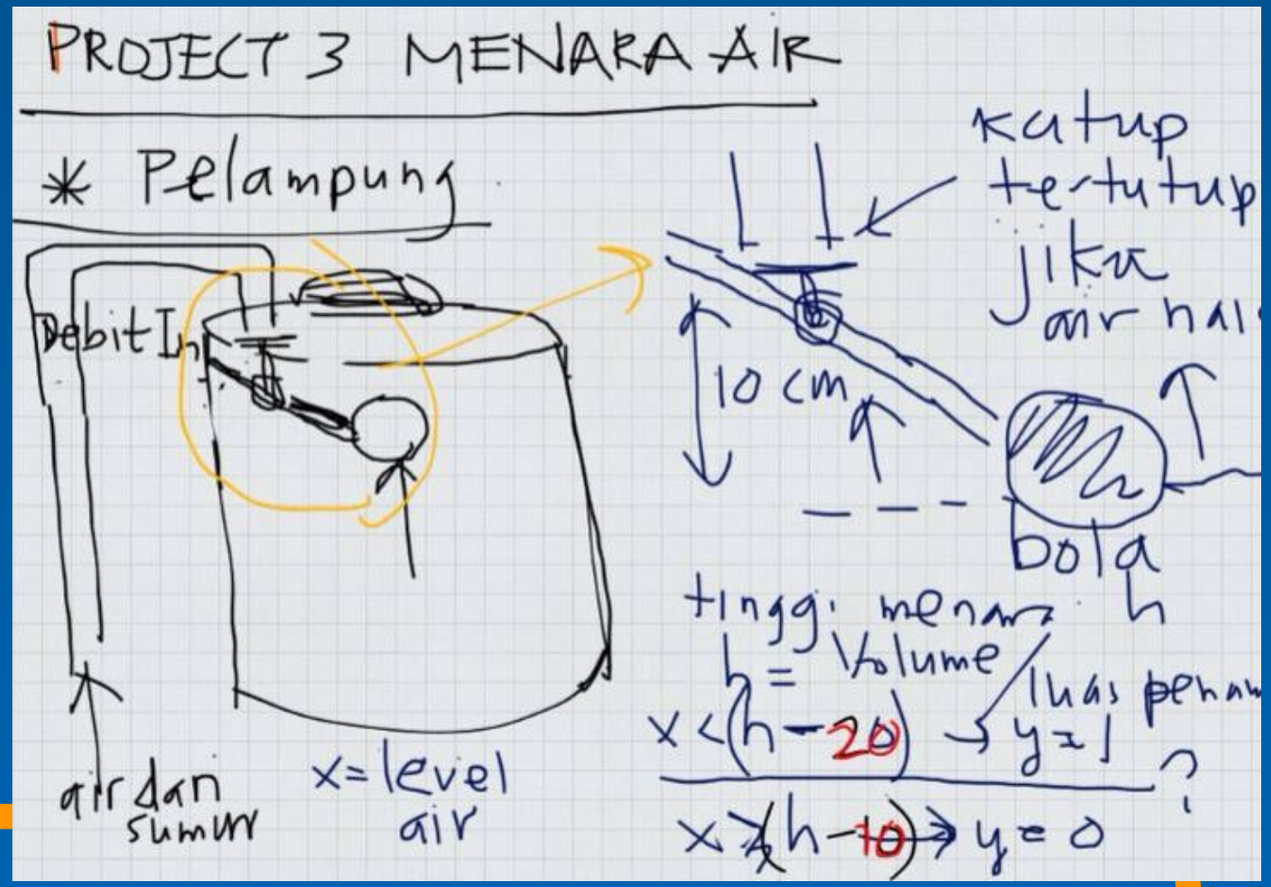
**Project 3:**
Menara Air

*Computerized Model and Simulation*:
***Simulink@MATLAB***

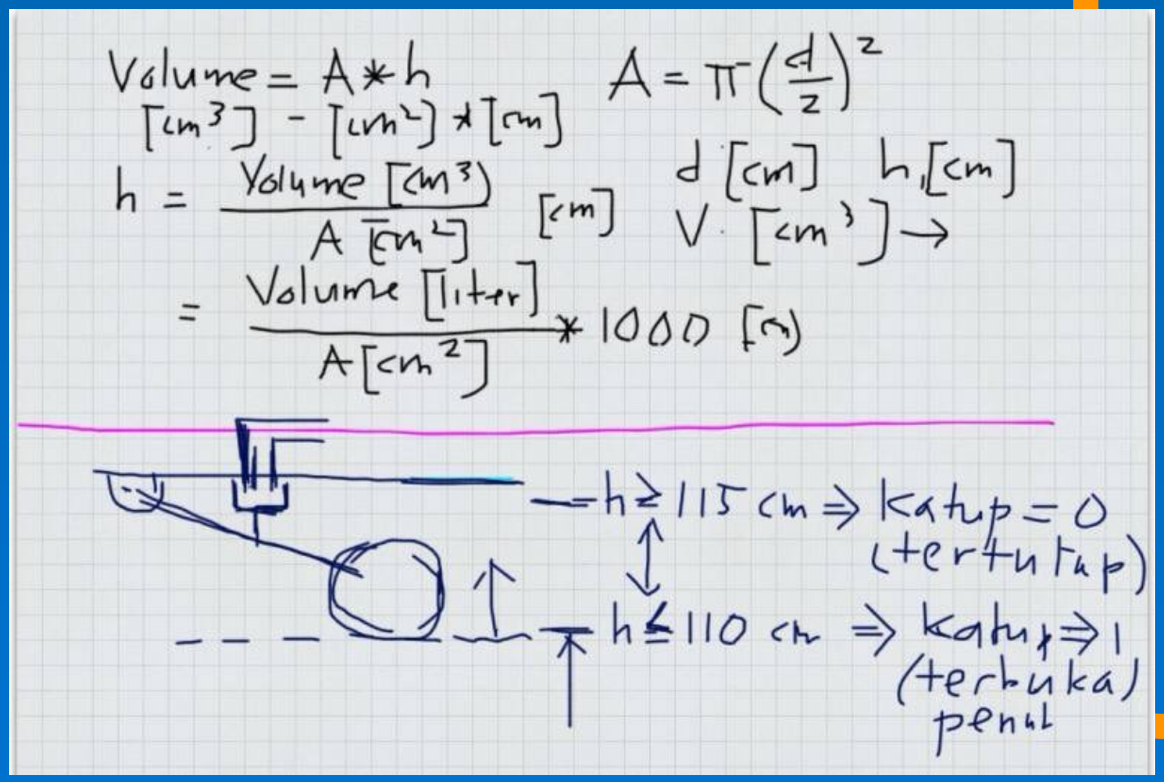
# MODEL FISIK DINAMIK:



