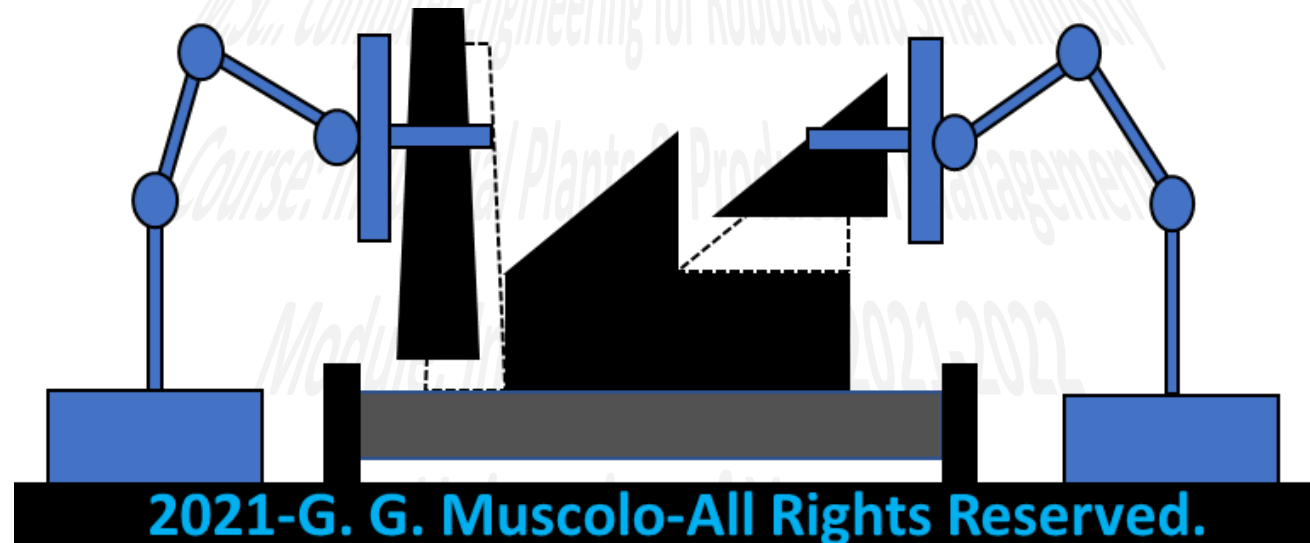




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Industrial Plants

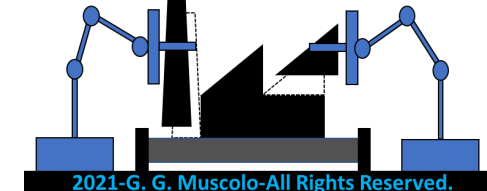
(S.S.D. ING-IND/13)

Dr. Giovanni Gerardo Muscolo

Assistant Professor in Applied Mechanics

(S.S.D.-ING-IND/13)

Email: giovannigerardo.muscolo@univr.it



Industrial Plants
(S.S.D.-ING-IND/13)

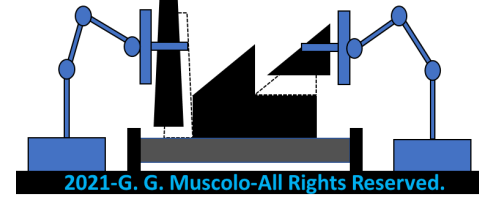


Program

- 1. Introduction and Objectives**
- 2. Fundamentals of Mechanics Applied to Industrial Plants**
3. Functional Design of Industrial Machines and Robots in a Smart Industry
4. Functional Elements of Dynamic of Machinery
5. Example of an Industrial Plant Project (IPP)



Scheme of Industrial Plants



Industrial Plants
(S.S.D.-ING-IND/13)

Example of an Industrial Plant Project
(IPP)

Introduction
and
Objectives

Functional
Elements of
Dynamic of
Machinery

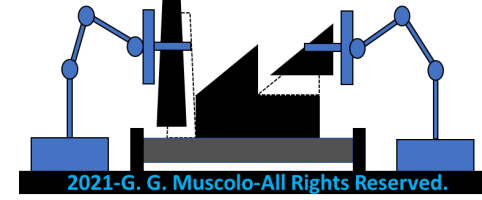
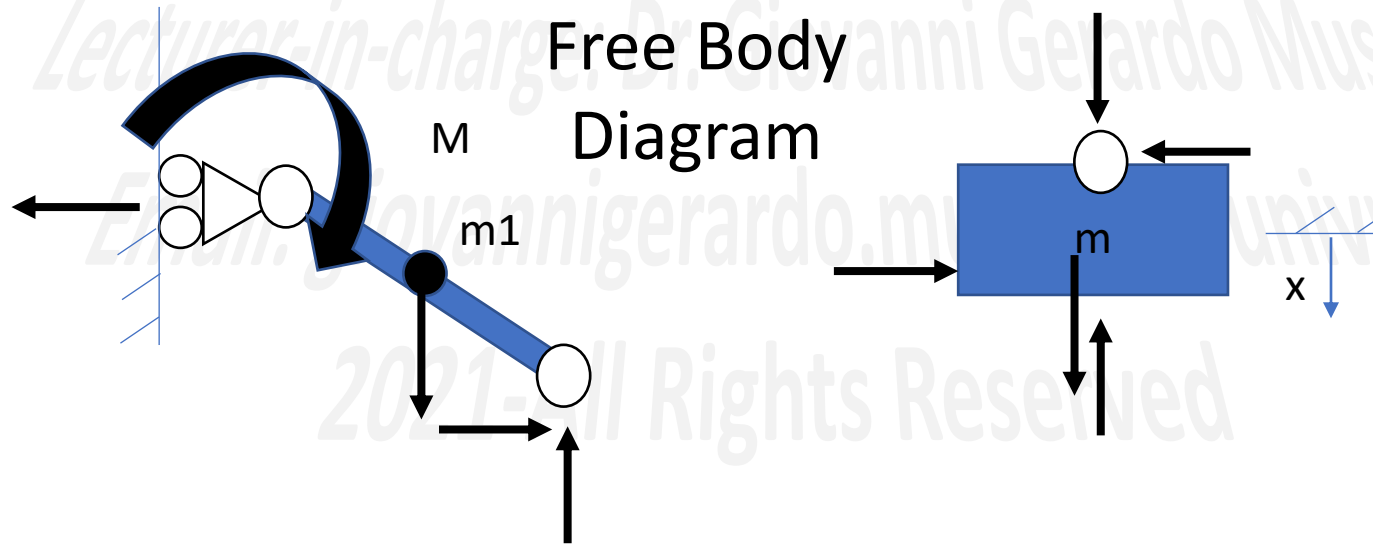
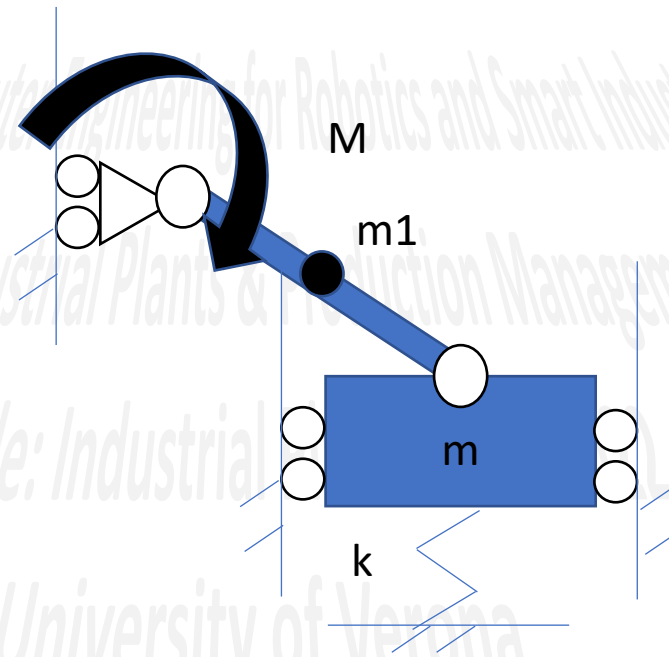
Functional
Design
of Industrial
Machines
and Robots in a
Smart Industry

