

Calculus **without** Limits

Is your math up-to-date with technology?

Could mathematics change fundamentally with technology. Would that make your knowledge of math obsolete? Are you tuned to ways in which technology can greatly enhance your mathematical capabilities?

To find out, take the experimental new course on calculus without limits. The course is being offered by the USM School of Mathematical Sciences as part of a project to explore alternative philosophies of mathematics, and to harness computer technology to enhance applications of mathematics.

- Group targeted to mathematics and science students at all levels.
- Course will run for only 3 weeks.
- Certificate of proficiency to those who successfully complete the course.
- Hurry! Limited seats. Contact: Nur Atiqah Jamaluddin, School of Mathematical Sciences, Universiti Sains Malaysia.
Tel: 04-653-3481. Email: nuratiqah@notes.usm.my.
- Course starts on Monday, 16 Aug 2010; thereafter, every Monday and Wednesday, 4 to 6 p.m., in Lab 3, School of Mathematical Sciences.

What will you learn?

- A new approach to mathematics, better adapted to contemporary technology.
- Powerful tools such as MAXIMA for symbolic manipulation and CALCODE for numerical computation. (Free software provided.)

Outcomes

- Become aware of alternative ways to do math rigorously.
- Learn about infinities and infinitesimals in non-Archimedean fields, and their relation to representability and floating-point numbers on computers.
- Easily do advanced calculus-applications, such as the exact motion of the simple pendulum, using Jacobian elliptic functions, ballistics with air resistance, Lorenz model, n -particle simulations etc.

