

Pool Cover

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Type: Design Problem
Student Time: 2 weeks
Location: Take home

Summary

This open ended design problem is intended to be completed by an individual during the first few weeks of a first course related to engineering design. The student is to design a temporary cover for an above ground swimming pool. The cover's function is to prevent leaves, small bugs, and other debris from entering the pool during short periods, such as overnight, when the pool is not in use. It must be capable of being employed by a single person and considered as an integral component of the pool system.

The objective of this assignment is to involve the student in various aspects of the design process and to enhance communication skills by requiring a written and a verbal report.

ABET Descriptors

Engr Sci Content: First Year Engineering
Type: Component
Functions: Define objectives, develop performance specifications, planning,
evaluate concepts, communication
Features: Design methodology, creativity, open ended
Constraints: Materials, human factors, economics, time
Effort: Individual

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Project Statement:

You are to design a cover for an above ground swimming pool. The cover is to be used for temporary, such as overnight, protection against leaves, small bugs, and other debris. The cover is to be an integral part of the pool system and must be capable of being employed by a single person. Good luck!

A report and a twenty minute classroom presentation will be required at the end of this two week project.

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Engineering Notes:

Comments:

The primary purpose of this project is to involve the student in various aspects of open ended engineering design. The shape and size of the pool, the size of the debris to be captured, the method of employment, the means of storage and other features must be considered in order to define performance specifications and preliminary approaches. Materials, economics, human factors, safety, esthetics, manufacturing processes and reliability can be factors in using "Quality Function Deployment" to select the final design from the various alternatives.

Expected Results:

Graphical documentation of the final design will be included in the written and verbal reports. These reports will also include a discussion of the various design activities, or methodology, that lead to the final product.

Discussion/Follow-on:

Explain to the student how their academic program will prepare them to deal more effectively with problems of this general nature. Consider non-technical as well as technical courses in answering this question.

Have the student, as they complete all their future courses, to briefly document how each course could have been helpful in completing this project. This log can be part of their academic portfolio. They can also include in this log the helpfulness of courses which they have already completed.