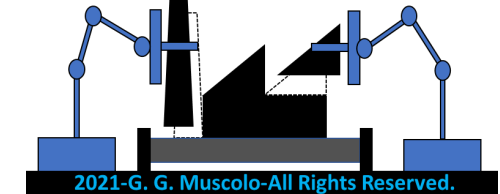
Fundamentals of Mechanics Applied to Industrial Plants



EXERCISE (dynamics):

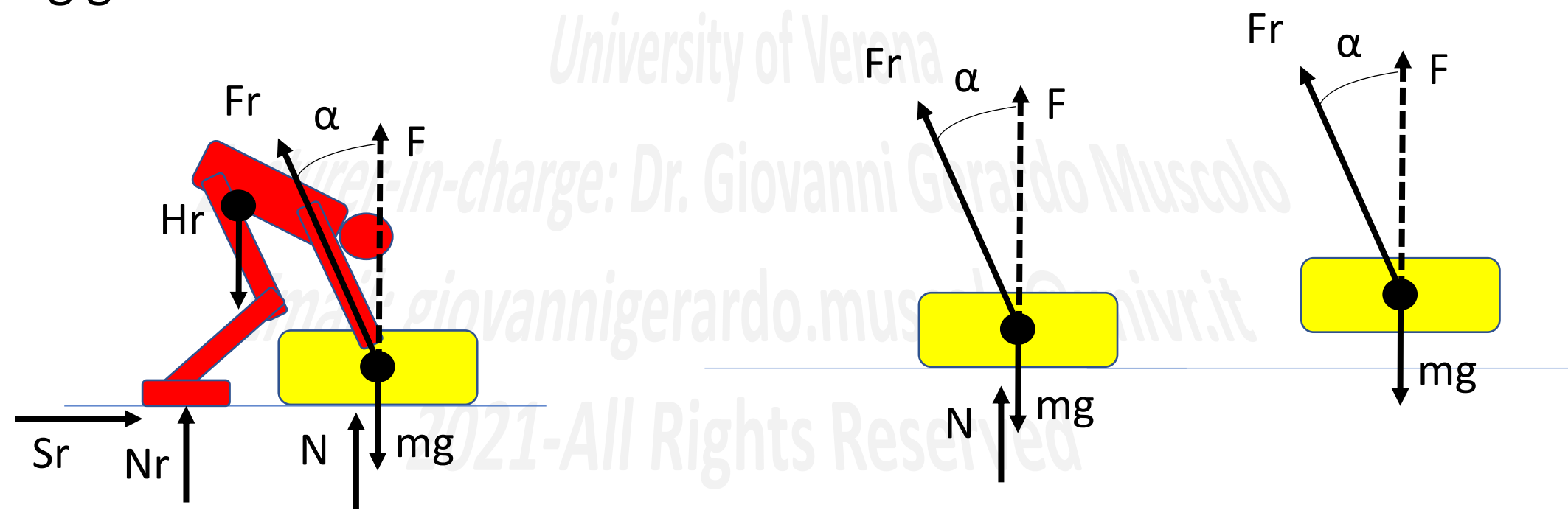
Equilibrium, Balancing
Condition





EXERCISE (dynamics):