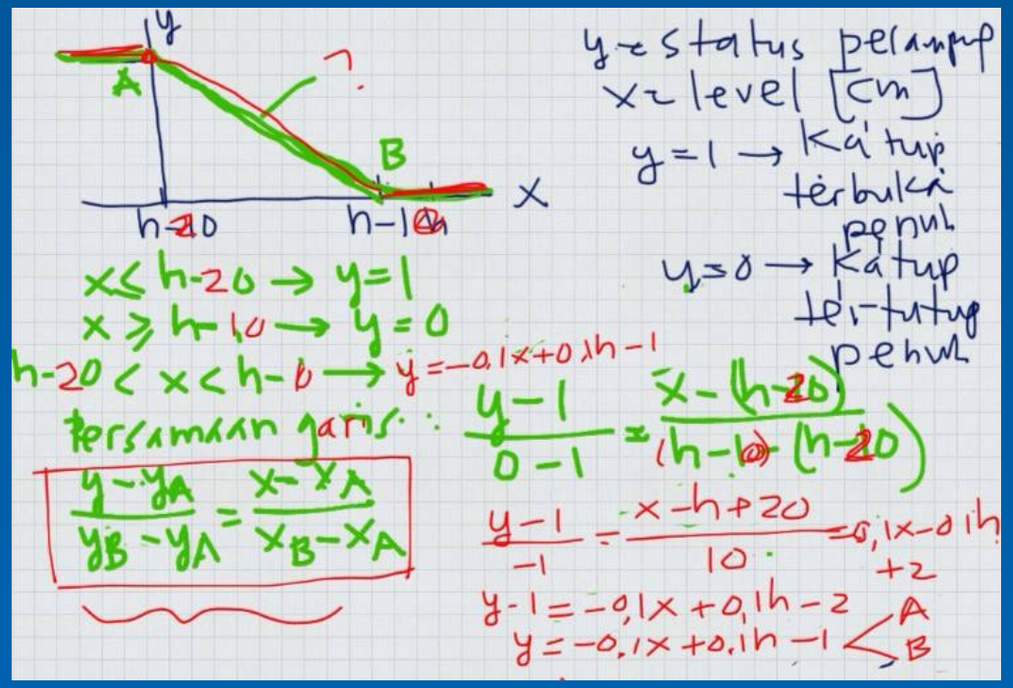

Model
MATEMATIK DINAMIK
Bagan Kotak
(*Block Diagram*)

