

**DESIGN OF SPECIAL CHAIR FOR SCOLIOSIS STUDENTS  
IN UNIVERSITAS ANDALAS CLASSROOM**

**FINAL PROJECT**

*As requirement for finishing the Degree Program in Industrial Engineering  
Department, Faculty of Engineering, University of Andalas*

**by :**

**NIDIA ERIKA FITRI**  
**1510931013**

**Adviser:**

**Dr. Eng. Desto Jumeno**



**INDUSTRIAL ENGINEERING DEPARTMENT  
ENGINEERING FACULTY  
ANDALAS UNIVERSITY  
PADANG  
2019**

## ABSTRACT

People with scoliosis is included in the category of people with disabilities. Disabled people such as scoliosis sufferers also have the right to be health, so they can develop their abilities. But, people with scoliosis get tired faster when sitting too long compared to people in general. Scoliosis students must study for 1.5 to 2 hours for one course and can take 3-5 courses in one day. Scoliosis sufferer student as disabled people, have the right to get special facilities. People with walking disability have been helped in Universitas Andalas by ram and pedestrian, but special facilities for students with scoliosis has not provide yet. Furthermore, initial survey that conducted on five six scoliosis students resulted that they need special chair for sitting in the classroom. The research objectives to evaluate current chair in the class room and designing special for scoliosis student that make them more comfortable to sit in longer time.

The design of special chair conduted by a series of steps. The step to evaluate current chair and prototype was using de Looze model and designing special chair was using Ergonomic Function Deployment method. Evaluation of the current class chair resulted complains about respondents' body part. Seven among nine parts of body have been complained by all of respondents and this depicted uncomfortable level of respondents. Preliminary interview and classroom chair evaluations have resulted 10 customer requirements which translated into 12 technical requirements. Alternative designs of special chair were chosen by using morphological chart, screening process and selecting concept process. Among three alternatives, alternative 1 with convex backrest has been selected. The prototype of special chair with convex backrest has been produced and evaluated by scoliosis students. Although it still resulted complains, comfort level of each respondent increase significantly.

**Keywords:** *Scoliosis, Comfort, EFD, Special Chair.*