The Florida State University
Tallahassee, Florida 32306-4530
Computer Science Department

To: Students in Discrete Mathematics
From: David Whalley
           Chair, Computer Science
Date: August 15, 2006
Subject: **Importance of Discrete Mathematics for Computer Science Majors**

The Mathematics Department has asked me to explain why you are required to take the discrete mathematics courses. One obvious reason that we require these courses for Computer Science majors is that the subjects covered are essential for many of the topics that you will covering in later courses. Please also look at the Undergraduate Computer Science Flowchart, which is accessible on the department web page. You will notice that MAD2104 is a prerequisite for four required Computer Science courses. MAD3105 is a prerequisite for two additional required courses. In addition, MAD2104 and MAD3105 are either directly or indirectly required for several other required or elective courses in our Computer Science curriculum.

Computer science is a science and is based on engineering and mathematics. The tools and knowledge that you will learn in discrete mathematics are as fundamental to computer science as many other mathematics courses are fundamental to other sciences and engineering disciplines. Sets, graphs, and trees are essential for using, defining, and understanding complex data structures. Functions, recurrence relations, and logic are necessary for defining and analyzing algorithms. Likewise, having the ability to prove certain attributes of programs or systems is essential for assuring their correctness and efficiency.

It is my hope that you will find discrete mathematics interesting for its own sake. However, please remember that the mathematical maturity you will achieve from mastering the material in these two courses will serve as a proper foundation that will not only allow you grasp material in subsequent Computer Science courses, but will also allow to design and implement more effective computer applications and systems throughout your career.

Sincerely,
David B. Whalley