Proposal to update CS requirements for BS-AMATH students

Current Computer Science Requirement:
Undergraduates majoring in Applied Mathematics must take one of these three options:

CS 115 & CS 116 (4 credits total), or
CS 104 & CS 115 (4 credits total), or
CS 105 & CS 201 (6 credits total).

The problem is the second option. CS 104 and CS 115 are both introductory programming courses that cover the same concepts. The only difference is that one uses MATLAB and the other uses Java.

Also, if they want to take more CS courses later, they need CS 116 or CS 201.

It would make more sense to follow CS 104 by CS 201, which is what we propose now.

Note: The number of credit hours of CS is either 4 or 6, just as before (even though we are replacing one of the 4 credit hour options by a 6 credit hour option). Also, the total number of credit hours required is unchanged.

Proposed Computer Science Requirement, with details:

Undergraduates majoring in Applied Mathematics must take one of these three options:

CS 115 & CS 116 (4 credits total)

This is the standard two-course introductory sequence for CS majors. It teaches object-oriented programming, using Java.

CS 104 & CS 201 (6 credits total)

CS 104 is an alternative introductory course using MATLAB, for engineers. This is a good option for students taking MATH 100, since they are learning MATLAB in that class, too.

Without this option, our new first-year students, some of whom have never done any programming before, would see *three(!) new languages in their first semester*: Java in CS 115, MATLAB in MATH 100, and Mathematica in MATH 151.

CS 201 is a 4 credit accelerated introduction, that quickly covers the material in 104 but using Java, and then covers all of CS 116.

CS 105 & CS 201 (6 credits total)

CS 105 is an alternative introductory course using C, primarily for physics majors. This is a good option for students who will double major or minor in physics.