First board meeting of Master program in Computational Physics, Mathematics and Life Science

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Master program in Computational Physics, Mathematics and Life Science

The program is a collaboration between five departments and classical disciplines:

- Department of Biosciences
- Department of Chemistry
- Department of Informatics
- Department of Mathematics
- Department of Physics

The program is multidisciplinary and all students who have completed undergraduate studies in science and engineering, with a sufficient quantitative background, are eligible. The language of instruction is English.

Agenda November 4, 2015, 10am-12pm

Our main tasks are to discuss and agree on learning goals and competences as well as admission criteria. The deadline for the first **iteration** to MN-fac is November 10.

1. Welcome and presentation of board members and invited guests, 15 min
2. Overview of the material that has been developed and rationale for the program, 20 min
3. Discussion of learning outcomes and competences, see material on github address, 40 min
4. Discussions and topics to prepare for next meetings, 30 min
   - Thesis and research directions, preparing documentation and pool of potential supervisors
   - New members from Department of Mathematics
   - Integrating the program with NMBU
   - Exisiting Courses and courses/modules to be developed
5. Additional topics

Some overarching topics

- Numerical simulations of various systems in science are central to our basic understanding of nature and technlogy. UiO is very strong on computational science. A dedicated master program will send strong signals to new students.
- To build up an activity in computational life science
- Develop new research directions in computational science with a **focus on multiscale science and cross-disciplinary research**
- Strengthen the CSE initiative
- Some of us have a wider agenda, a new department in Computational Science, along the lines of that developed at Michigan State University

Integrating with NMBU

Two paths:

- A common program, owned by UiO and NMBU. Students apply locally and register their credits locally but can have supervisors and take courses from both universities. The degree is awarded locally. This is most likely the simplest path.
- A cotutelle program, with the same modalities as above but common degrees. This is more difficult and UiO has not been very keen about cotutelle agreements at the MSc level or PhD level.

Thesis directions (and need of new board members)

- Computational mathematics
- Computational mechanics and fluid mechanics (NEED people here)
- Computational chemistry
- Computational physics
- Computational materials science
- Computational life science
- Image analysis and signal processing
- Computational finance and statistics (NEED people here)

Tasks

- Identify courses and courses that can be modularized and integrated in the program
- Develop a pool of MSc thesis projects
- Identify a pool of potential MSc supervisors
- Identify eventual new board members