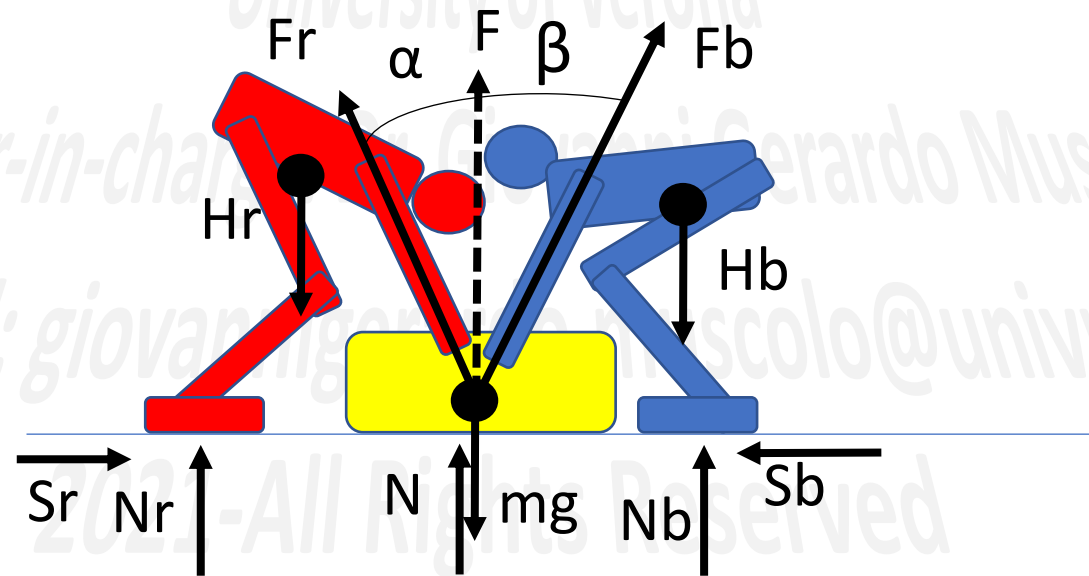
lifting goods





EXERCISE (dynamics):

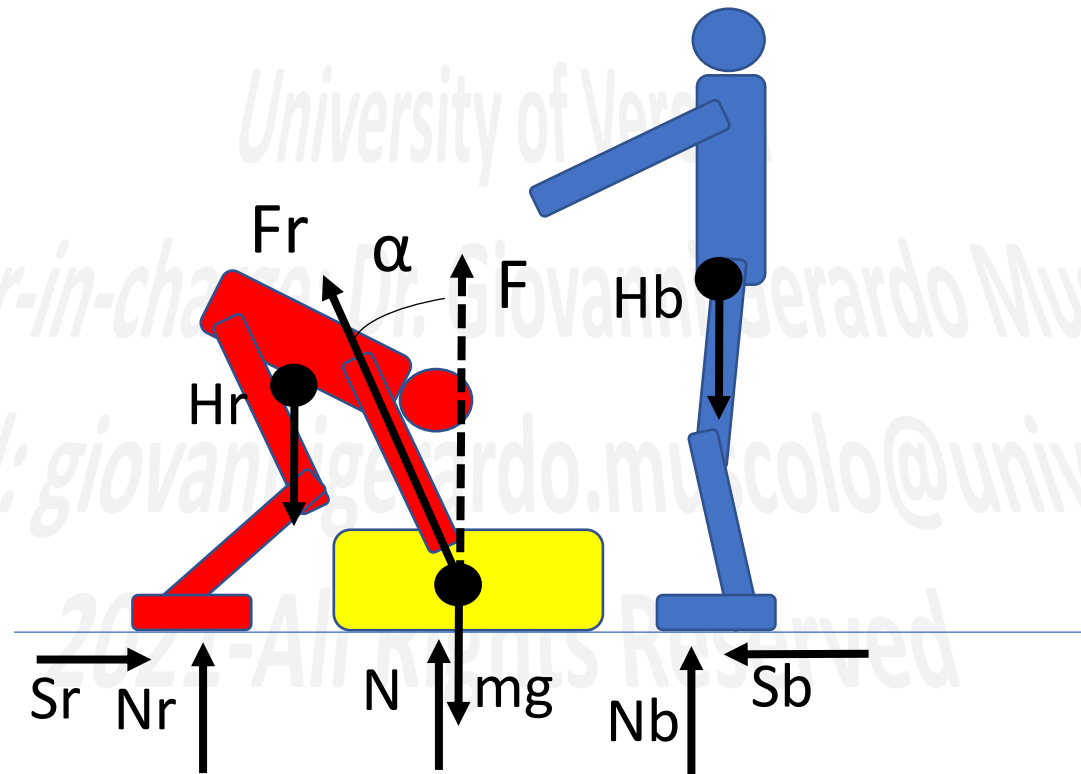
lifting goods

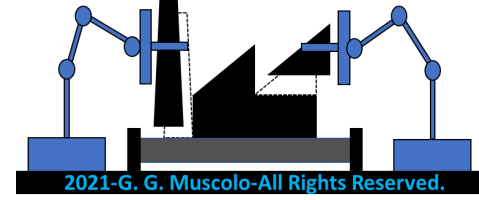




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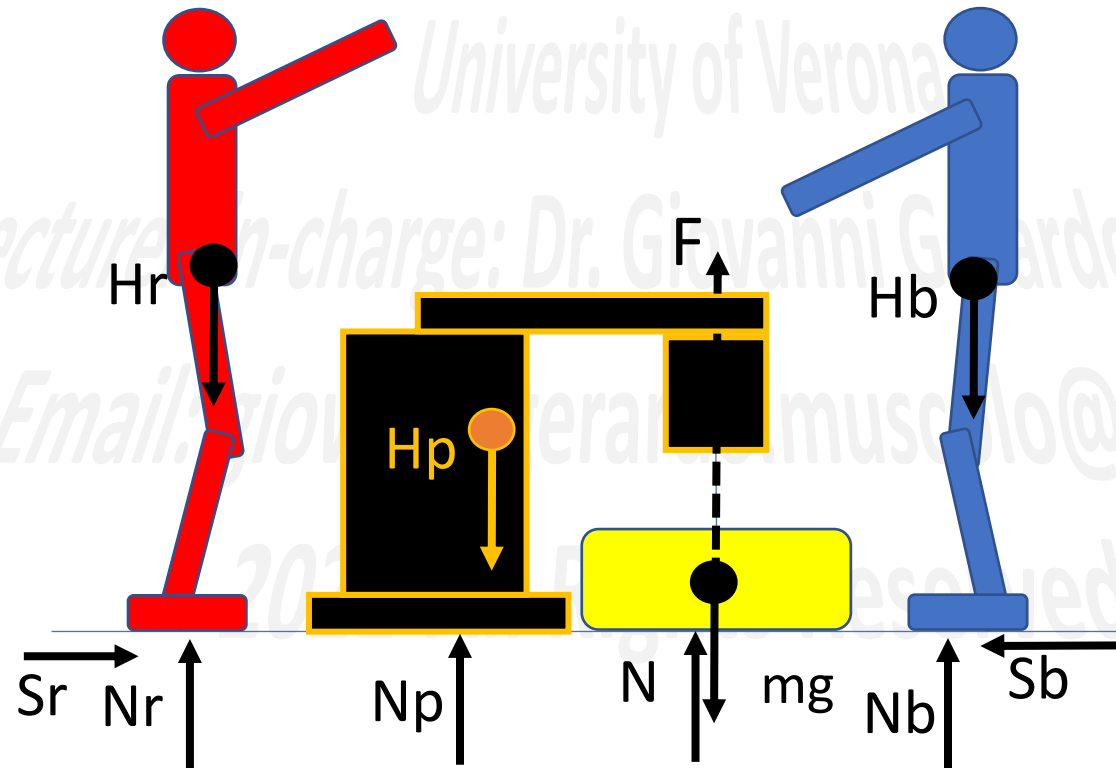
lifting goods

