



Erasmus Mundus  
Master Course  
2010-2016



Selected and supported by the European Commission, the 2-year Master's course is jointly offered by Delft University of Technology, the Netherlands; Friedrich-Alexander-University of Erlangen-Nürnberg, Germany; Technical University of Berlin, Germany; KTH Royal Institute of Technology, Sweden.



### **COSSE in a nutshell**

- An average of 600 applicants per year
- 65 registered students over 5 years
- 57 graduated students
- 66 % of graduated students currently with PhD positions both within the consortium universities as well as for example: ETH, University of Melbourne, University of Leuven, Uppsala University, MIT, Cambridge and Oxford.
- Company employment includes Ericsson, BASF, IBM

### **COSSE features**

Besides the successful study programme, the cooperation has generated a number of beneficial activities

- Enhanced research cooperation between the partners
- Further EU projects for innovation in education: MUMIE Online Math Education
- Joint participation in the Indo-European Winter Academy organised by FAU, KTH and IITs in India
- COSSE Facebook site, popular for posting PhD positions
- Alumni association for networking

### **Company affiliations**

The COSSE consortium has close collaborations with leading high-tech companies. Examples include ABB, Comsol, Almatris, Marin, and Shell.

### **The COSSE workshop – the core of the joint programme**

The COSSE workshop is the essence of the joint programme. Each year 1st and 2nd year students gather at a selected location for scientific work and social activities. The programme includes scientific presentations, project work, study visits to companies and cultural heritage.



The theme for the workshop is decided by the hosting university, as this reflects a current research topic.

2011	TU Delft	Mathematics in Waterland
2012	FAU	Simulations in Health Care
2013	KTH	Mathematics and Papermaking
2014	TU Berlin	Mathematics in Key Technologies
2015	FAU	Ultrascale Simulation
2016	TU Delft	Computation and Energy

### COSSE Learning outcomes

The COSSE-students have become very familiar with the core skills of CSE, which include:

- mathematical modeling techniques
- simulation techniques (discretizations, algorithms, data structures, software in CSE)
- analysis techniques (data mining, data management, visualization)

The students have become experts in the core skills of CSE and their application one of the specializations offered by the universities. Upon graduation from COSSE the students have acquired:

- familiarity with selected scientific and engineering application areas and their mathematical models
- a knowledge base and skills ranging from formulation of a mathematical model to constructing software for high-performance computer architectures
- effective communication skills for interacting with the professional community as well as management and the society at large, on written and oral presentations
- a degree of independent and critical appraisal of the capability and limitations of, and results produced by, computational modeling.



# 65 students from 27 countries who excel in Computer Simulation for Science and Engineering



Co-funded by the  
Erasmus+ Programme  
of the European Union