

2014/2015 Seminar Series

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Mental Models and Student Success in 1st Year Computer Science

By: Dr. Eric Aubanel

Abstract:

There is plenty of international evidence that computer science students don't achieve the expected outcomes from 1st year programming courses. Many students have difficulty solving simple programming problems, are unable to correctly trace programs, and hold a number of misconceptions about program semantics. Studies suggest that this is due to students holding non viable mental models of computing. These non viable mental models result in the inability of students to relate program code to its runtime behaviour.

I will give an overview of the problem, explain the diagnosis using constructivism, which is a theory of knowledge that holds that we construct knowledge from our experiences, and propose some ideas for improving introductory computer science education, drawn from the literature and my experience as a teacher. I hope this talk will stimulate fundamental evidence-based discussion on how best to teach programming.

**Wednesday, Nov 12 @ 3:30 PM
ITC (540 Windsor St.) , ITC 317**