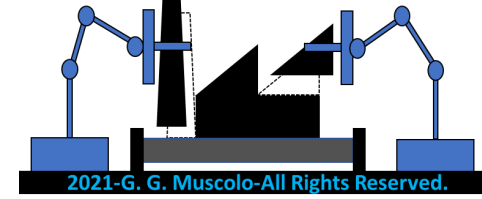
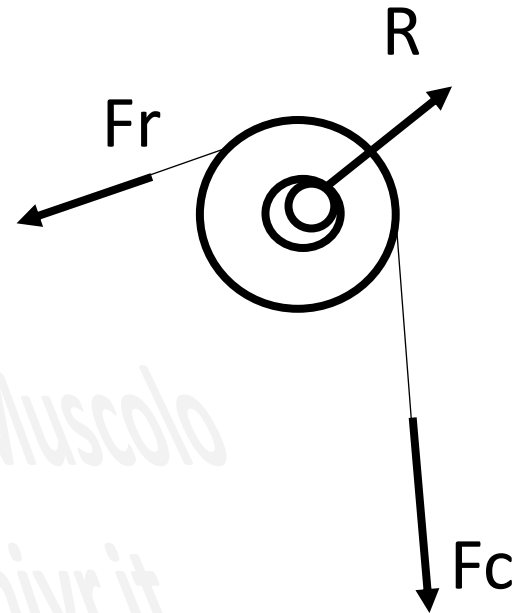
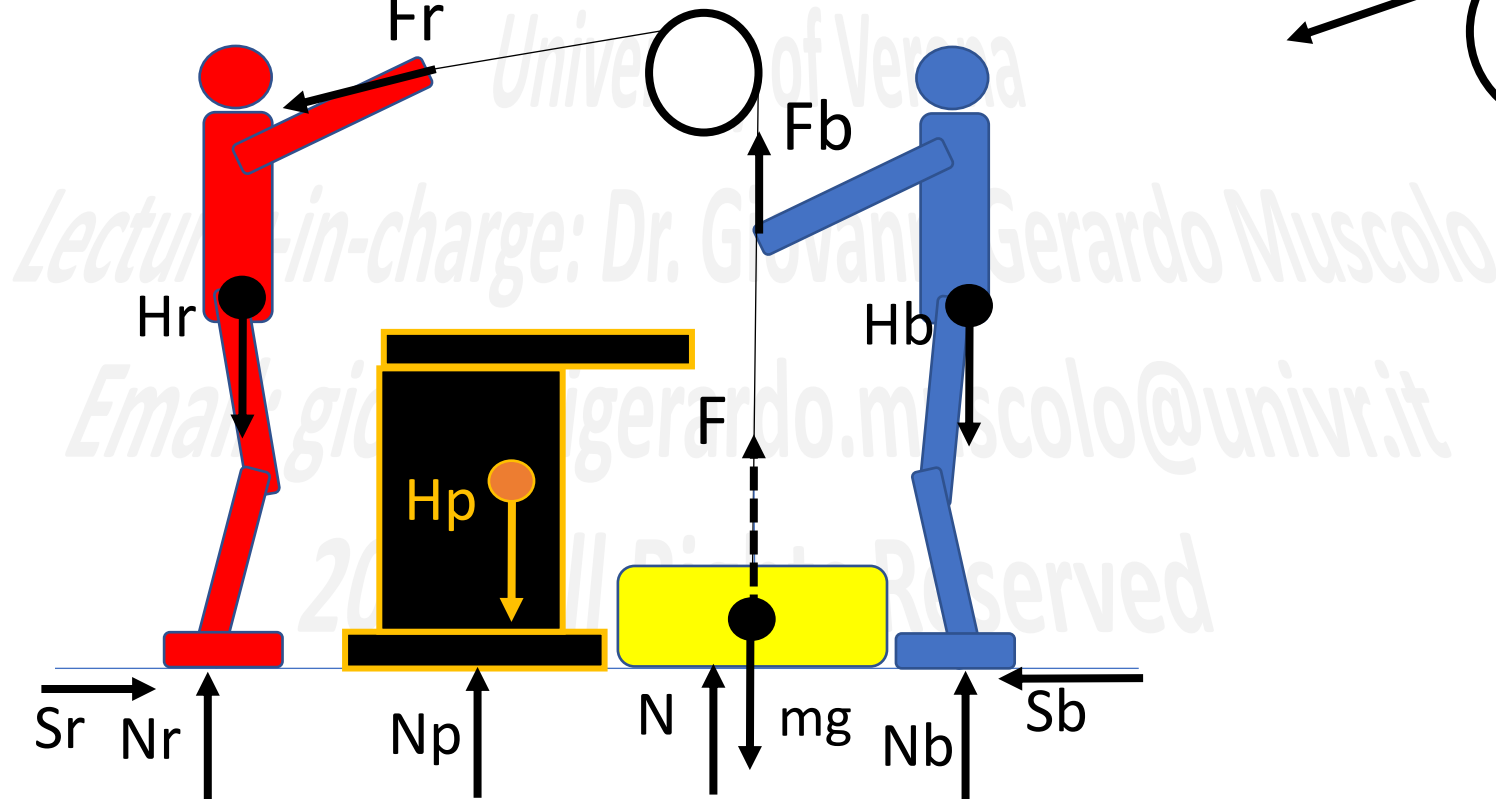




