



# NORTHERN ARIZONA UNIVERSITY

## THE HOPE DEVICE



PRESENTED BY:

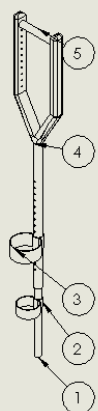
SULTAN ALAJMI, ABDULRAHMAN ALMUQRIN, ALI ALQURAISHI, MOHAMMAD HESHAM

# Project Description

- The hope project is about a device which is designed for specific people who are not able to move their bottom parts ( legs ) However they still able to use their hands. The device will help them walk with less efforts by using their hands.
- Our stakeholders who also happened to be the primary sponsors are :
- Dr. Sarah Oman.
- The Mechanical Engineering Department.

# Design Description

## Hand Gripped Crutch

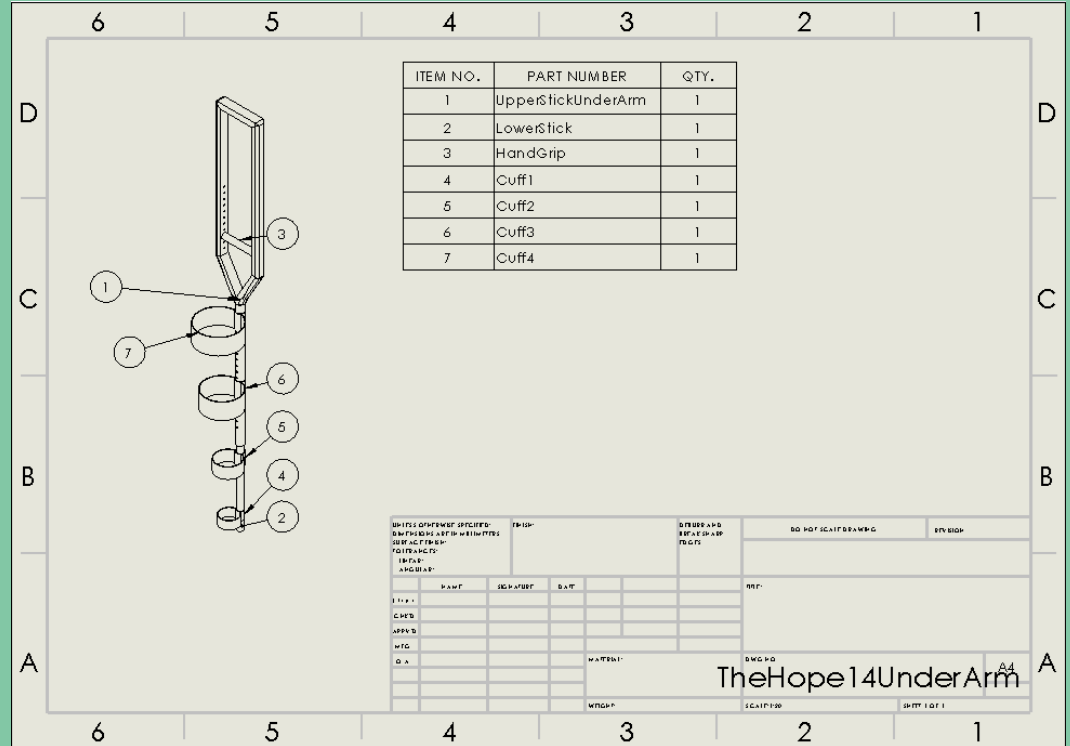


ITEM NO.	PART NUMBER	QTY.
1	LowerStick	1
2	Cuff1	1
3	Cuff2	1
4	UpperStickHandGriped	1
5	HandGrip	1

UNLESS OTHERWISE SPECIFIED:			INCH:	DEBurr AND	DO NOT SCALE DRAWING	REVISION
DIMENSIONS ARE MAXIMUMS				DEBurr SHARP		
SURFACE FINISH:				EDGES		
TOLERANCES:						
UNITS:						
ASSEMBLY:						
DESIGN	NAME	SIGNATURE	DATE			TITLE:
CHKD						
APP'D						
MTC						
QA						
				MATERIAL:		DWG. NO.
						TheHope14#Hand
				WHERE:		SCALE: 1:1
						SHEET 1 OF 1

