

Abstract Submitted
for the APR08 Meeting of
The American Physical Society

Computers in Science education, a new way to teach physics and mathematics? MORTEN HJORTH-JENSEN, Department of Physics, University of Oslo, Norway, HANS PETTER LANGTANGEN, Simula Research Laboratory, Oslo, Norway, KNUT MØRKEN, Department of Informatics, University of Oslo, Norway, ANDERS MALTHE-SØRENSEN, ARNT INGE VISTNES, Department of Physics, University of Oslo, Norway — We present the Computers in Science Education project at the University of Oslo, where computational topics are baked into our undergraduate curriculum of most of our bachelor programs from the very first semester. The first semester consists of courses in traditional Calculus, mathematical modelling and computer science. Topics such as solving differential equations numerically are introduced the first semester and the students learn to program such equations using modern computing languages, in addition to the standard analytical procedures. The first semester provides the basis for further introduction of computational topics. These are gradually baked into many other undergraduate courses in mathematics and the sciences. We focus on training our students to use general programming tools in solving physics problems, in addition to the classical analytic problems. Our students handle now at an early stage in their education more realistic physics problems than before. We believe that, in addition to educating modern scientists, this promotes a better physics understanding for a majority of the students.

Morten Hjorth-Jensen
Department of Physics, University of Oslo, Norway

Date submitted: 13 Jan 2008

Electronic form version 1.4