EXERCISE (dynamics):

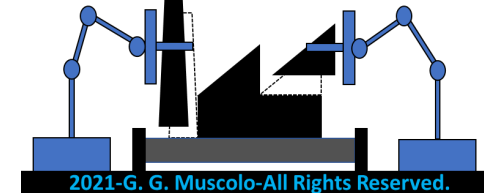
lifting goods





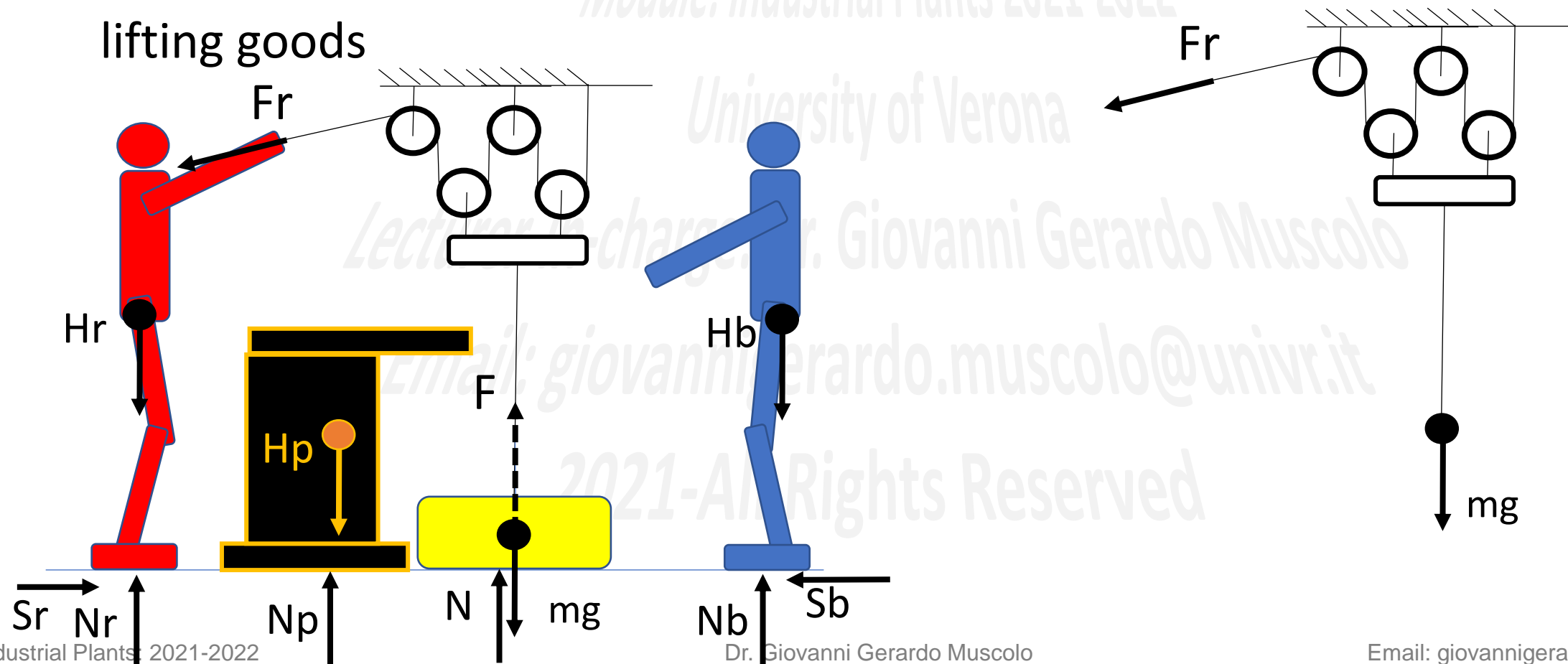
EXERCISE (dynamics):

lifting goods



EXERCISE (dynamics):

