

East-Africa Technomathematics 2007-2009

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Technology**

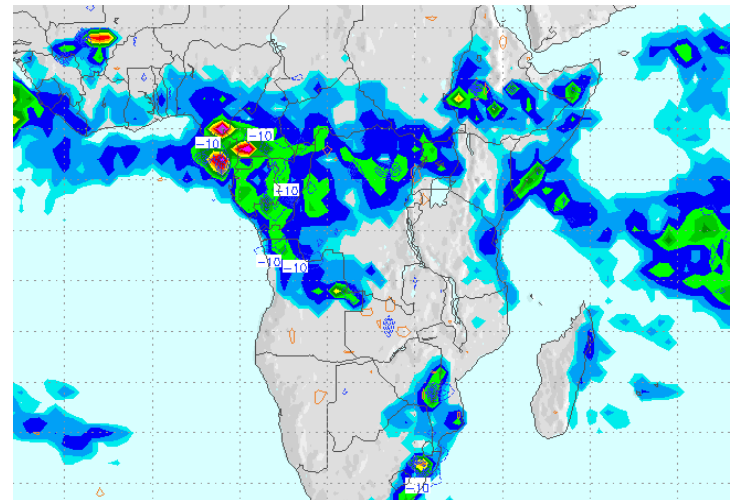


Partners

- Lappeenranta University of Technology
- Tampere University of Technology
- University of Dar es Salaam
- Kigali Institute of Science and Technology
- National University of Rwanda

Background

Reforms in industrial processes, communal and regional networks through engineering skills are pivotal for the environmental concern and goals of sustainable development.



The Mission

- ❖ Development of science education and teachers training are important factors in building the foundations for industrial activity and welfare production in Africa.
- ❖ Development of knowledge based industries, educating administrators for information society, skills needed in information based industry



CIMO, Finnish Centre for International Mobility

2 year project

curriculum development for applied & industrial mathematics



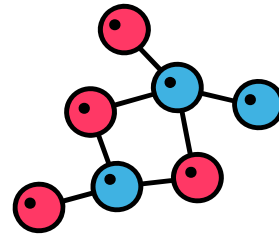
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General objectives

- ❖ to introduce techno-mathematics in the East Africa region
- ❖ to promote the development and use of mathematical tools in development activities in the region, especially in the fight against poverty
- ❖ to stimulate the growth of mathematics knowledge in the region through training of experts and basic training in schools

Long term goal

Industrial Mathematics Knowledge Centre:
Pool the knowledge available in the main
universities and coordinate the
development of industrial mathematics in
Eastern Africa.



Objectives/goals

- ❖ Curriculum development in applied mathematics
- ❖ Awareness of career opportunities in science, engineering and mathematics
- ❖ Encouraging girls into academic career
- ❖ Workshops to present the development challenges from industry and regional agencies
- ❖ Pilot group of mathematics teachers

Activities

- Staff visits
- Student exchange
- Joint supervision of MS thesis
- Intensive courses
- MS curriculum development
- Consulting/planning of future

Expected benefits

- Student exchange, talented young people
- Scientific collaboration → joint projects
- Special knowledge is exportable product
- The legacy and mission of Universities to develop Finland, Europe and the World
- Globalization → these goals are connected
- **Time span 3-20 years!**

Course titles

18-19.9 Mathematics, technology and society. Case examples and educational aspect in Industrial Mathematics.
Matti Heiliö, Dodoma.

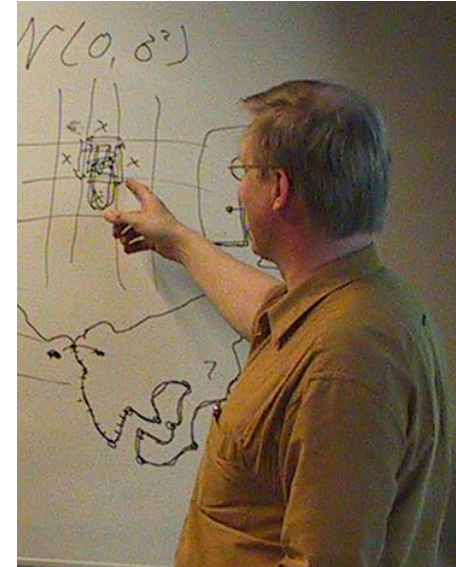
27.9-1.10 Mathematics for Engineering, Management and Industrial R&D.
Matti Heiliö, Dar es Salaam

Dodoma Conference





15-26.10. Remote sensing
and environmental models,
Tuomo Kauranne.



Models in biomathematics and
epidemiology.

Michel Tchuenche, Dar es Salaam

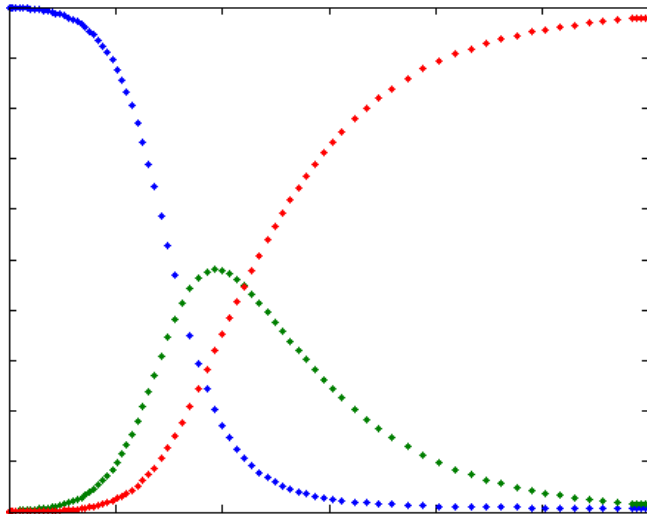
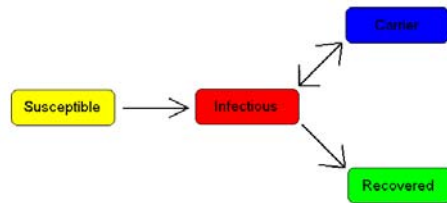


29.10-5.12 Lectures and tutorials on
Discrete Optimization. Introduction to
Combinatorial Optimization, Timetabling
and the Assembly line balancing

Prof Allen Mushi, Lappeenranta
University of Technology



15-26.19.2.08 Mathematical models in epidemiology. Michel Tchuenche, Lappeenranta University of Technology



Tuki vaikuttavuuteen

- ◆ Asiantuntijavierailut → kontakti yrityksiin ja julkisiin laitoksiin, järjestöihin
- ◆ Meteorological Agency TMA
- ◆ Electricity/power company Tanesco
- ◆ Tanzania Commission for Science and Technology (COSTECH)
- ◆ Agency of water distribution? (via Engineering faculty)

MS Theses

- Pricing of electricity by means of a stochastic model
- A Mathematical model of influenza with treatment and vaccination
- About level-set methods in solving differential equations
- Several topics underway

Future challenges

- ❖ double degree possibilities?
- ❖ Internet supported courses, sandwich-courses, remote supervision
- ❖ Invigoration of teacher's training programmes is a way forward!
- ❖ kick-off → Pilot group 20 → local programme 50-100 teachers/year

