

PROTOTYPE DESIGN COLLECTION

SERIES 1



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CHAPTER 11

Food Cover

Wan Zahra' Mardiah Binti Amran and Azizul Hakim Bin Samsudin

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PROJECT DESCRIPTION

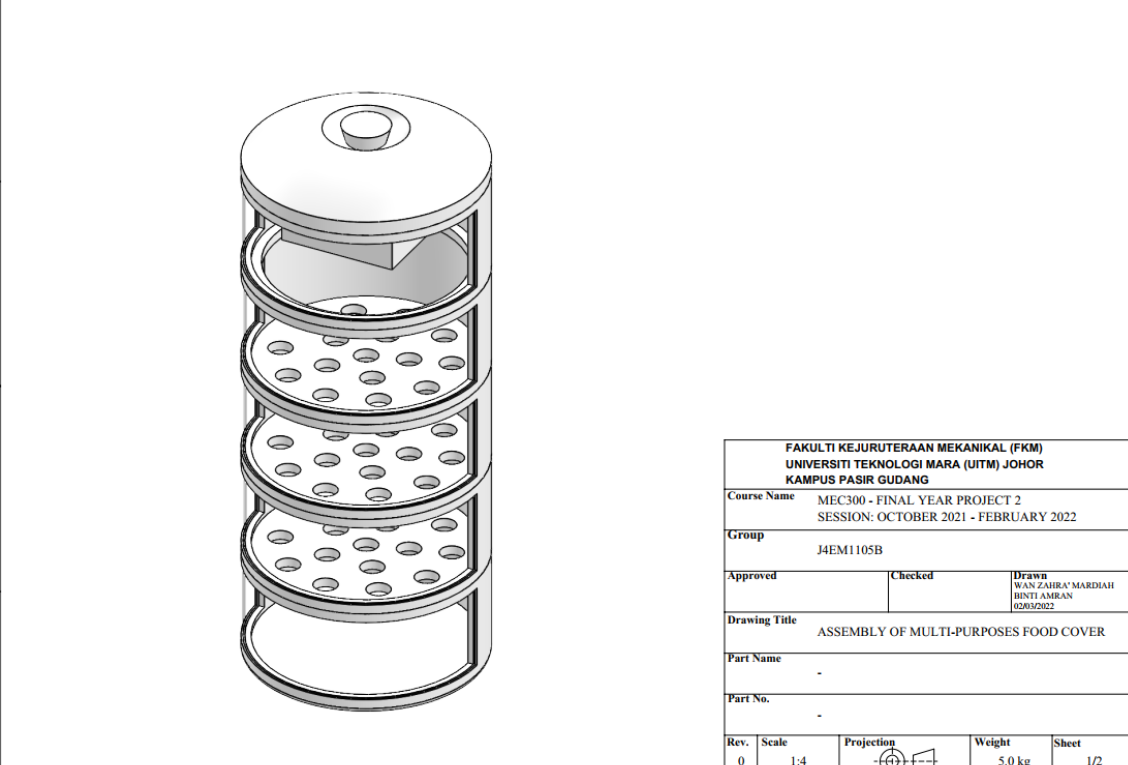
Food cover available in the market is lacking in terms of its function where it can only cover the food without maintaining the warm temperature inside the food cover. To overcome this problem, a food cover was designed with an ability to maintain the warm temperature inside the food cover. Morphological approach was used to obtain the appropriate design of the food cover. Meanwhile, thermal energy theory was used to determine the optimal power needed to maintain the temperature. SOLIDWORK was used to perform the stress and deformation analysis towards the food cover surface due to the temperature change inside the product. The results of the calculation were able to determine the optimal power needed and the analysis using SOLIDWORK shows positive results where no failure indicator appears in the stress and deformation analysis. To conclude, this food cover was successfully designed, fabricated, and works perfectly. This product has been tested where it can maintain the temperature inside the food cover in several situations.

Keywords: *Food cover, Thermal power, SOLIDWORK*

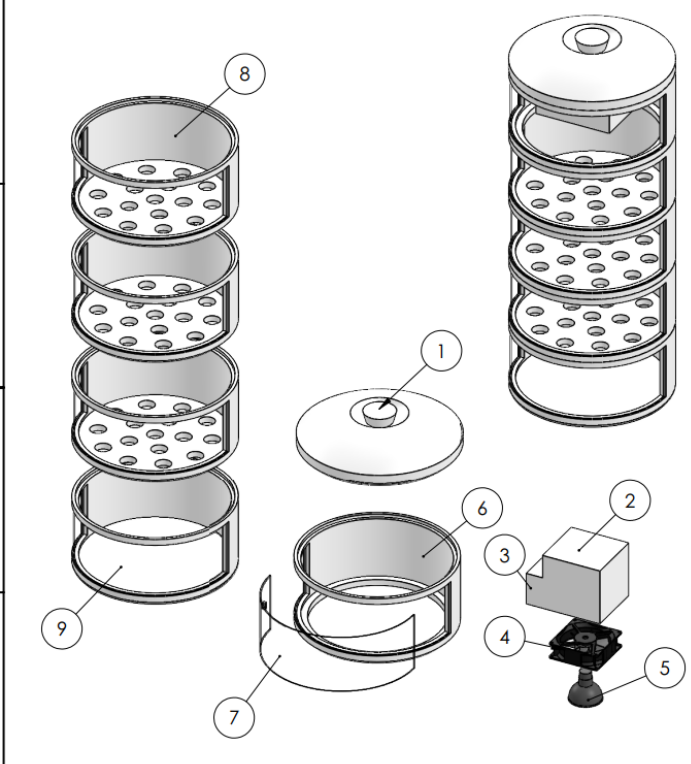
PROTOTYPE



DESIGN PARAMETER



FAKULTI KEJURUTERAAN MEKANIKAL (FKM) UNIVERSITI TEKNOLOGI MARA (UITM) JOHOR KAMPUS PASIR GUDANG					
Course Name MEC300 - FINAL YEAR PROJECT 2 SESSION: OCTOBER 2021 - FEBRUARY 2022					
Group J4EM1105B					
Approved	Checked	Drawn WAN ZAHRA' MARDIAH BINTI AMRAN 0203/2022			
Drawing Title ASSEMBLY OF MULTI-PURPOSES FOOD COVER					
Part Name -					
Part No. -					
Rev. 0	Scale 1:4	Projection	Weight 5.0 kg	Sheet 1/2	



BILL OF MATERIALS (BOM)			
Part No.	Part Name	Description	Qty.
1	Lid	107.5mm x 245mm (diameter)	1
2	Housing Box	90mm x 90mm x 90mm	1
3	Battery Socket	60mm x 20mm x 66mm	2
4	Mini Fan	80mm x 80mm x 80mm	1
5	Halogen Bulb	45mm x 50mm (diameter)	1
6	Lid Extension	107.5mm x 245mm (diameter)	1
7	Window	91.5mm x 241mm (diameter)	5
8	Body	107.5mm x 245mm (diameter)	3
9	Base	107.5mm x 245mm (diameter)	1

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Course Name MEC300 - FINAL YEAR PROJECT 2 SESSION: OCTOBER 2021 - FEBRUARY 2022					
Group J4EM1105B					
Approved	Checked	Drawn WAN ZAHRA' MARDIAH BINTI AMRAN 0203/2022			
Drawing Title EXPLODED ASSEMBLY OF MULTI-PURPOSES FOOD COVER					
Part Name -					
Part No. -					
Rev. 0	Scale 1:6	Projection	Weight 5.0 kg	Sheet 2/2	