lifting goods

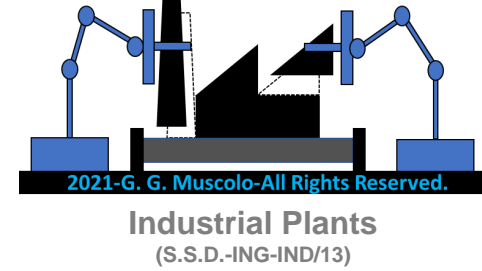
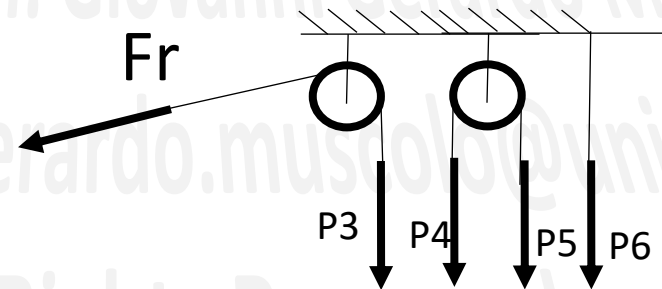
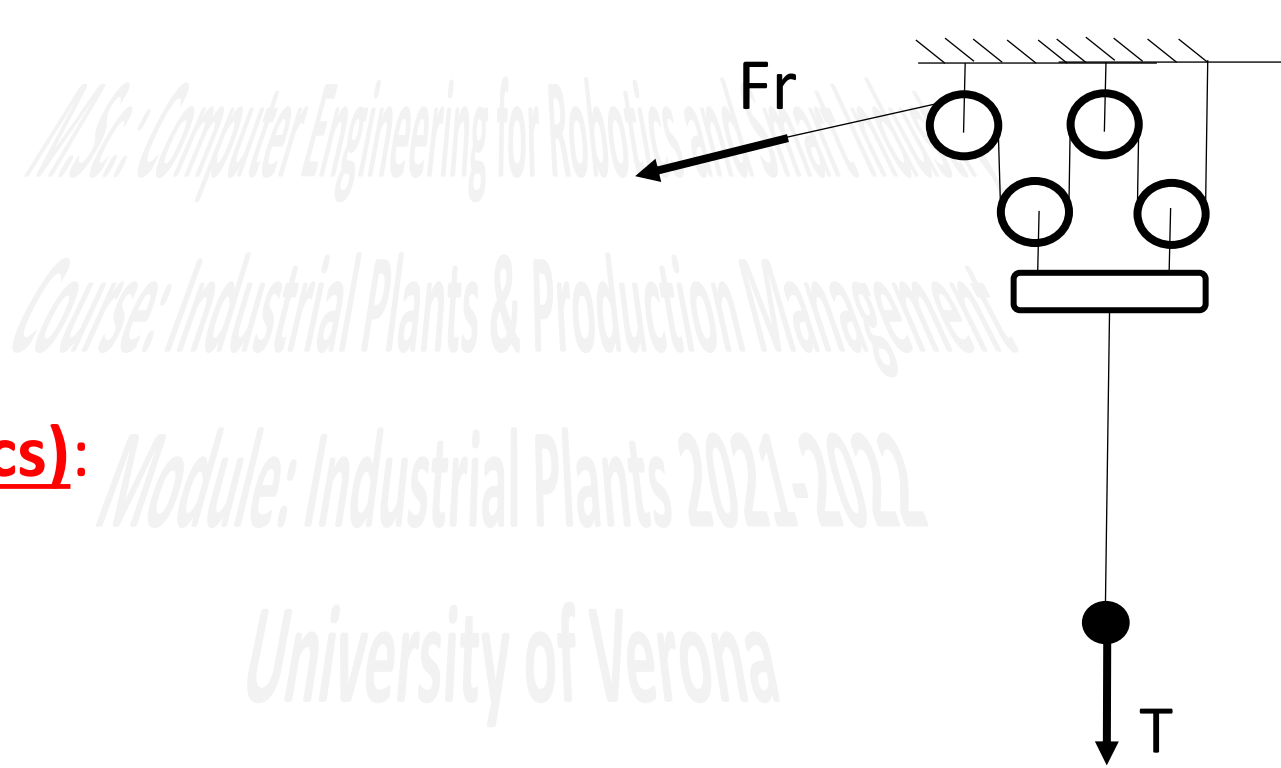




EXERCISE (dynamics):

lifting goods

$$P_4 = P_5 = P_6 = P_3 = F_r;$$



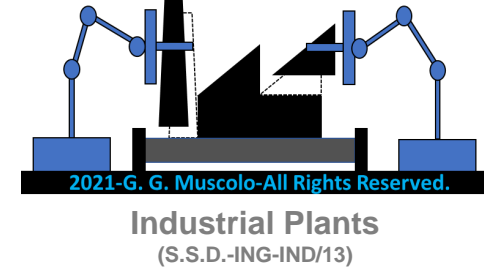
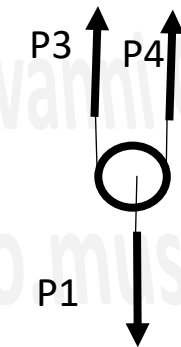
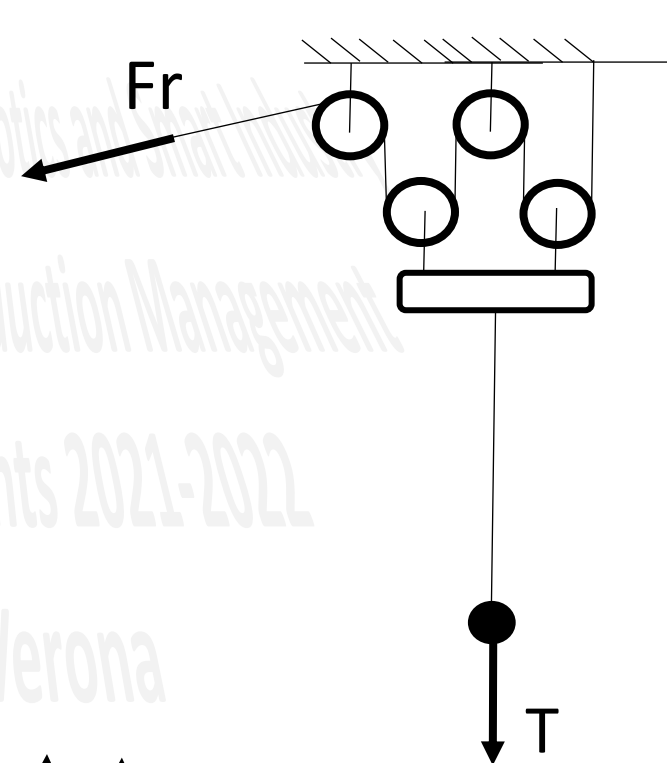


M.Sc.: Computer Engineering for Robotics and Smart Industries
Course: Industrial Plants & Production Management
Module: Industrial Plants 2021-2022
University of Verona
Lecturer-in-charge: Dr. Giovanni Gerardo Muscolo
Email: giovannigerardo.muscolo@univr.it
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EXERCISE (dynamics):