# Design Description

## Underarm Crutch



# Design Implementation

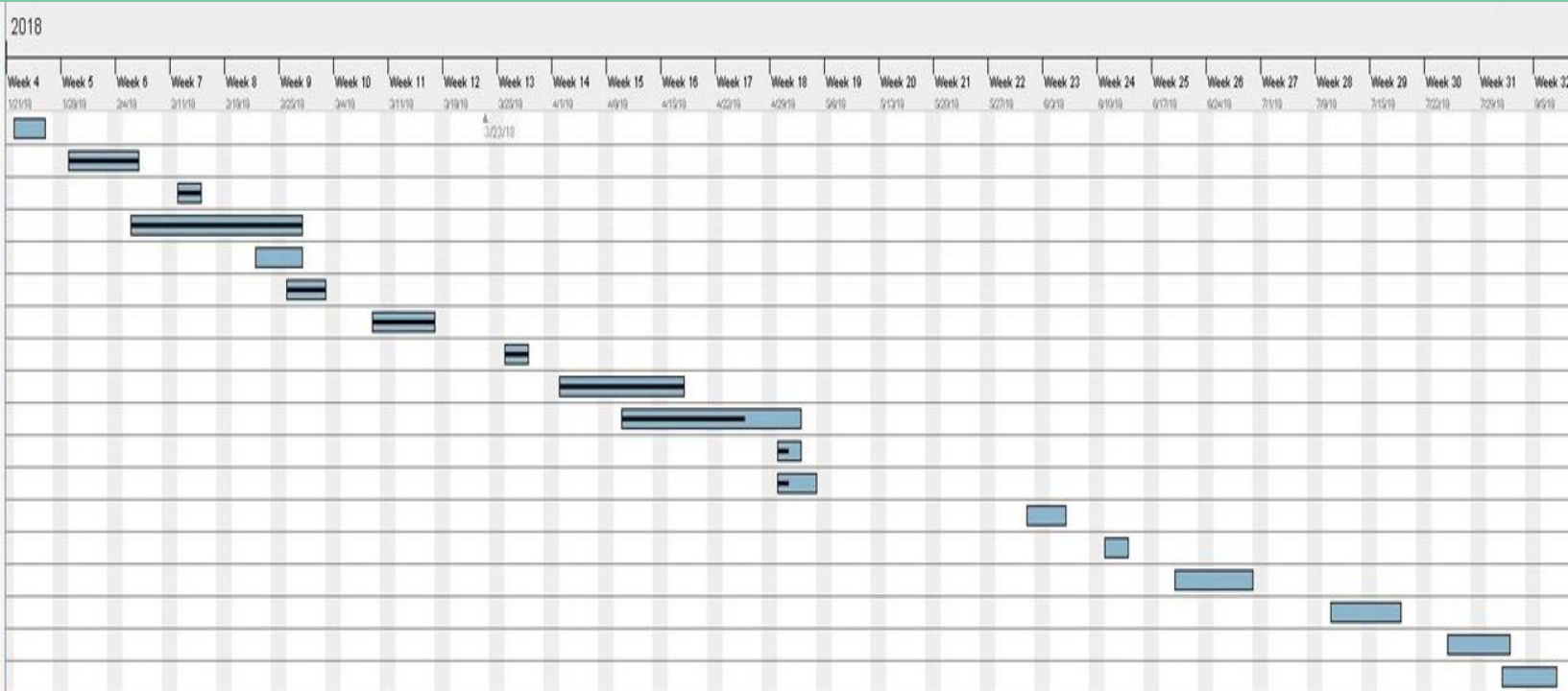
- Sticks
- Grips & Holders
- Cuffs
- Legs Bases
- Foams



# Meeting Customer Requirements

- It has light weight which is 4.65kg.
- Contains comfort and convenience for the user by using materials such as Aluminum, Rubber and Foam.
- Affordable.
- Appropriate cost for manufacturing and repair parts.

# Gantt Chart



# Budget

Total budget estimated to be \$200 - \$300

Material used:

Aluminum with specific thickness and rubber for cuffs  
(\$200)

Foam for underarm and grips. (\$50-\$100)



# references

- [1]<https://www.grainger.com/product/GRAINGER-APPROVED-Aluminum-Sheet-Stock-15V221>