

Master education in mechanics at UiO

belongs most naturally within the program

Norwegian name: **Anvendt matematikk og mekanikk**

English name: **Computational Science and Engineering**

Three fields of study (studieretninger):

- Computational Science
- Solid Mechanics
- Fluid Mechanics

Computational Science and Engineering

We span four departments and several institutions and companies:

- Department of Mathematics
- Department of Informatics
- Department of Physics
- Department of Geosciences
- UNIK (University studies at Kjeller)
- SIMULA (at Fornebu)
- Rikshospitalet
- SINTEF, IFE
- DNV, AkerKværner, Norsk Hydro (now Statoil), etc.

Two fields of study in Mechanics

The split between Solid and Fluid Mechanics was not desired, but required to facilitate legal access limitation to Solid Mechanics.

After the split we have defined new technological studies combining Solid and Fluid Mechanics.

Important difference: Mathematics requirement for admission:

- Solid Mechanics requires 20 credits
- Fluid Mechanics requires 35 credits

Fluid Mechanics without Fluid Mechanics

We admit applicants to Fluid Mechanics without background in Fluid Mechanics.

Theoretical master curriculum can contain up to 20 credits
bachelor courses: 20 credits fluid mechanics at bachelor level.

Average grade C required within:

- 35 credits mathematics including some vector calculus
- 30 credits mechanics
- 15 credits non-introductory relevant courses

Short or long thesis

The master is a two-year study (120 credits) based on a three-year bachelor (180 credits).

Master thesis can be long (60 credits) or short (30 credits).

Theoretical curriculum can be 60 credits or 90 credits.

For technologically oriented master we recommend short thesis (30 credits) and 90 credits of courses.

Agreement UiO, HiBu, FMC Kongsberg

Three-year contract with partial employment in industry.

Two years of study and one year of work with pay.

Theoretical curriculum mainly at UiO.

Short master thesis at FMC Kongsberg.

HiBu will also offer master courses, also relevant for traditional UiO students.

Multiphase flow technology

Teknologisk orientert kort masteroppgave "Strømningsteknikk"

4. semester	Masteroppgave	Masteroppgave	Masteroppgave
3. semester	MEK4320 - Hydrodynamisk bølgeteori / MEK-INF4210 - Matematisk modellering av strømning, varmetransport og deformasjon / INF5670 - Numeriske metoder for Navier-Stokes likninger	MEK4340 - Strømningsteknikk	MEK4430 - Flerfasestrømning
2. semester	MEK2300 - Fluidmekanikk / INF5620 - Numeriske metoder for partielle differensiallikninger / INF-MAT4360 - Partielle differensialligninger	MEK4100 - Matematiske metoder i mekanikk / FYS4140 - Matematiske metoder i fysikk	MEK4300 - Viskøs strømning og turbulens
1. semester	MEK2200 - Viskøse væsker og elastiske stoffer / FYS2160 - Termodynamikk og statistisk fysikk / FYS4150 - Computational Physics	MEK4500 - Konstruksjonsmekanikk	MEK4550 - Elementmetoden i faststoffmekanikk I
	10 studiepoeng	10 studiepoeng	10 studiepoeng

Marine hydrodynamics & structural mech.

Teknologisk orientert kort masteroppgave "Marin hydrodynamikk og konstruksjonsmekanikk"

4. semester	Masteroppgave	Masteroppgave	Masteroppgave
3. semester	MEK4530 - Stabilitet og knekning av konstruksjoner / MAT2300 - Analyse 2 / INF5670 - Numeriske metoder for Navier-Stokes likninger	MEK4420 - Marin hydrodynamikk	MEK4320 - Hydrodynamisk bølgeteori
2. semester	MEK2300 - Fluidmekanikk / INF5620 - Numeriske metoder for partielle differensiallikninger / INF-MAT4360 - Partielle differensialligninger / FYS4120 - Klassisk mekanikk og elektrodynamikk	MEK4300 - Viskøs strømning og turbulens	MEK4510 - Svingninger i konstruksjoner / MEK4560 - Elementmetoden i faststoffmekanikk II / FYS4140 - Matematiske metoder i fysikk
1. semester	MEK2200 - Viskøse væsker og elastiske stoffer / MAT2300 - Analyse 2 / FYS4150 - Computational Physics	MEK4500 - Konstruksjonsmekanikk	MEK4550 - Elementmetoden i faststoffmekanikk I
	10 studiepoeng	10 studiepoeng	10 studiepoeng

Current number of students admitted

	Spring 2006	Fall 2006	Spring 2007	Fall 2007
Solid	1	5	1	5
Fluid	0	6	1	5

Students will be distributed among permanent (and partial) staff:

● Solid: 2 (2)

● Fluid: 7 (1) normally 6 (1)