lifting goods

$$P1 = P3 + P4 = 2Fr;$$



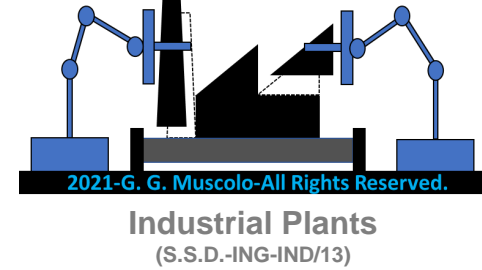
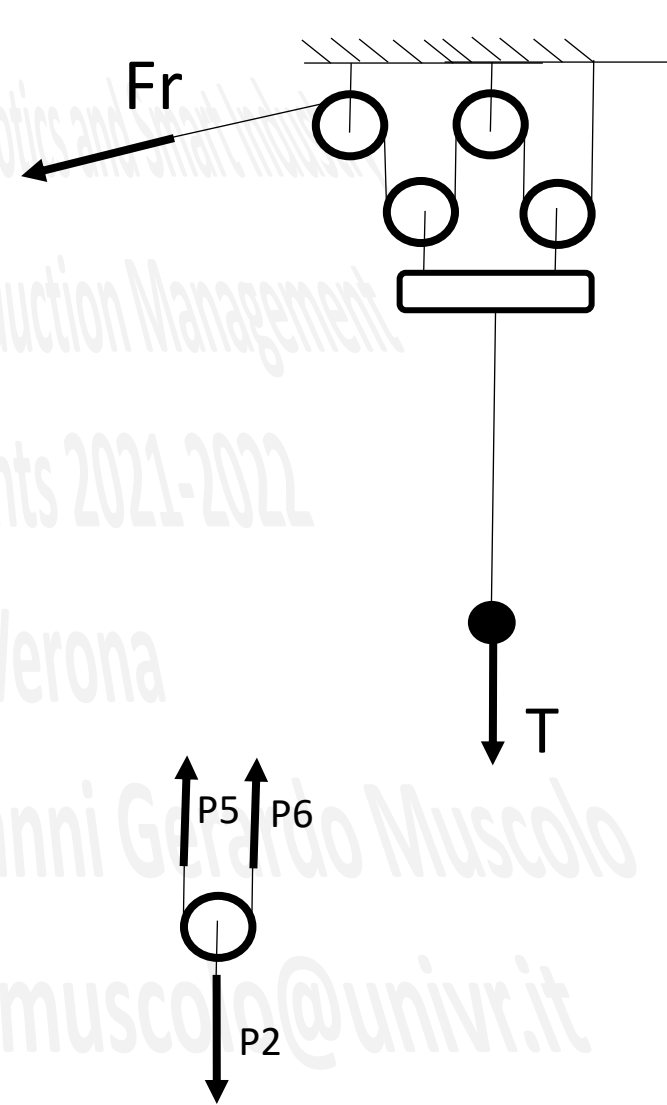


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EXERCISE (dynamics):

lifting goods

$$P2 = P5 + P6 = 2Fr;$$



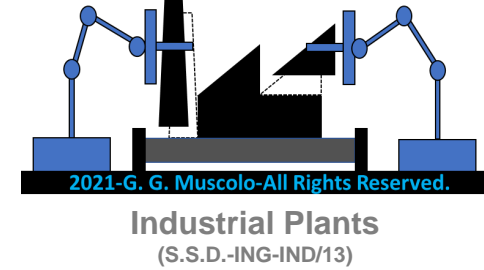
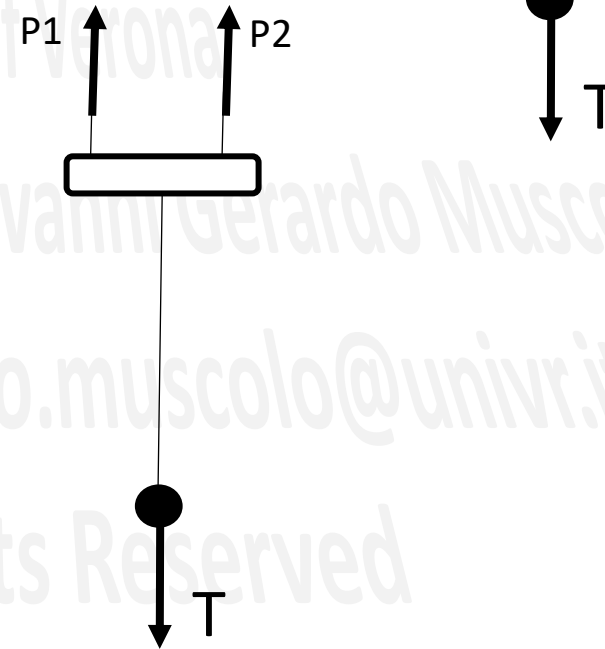
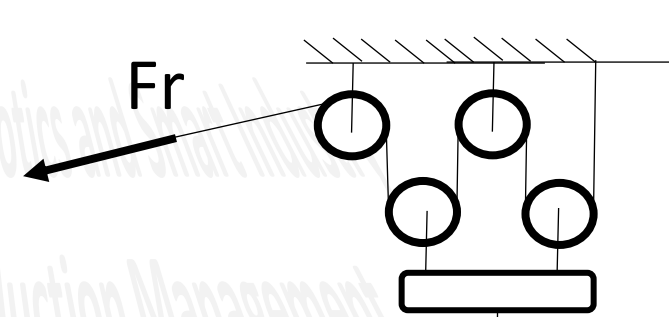


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EXERCISE (dynamics):

lifting goods

$$T = P1 + P2 = 4Fr;$$





EXERCISE (dynamics):