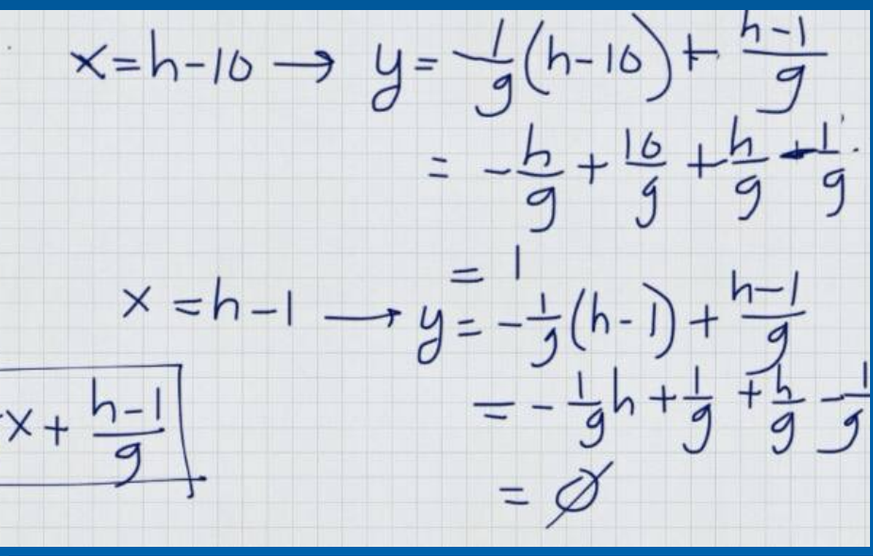


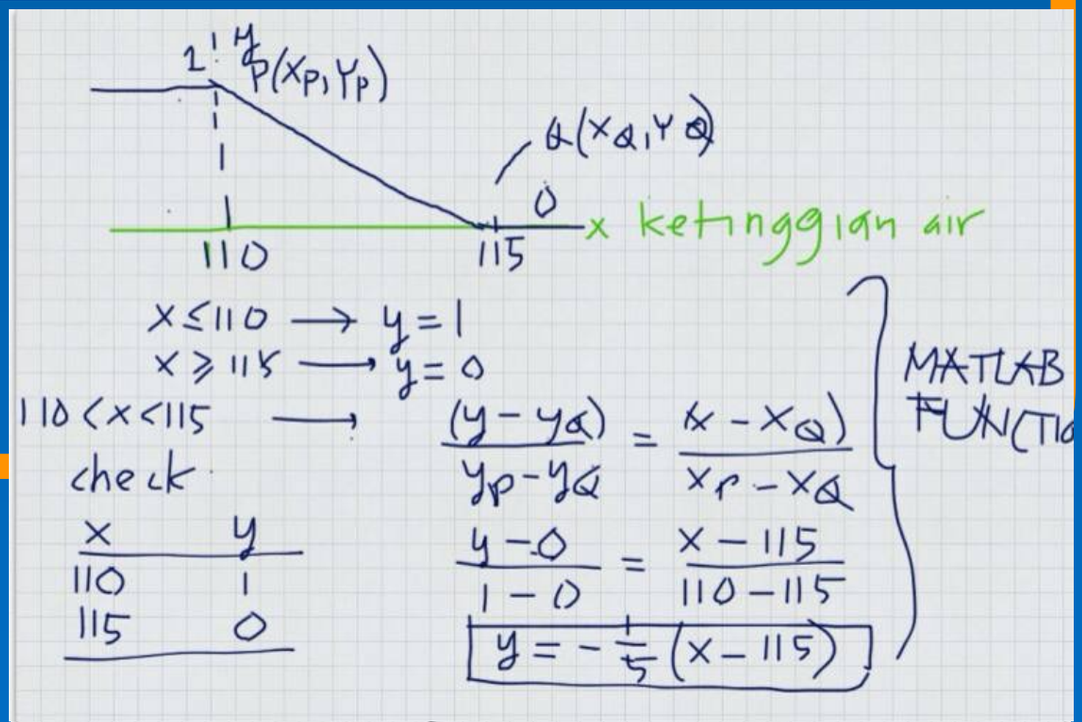

- **Tangki Air**
- **Pompa**
- **Pelampung**
