Grading Cutoffs

Letter grades are *not* scaled with respect to the class average. Instead, they are normalized taking into account the difficulty associated with each question.

The skill levels that the grades correspond to are as follows:

A C indicates the ability to correctly apply basic principles to simple problems and others requiring a relatively small amount of reasoning. The skill level is probably barely enough to survive courses for which ECE 232 is a prerequisite.

A B indicates the ability to put together a small number of relatively simple concepts and perhaps extend them slightly. A better understanding of the concepts than a C student.

An A represents relatively good understanding (for a second-year student) of most of the concepts covered and the knowledge of many of the finer points associated with the material. Ideally, there should be an A+ grade, to indicate people who have a near-perfect and *intuitive* understanding of the course material, and who show creativity in design. Every class usually has one or two students at this level. Unfortunately, UMass doesn't have A+ grades, so (somewhat unfairly) for grading purposes, such A+ students are grouped with the A students.

Each question (or part of a question) is assessed for the skill level it represents. For example, Question 1a of Test 1 is a C-level question: it only requires people to know what the various fields are in a floating-point instruction, and what they mean. Question 1b is a B-class question: it needs knowledge of the fact that the exponent is \(-126\), not \(-127\) for denormal, single-precision, numbers. Question 9 is partly a C-level question (for translating instructions like \(m=m+1\); \(j=j+2\);, etc. into assembler); partly a B-level question (e.g., for managing the loops and knowing that you need to multiply word addresses by 4 to get byte addresses), and partly an A-level question (e.g., knowing that the 2 additional parameters have to be passed through the stack to the called routine). In this way, I start by identifying the contribution of each question to each of these levels. Then, I multiply by a derating factor to account for careless mistakes (gives people some leeway for silly mistakes that don't represent a lack of knowledge), and arrive at the final grade cutoffs.

This is by no means a perfect system (it is theoretically possible to be an A-level student in terms of understanding the material, and yet do the tests so badly that you get a C), but it works reasonably well in most cases.

The cutoffs for the course are calculated as follows:

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\text{Homework Cutoffs} \times 0.05 + (\text{Test 1} + \text{Test 2}) \times 0.30 + \text{Final Exam Cutoffs} \times 0.35.
\]

The grade cutoffs for Test 1 are:
- C: 43
- B: 60
- A: 77

The grade cutoffs for Test 2 are:
- C: 48
- B: 65
- A: 80