

MCM
Master of Science in Computational Mechanics

Duration: 24 months

Course description:

Full-time programme offered by: Universitat Politècnica de Catalunya (Spain), Swansea University (United Kingdom), École Centrale de Nantes (France), Universität Stuttgart (Germany) and Tsinghua University (China). Objectives: This Masters is designed for students who wish to develop their knowledge and competency in the field of computational mechanics with applications in solids, fluids and cutting-edge interdisciplinary fields (e.g. multi-scale, nanomechanics), including a strong component in entrepreneurship.

The goal is to provide students with the necessary skills for modelling, formulation, analysis and implementation of simulation tools for advanced engineering problems, as well as the fundamentals for understanding these approaches in the broader context of engineering science and industry. Students may take this Masters as a professional terminal degree or in preparation for a Doctoral (Ph.D.) degree. Duration and mobility: The Masters' programme consists of 120 ECTS (two academic years). Students will attend two institutions: the first institution (either UPC or SU) is responsible for teaching 60 ECTS and the second institution, different from the first one (US, ECN, UPC or SU), teaches the remaining 60 ECTS. The Masters is organized in four equally loaded terms including lectures, coursework, Practical Training in industry or an applied research centre and culminates in a Masters Thesis.

Summary of study programme: The scheme consists of two parts: Part I (1st and 2nd semesters) provides a basic background in computational mechanics as well as a practical training component. It consists of a set of core modules (20 ECTS) taught jointly at UPC and SU (same syllabus and exams), 10 ECTS in transversal and entrepreneurship skills, 15 ECTS of modules to deepen the knowledge in some general areas of computational mechanics and 15 ECTS in a practical training module developed within an industrial environment. Part II (3rd and 4th semesters) includes a minor aimed at providing a more in-depth knowledge in a selected area of computational mechanics (25 ECTS), 5 ECTS of transversal skills and a Masters thesis (30 ECTS) in a state-of-the-art research field. International partners: The master offers to European students the possibility of assist to one of the best universities of China, Tsinghua University.

The School of Aerospace will host some students to develop their research Practical Training for the fulfillment of their Masters degree and will collaborate in the supervision of some of the MSc theses. Admission Requirements: Candidates must hold a Bachelor of Science or Engineering, or appropriate degree deemed to be a satisfactory standard for admission (at least 180 ECTS). Applications must include a statement of purpose (one/two pages), CV, complete academic transcripts and two letters of recommendation. A score of at least 6.5 IELTS (or equivalent TOEFL or TOEIC) is required for students from non-English speaking countries.

Website: <http://www.cimne.com/cm-master/>

Partners:

UNIVERSITAT POLITÈCNICA DE CATALUNYA, Spain (Co-ordinating Institution)
TSINGHUA UNIVERSITY, China
ECOLE CENTRALE NANTES, France
UNIVERSITÄT STUTTGART, Germany
SWANSEA UNIVERSITY, United Kingdom

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Maximum grant:

640 400 € (30 000 € consortium + 610 400 € scholarships), 2013