- **Relay**

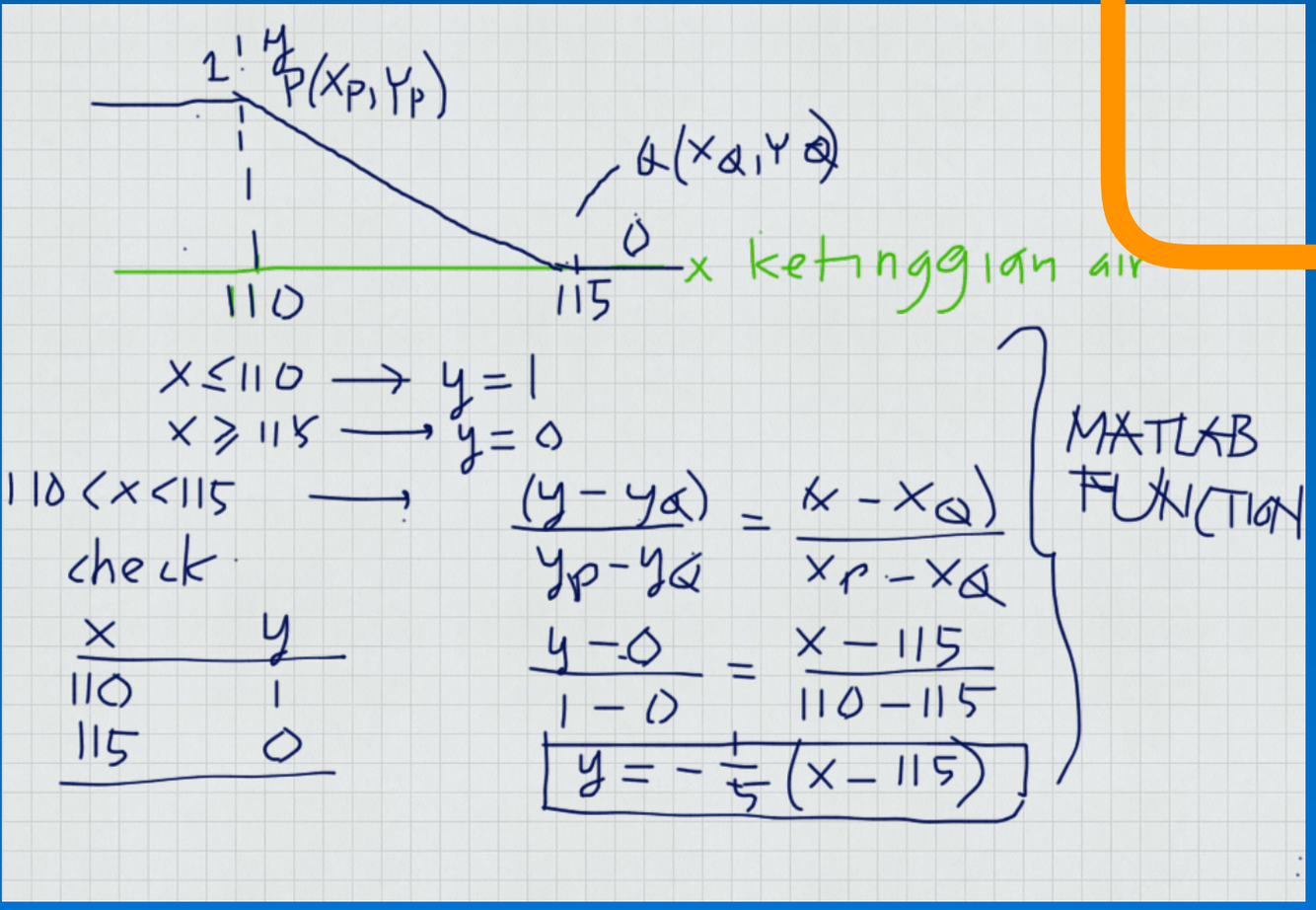


# MODEL MATEMATIK PELAMPUNG:

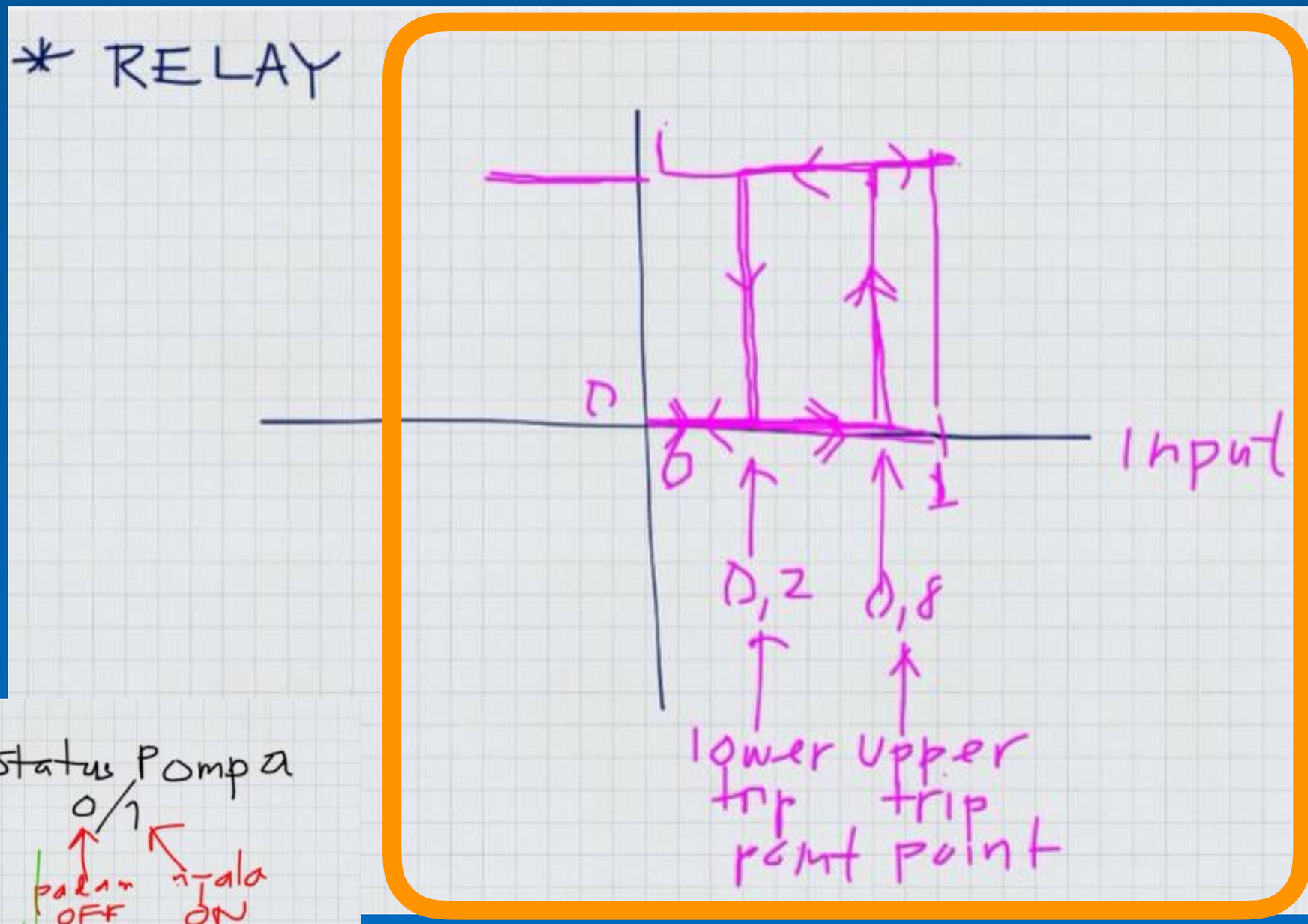


