東京大学グローバルCOEプログラム　機械システム・イノベーション国際拠点

東京大学 THE UNIVERSITY OF TOKYO

GMSI Global Center of Excellence for Mechanical Systems Innovation

2009. 7/9, 7/16, 7/23　GMSI Seminar Series

Computational Biomechanics. A short introductory course.

Dr. Marco Viceconti

Laboratorio di Tecnologia Medica Istituti Ortopedici Rizzoli
(Rizzoli Orthopedic Institute / Rizzoli整形外科研究所)

日時:　第1部　2009年 7月9日(木)13:00～16:30
第2部　　7月16日(木)13:00～16:30
第3部　　7月23日(木)13:00～16:30

会場:　東京大学工学部2号館1階213号(大講堂)

要旨

This short course for Ms and PhD students in engineering is based on the Ms course Prof. Viceconti holds as part of the degree in biomedical engineering at the University of Bologna. After a brief recall of the basic elements of the theory of the elasticity and of the finite element method, we shall discuss in depth bone biomechanics, and how numerical models can be used to investigate important aspects such a bone strength, orthopaedic biomechanics, risk of fracture in osteoporotic patients, etc. Then we shall extend to the most recent methods for the generation of subject-specific models, of great interest for their potential applications in the clinical practice. Brief mentions will made also to recent developments in the area of multiscale modelling and on the use of probabilistic methods for sensitivity analysis and population modelling. Concrete examples will be provided in the area of paediatric skeletal oncology, prosthetics design, etc. The course will be concluded by a discussion on the accuracy and the limits of validity of numerical models in biomechanics.

主催:　東京大学グローバルCOEプログラム「機械システム・イノベーション国際拠点」事務室
本件連絡先:　東京大学大学院工学系研究科機械工学専攻　助教　竹内　伸太郎
E-mail: shintaro.takeuchi@fel.t.u-tokyo.ac.jp　Phone: 03-5841-1897
GCOE事務局　E-mail: gmsi-office@mechasys.jp　Phone: 03-5841-7437