

### **Hot Coffee**

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Type: Design project  
Time: Two weeks  
Location: Take home work with discussion in class

### **Summary**

In the past there have been several law suits related to burns that resulted from the spillage of hot coffee in the lap of a person while driving away from the drive-up window of a fast food establishment. The essence of this project is for the student to pretend that they have been hired as an expert witness by either the lawyer for the plaintiff or the lawyer of the defendant. The job of the expert witness is to make a technical case for the lawyer. Developing the technical case will involve determining what standards apply and if the standards have been met with the coffee and coffee cups provided by the defendant. Temperature measurements of coffee as served and tip tests on the cups would be a starting place for the expert witness' investigation.

### **ABET Descriptors**

Engrg. Sci. Content: First Year Engineering  
Type: System  
Elements: Develop criteria and specifications, analysis  
Features: Determination of problem specifications, creativity  
Constraints: Safety  
Effort: Team

## Hot Coffee

### Problem Statement:

In the past there have been several law suits related to burns that resulted from the spillage of hot coffee in the lap of a person as they drive away from the drive-up window of a fast food establishment. Half of you have been hired as expert witnesses by the lawyer for the complainant and the other half have been retained by the lawyer of the defendant. The job of the expert witness is to make a technical case for the lawyer. Developing the technical case will involve determining what standards apply and if the standards have been met with the coffee and coffee cups provided by the defendant. Temperature measurements of coffee as served and tip tests on the cups would be a starting place for the expert witnesses.

The objective of this project is to develop a case (detailed argument) for the lawyer that has retained you that will allow him to win the case.

You should consider the following possibilities:

- Determine any standards that may relate to
  - safe temperature of hot foods or drinks,
  - effects of spilling hot liquids on the human skin,
  - tipping of cups holding hot liquids,
  - driving while attempting to hold hot or otherwise dangerous objects
  - expectations of customers who buy coffee,
  - etc.
- Measure the temperature of the coffee served at several fast food restaurants. Use statistical methods to develop sample collection procedure and to analyze data.
- Test the stability, with respect to tipping over or being dropped, of coffee cups used by several fast food restaurants.
- Determine what temperature coffee should be served and what safeguards could be implemented to prevent coffee spillage. Customer polls could help address these questions.
- Consider the rights and responsibilities of persons that purchase coffee and of the restaurants that sell coffee.
- Look for precedents in the same or similar situations.

The following reports are required:

- A briefing for the lawyer that specifies
  - any relevant standards/specifications for coffee, serving coffee, or coffee cups,
  - the results of any tests conducted during the investigation, and
  - recommendations as to how the case should be presented.
- An oral argument to the class based on the team's findings.

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### **Engineering Notes:**

The concept here is to have the students investigate a simple situation that has generated a legal claim related to product liability. The students must prepare an argument to support the lawyer that hired them; thus, they must generate technical reasons why either the defendant or the plaintiff is correct.

The students should be divided into an even number of groups with half of the groups assigned to assist the plaintiff's lawyer and half the groups assigned to assist the defendant's lawyer. The oral presentations could then be presented in pairs as if in an actual trial. The students not in one of the two groups participating in a trial could be the jury and decide the winner.

### **Objectives and Comments:**

The project is designed to have the students determine if a product meets relevant specifications and either defend or attack the product depending not on their findings, but rather on the needs of their employer. There is a great opportunity to involve the question of ethics either directly in the assignment or at least in class discussions of the project.

### **Expected Outcome:**

A written briefing that lays out the case that they think the lawyer should present.

An oral presentation of their case in a mock trial situation.

### **Discussion and follow-on activities:**

If possible, have an attorney meet with the class to discuss the legal aspects of product liability. If the university includes a Law School perhaps one of the faculty would be willing to make such a presentation.

A discussion on the ethics associated with developing a case based on reasonable technical evidence versus a case based on the lawyer's need to win.