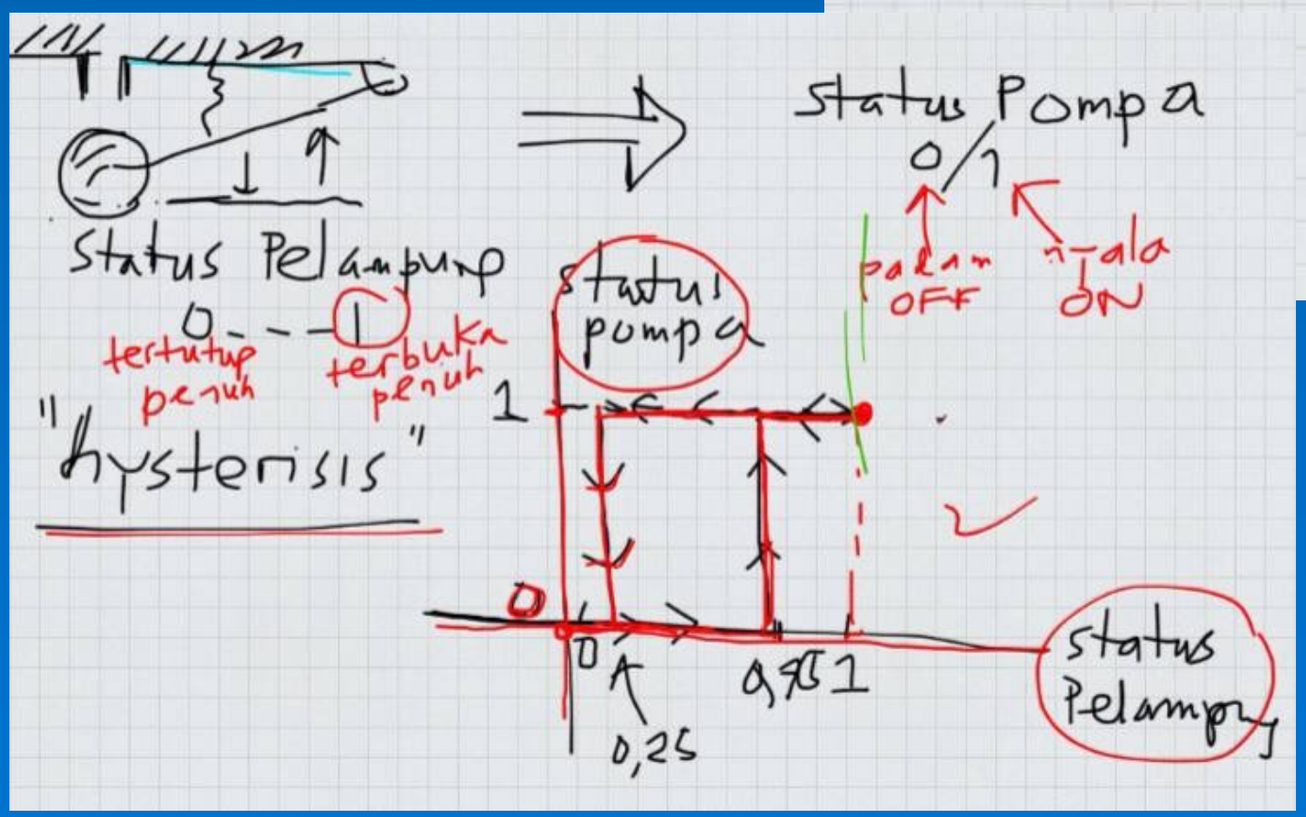



# MODEL MATEMATIK RELAY:



# PENGUKURAN FISIK di LAPANGAN

- **V** = volume **TANGKI AIR** [**liter**]
- **d** = **diameter TANGKI AIR** dalam [**cm**]
- **h** = **tinggi TANGKI AIR** dalam [**cm**], diukur atau dihitung

