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17. Februar 2015

Einladung zum khdm-Oberseminar

Montag, 02. März 2015 von 10:00 bis 12:30 Uhr,
Raum J2.226, Universität Paderborn

Es sprechen:

Prof. Dr. Simon Goodchild, Agder University, Norway

MatRIC: Centre for Research, Innovation and Coordination of Mathematics Teaching

Prof. Dr. Frode Rønning, Norwegian University of Science and Technology

A developmental project to improve the mathematics educa- tion for large groups of engineering students

Der zweite Vortrag beginnt etwa um 11:15.

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Mit freundlichen Grüßen



MatRIC: Centre for Research, Innovation and Coordination of Mathematics Teaching

Prof. Dr. Simon Goodchild (Agder University, Norway)

Abstract:

MatRIC is one of four Norwegian centres of excellence in education. These centres have been established by the Norwegian Agency for Quality Assurance in Education to promote teaching in higher education; MatRIC's focus is teaching and learning mathematics. Excellence in teaching and learning mathematics occurs throughout Norway and one goal of MatRIC is to develop a network of university level mathematics teachers so that we can learn from each other's experience and efforts to improve teaching and learning. The systematic inquiry into university level mathematics teaching is still quite new to Norway, thus another of MatRIC's goals is to develop a national research agenda that can inform teachers about best practices in teaching and the impact of efforts to improve students' learning experiences. A third goal, which underpins the two mentioned above, is the desire to improve students' experience of mathematics, improve performance and progression, and reduce failure and drop out. In this presentation I will set out MatRIC's agenda to support innovation, initiate and develop research, and establish a network of university level mathematics teachers, that connects to the international community of university mathematics teachers and mathematics education researchers who inquire into the issues of teaching and learning at university.

A developmental project to improve the mathematics education for large groups of engineering students

Prof. Dr. Frode Rønning (Norwegian University of Science and Technology)

Abstract:

The Norwegian University of Science and Technology enrolls more than 1600 new students each year to a wide range of study programmes in technology. To be admitted students are required to have passed the most advanced courses in mathematics in upper secondary school (Gymnasium) with a lower bound on the grade. Therefore these students are among the most highly qualified in Norway and for some of the study programmes there is a strong competition to be admitted. Despite of the high minimum requirements there is a large diversity in the group of students and, depending on the study programme, their motivation for learning mathematics is also very diverse. Students from all programmes complete the first course in mathematics (one variable calculus), taking a common exam, and almost all also take the second course (multi variable calculus).

Recently a major research and development project has been launched to revise the teaching of the basic mathematics courses. The main aim of the project is to increase the learning outcome in the sense that students should develop a deeper understanding of mathematical concepts and processes. Important keywords for the project are quality (e.g. in teacher-student interaction), accessibility and differentiation. Accessibility and differentiation will be achieved by creating a variety of (mainly net based) resources aiming at students with different interest and motivation.

In this talk I will report on the experiences from the first one and a half year of this project. Data have been collected by means of surveys to all students on a large scale, down to focus group interviews with a small number of students. These data provide important information for further development of the project and I will present some thoughts on how to carry the project further, e.g. by challenging the classical style of lecturing in large classes.