

memorandum

TO: Students of 1.101

DATE: 5 October, 2006

FROM: LL Bucciarelli

SUBJECT: Filter design task report audience, contents & format.

When you write, you write for a particular *audience*. That might be yourself, your teacher, your peers, your boss, even maybe, your mom or dad. You are to take the audience for this memo as the *head of marketing* in the firm where you work as an engineer. The enterprise makes a wide variety of water filtering systems for home and industry.

She (the head of marketing) has an engineering undergraduate degree, MIT Class of 1984. Her expertise in marketing is based on an MBA she earned at Harvard. She knows the firm's product line thoroughly from a customer's perspective, i.e., what the critical performance parameters of a filtering system are and how they matter to the customer. She has general knowledge of the engineering model which describes how these parameters are related. She is quite familiar with the firm's product development efforts and so knows about the design task with which you have been engaged.

Your report (one per group) should have the following format:

A brief introductory paragraph of several sentences, describing the design task including the task objective in terms of requirements (presumed source conditions, target pH, flow values, limit on pressure drop).

A description of your prototype as tested, including a graphic representation of your design showing overall dimensions and identifying materials.

A presentation of the results of testing in tabular form, e.g.¹,

Filter system (Lab group ID) Test Results

Flow (gal/min)	Source pH	Delivered pH	Press. Drop (psi)

1. Note this differs from the table you have in your lab note books, the one given in the Test Protocol. Please bring your notebooks to lab next week with a table prepared as in the Test Protocol.

Identify all significant features of the test program such as fluctuations in supply pressure, time allotted in advance of measurement for flow to stabilize, leaks, observations of flow within the pipe, *material costs*, etc.

Then follow with a brief *discussion of results*. This should include a comparison of your design with *two other possible configurations* and other forms of Calcium Carbonate - *designs built and tested by your classmates*.

Finally, include *recommendations* for improvement of your group's design. Include also in this any recommendations for improvement of the test protocol.

Tack on the *appendix*, the one you have already drafted, presenting your sizing analysis. This can be hand-written but in ink.

This is a group report. One memo per group.

It is due at the *start* of class on Tuesday, 17 October.