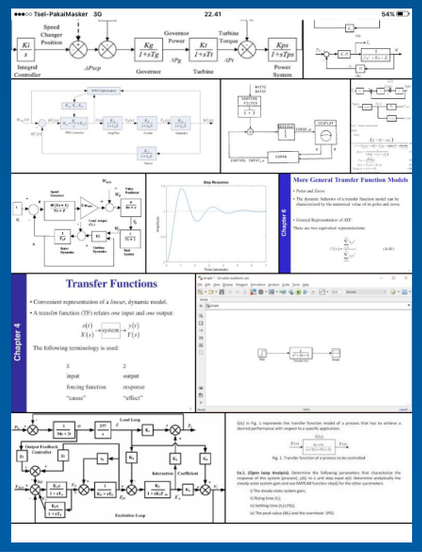
**W**aktu tunda (*delay*, **DELTA**) dalam [***second***]
**PIPA NAIK** dan **PIPA TURUN**

**D**ebit Air [**liter/second**]:

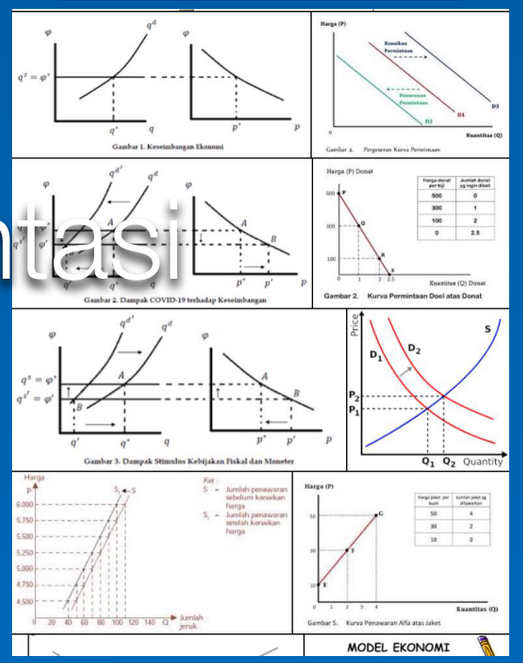
- **POMPA AIR**
- **KERAN**

**D**an Lain-Lain

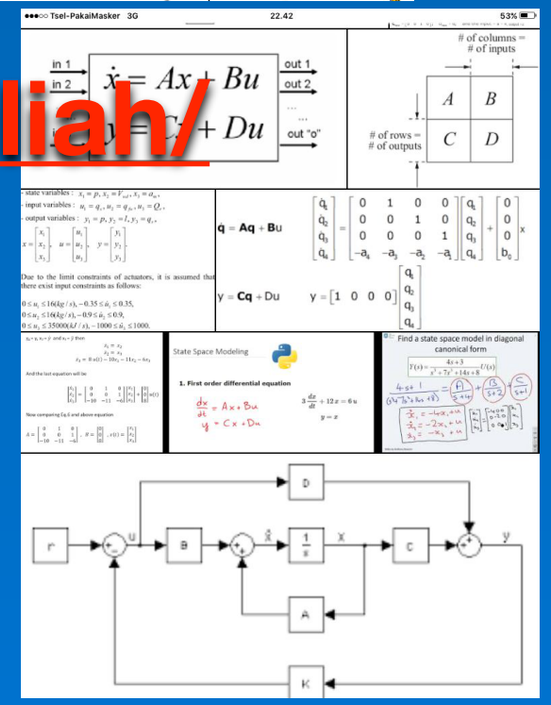
# nge-LURING !!!




Selanjutnya **Model SIMULINK** akan dibangun di kelas **LURING** ! Dokumentasi akan dapat dilihat di:




**https://web.unhas.ac.id/rhiza/arsip/kuliah/Pemodelan-dan-Simulasi/MODE_DARLING_2021/**



# MODUL SELANJUTNYA

- MODUL 01: (Pengantar/*Review*) **PEMODELAN SISTEM** (*System Modeling*)
- MODUL 02: **URGENSI PEMODELAN SISTEM**
- MODUL 03: **MACAM-MACAM MODEL SISTEM**
- MODUL 04A: **PROJECT 1** Verifikasi SIMULINK dengan RMSE
- MODUL 04B: **PROJECT 2** SISTEM SUSPENSI
- MODUL 04C: **PROJECT 3 MENARA AIR**
- **MODUL 04D: KOLAM AIR HANGAT**

