

**AD420 • ME444 • MKTG594 Elkay Project**  
Fall Semester, 2007**Stephen Melamed**, Industrial Design, College of Architecture+Arts  
**Michael J. Scott**, Engineering, College of Engineering  
**Albert Page**, Marketing, College of Business Administration**Assignment**      **No. 2.b** Mechanical Engineering - Skills Assessment**Project Description**      *Back-of-the-envelope* estimation and material selection are crucial engineering skills. Provide estimated answers for the following two questions. Show your reasoning clearly, be clear about the information required, and acknowledge all your sources. If you make a sketch to solve the problem, please turn in all sketches as well.

1. What material and manufacturing process would you choose for the housing of a new external computer component such as a DVD-writer? You may make any special assumptions you want (e.g., specially designed for damp conditions). Explain your reasons, and please list the other materials you considered and your reasons for rejecting them.

2. Using two “D” cell batteries as the sole source of power, how much tea could you heat from room temperature to a desirable temperature for drinking?

**Project Requirements**      All responses are to be presented in the form of a memo or e-mail to your boss, who can be assumed to have some technical background, but not as much expertise as you have. In other words, for each problem tell a story that can be read straight through from beginning to end. Complete sentences are encouraged.**Submission**      The back-of-the-envelope calculations must be submitted in hard copy, and indeed it is preferable that you turn it in exactly as you solved it. Additional electronic copy is also required.**Due Date**      Tuesday, September 11, 2007