

## Introduction

Group 9

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### 1. Problem statement

A. There are few negative pressure units for patients with mental illness

- a. Paragraph explaining why it is important to build negative pressure units for patients with mental illness

### 2. Background information of a negative pressure unit (NPU)

A. Paragraph explaining concept and principle of a negative pressure unit

### 3. Design plan

A. After clarifying the problem statement, the team began the process of designing

a. Paragraph describing the overall approach to the design

- i Work breakdown structure (WBS)

- ii Objectives and constraints

- iii Defining functions and means

- iv Creating and evaluating design alternative

B. The work breakdown structure (WBS) consists of the tasks for the design process and their deadlines

C. In order to implement the design, the team needed to define objectives and constraints

a. Paragraph defining objectives

- i Objectives are things one wants the design to achieve

- ii List of ranked objectives
  - b. Paragraph of organization of objectives
    - i Objectives sorted into three categories: treatment for mental illness, safe place and treatment, immediate response
    - ii Objectives divided into subobjectives
    - iii Listing of subobjectives
    - iv Objectives tree
  - c. Paragraph on evaluating objectives using metrics
  - d. Paragraph defining constraints
    - i Constraints are limits on the design
    - ii List of constraints and description
- 3. Design research
  - A. Find devices currently available
    - a. Paragraph explaining a morphological chart: function and means
  - B. Evaluation of these models for suitability in this project
    - a. Paragraph explaining if it conforms to objectives
    - b. Paragraph explaining if it keeps the constraints
- 4. Description and evaluation of design alternatives
  - A. Details and drawings of each alternative
    - a. Paragraph explaining details
    - b. Drawings of each alternative
  - B. Metrics for choosing between designs
    - a. Paragraph of metrics for choosing
      - i List used metrics
      - ii Reason why use these metrics
    - b. Rank all the designs with metrics
      - i Chart of the designs which are ranked

5. Final design

A. Detailed description of chosen alternative

a. Paragraph on concept

B. Description of prototype and how it works

a. Paragraph explaining prototype of the design

b. Paragraph of principle of the design

6. Works cited

A. Writing reference literature

Appendix: Work breakdown structure