

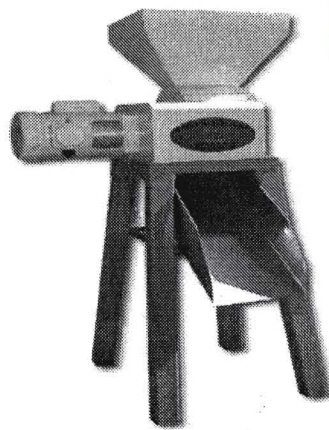
**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**

***FACULTY OF INDUSTRIAL TECHNOLOGY***

**DEPARTMENT OF TECHNICAL EDUCATION**

**FINAL YEAR PROJECT**

**PROJECT TITLE: DESIGN OF A MARULA NUTCRACKER  
MACHINE.**



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**IN PARTIAL FULFILMENT OF THE BACHELOR OF TECHNICAL EDUCATION  
HONOURS DEGREE IN MECHANICAL AND AUTOMOTIVE ENGINEERING**

## **ABSTRACT**

This project was carried out in partial fulfilment of the Bachelor of Technical Education Honours Degree in Mechanical and Automotive Engineering. The project sought to design and manufacture a machine for cracking marula nuts as a positive undertaking towards localising the manufacture of critical equipment for the country and to reduce balance of payments deficit and shortage of foreign currency through regional commercialisation of the machine.

The thrust of the project was the design for local manufacture, that is, using the available manufacturing processes and materials to provide a machine with a cost less than those that are currently being imported and which is able to provide at least the same function.

The methodology followed in the project was mainly that of Quality Function Deployment. A survey was first carried out by way of questionnaires and oral interviews to get customer needs. A thorough market research was also done to capture the functionalities being offered by the other products in the market.

A number of concepts were developed, and the best concept was selected using the Weighted Rank Method. The concept was further developed giving careful attention to the manufacturing process and material selection.