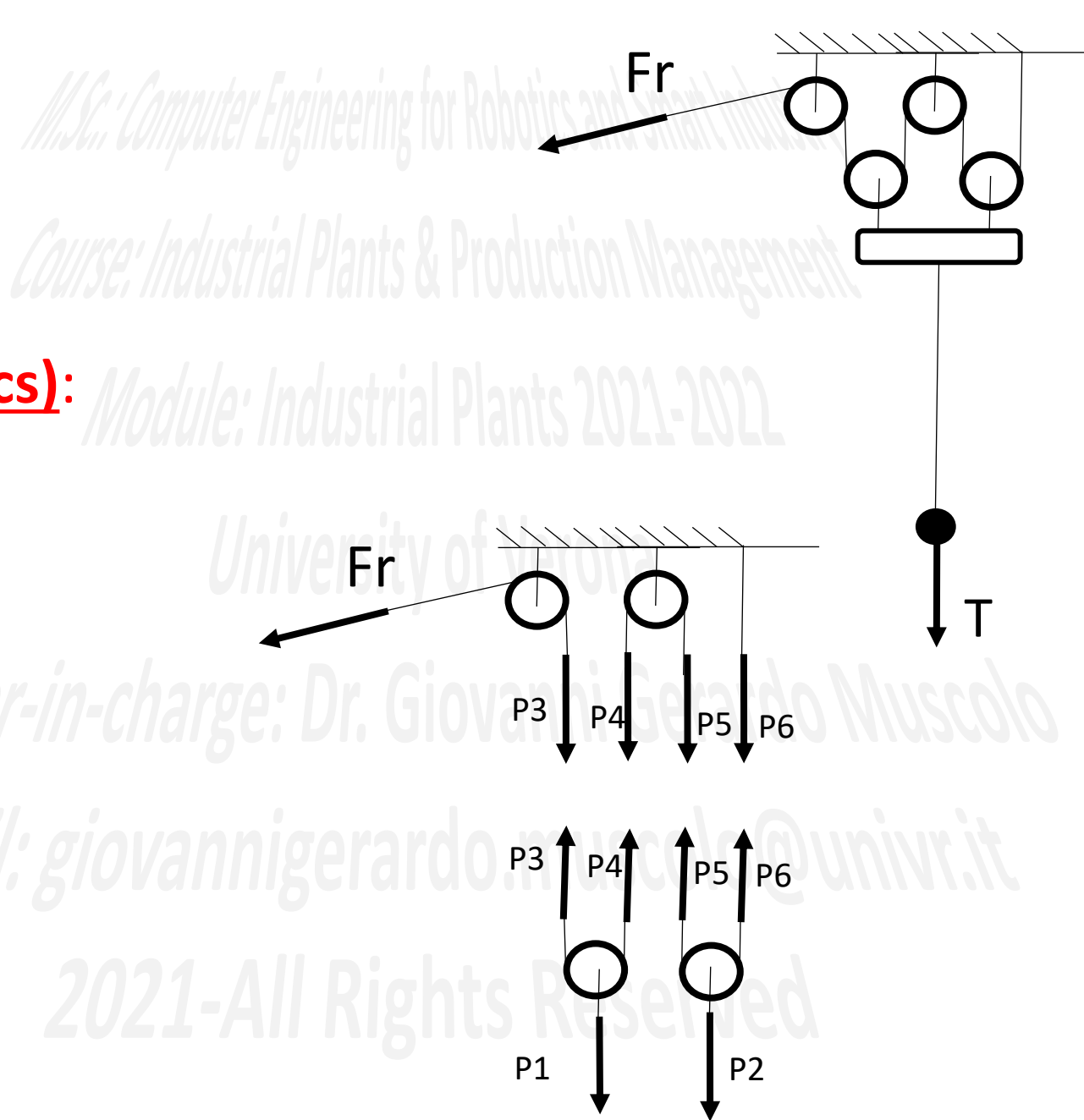
lifting goods

$$P_4 = P_5 = P_6 = P_3 = Fr;$$

$$P_1 = P_3 + P_4 = 2Fr;$$

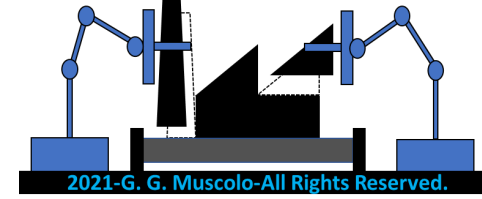
$$P_2 = P_5 + P_6 = 2Fr;$$

$$T = P_1 + P_2 = 4Fr;$$





Scheme of Industrial Plants



Industrial Plants
(S.S.D.-ING-IND/13)

Example of an Industrial Plant Project
(IPP)

Introduction
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Functional
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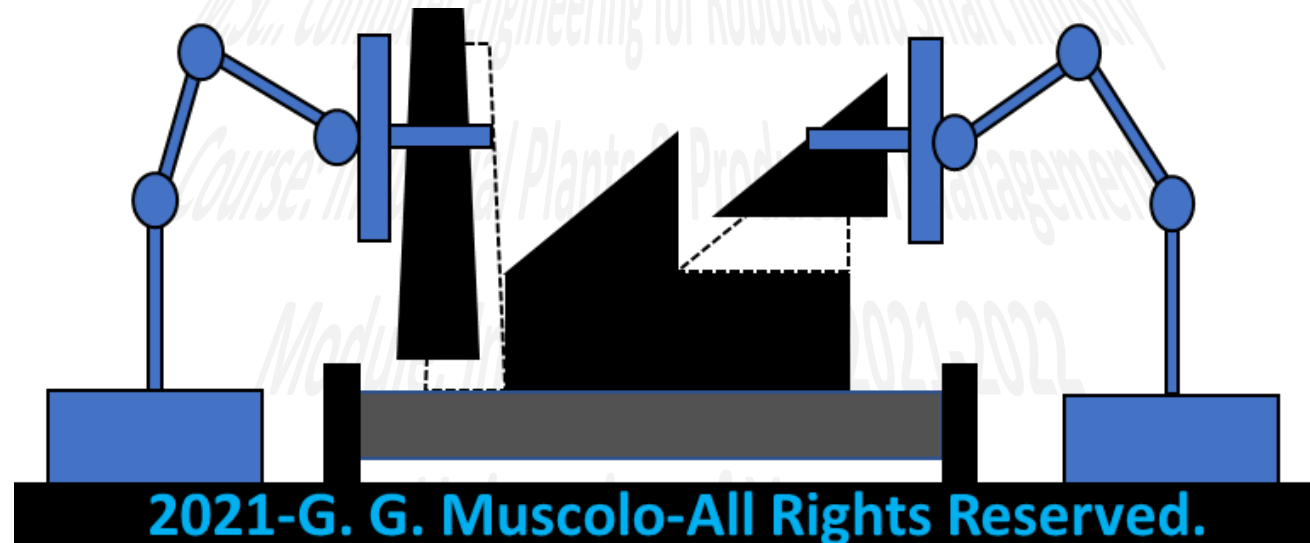
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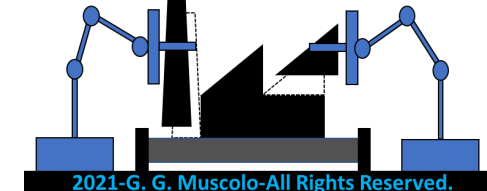
(S.S.D. ING-IND/13)

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