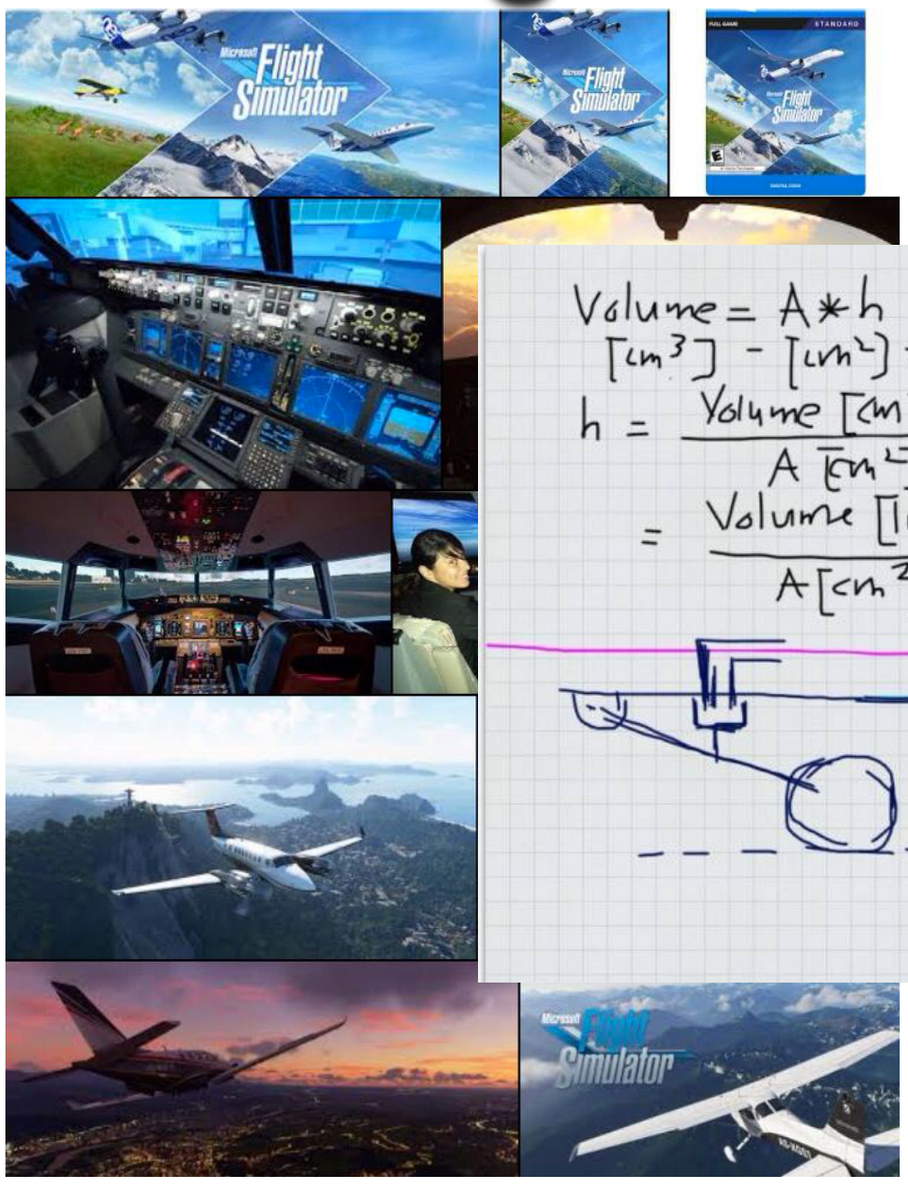
# MODUL PEMBELAJARAN 04A, B, C dan D

Tugas-tugas **SIMULASI** menggunakan model **Simulink@MATLAB**..... kita harus siap-siap me-**LURING**.

- **PROJECT 1:** VERIFIKASI SIMULINK dengan **RMSE**
- **PROJECT 2:** SISTEM SUSPENSI
- **PROJECT 3:** MENARA AIR
- **PROJECT 4: KOLAM AIR HANGAT**

# SELAMAT BELAJAR

## Semoga SUKSES meraih PRESTASI!




Volume = A * h

[cm³] - [cm²] * [cm]

$A = \pi \left(\frac{d}{2}\right)^2$

$h = \frac{\text{Volume } [cm^3]}{A\ [cm^2]}$ [cm]

d [cm] h [cm]

V [cm³] →

$= \frac{\text{Volume [liter]}}{A[cm^2]} * 1000$ [cm]