H2020
Marie Skłodowska-Curie actions
European Training Networks

Excellence Course on Multiscale Structural Mechanics

Wenbin Yu

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The Doctoral School is pleased to announce an Excellence Course on Multiscale Structural Mechanics. This 1.5-day short course covers fundamentals of micromechanics, structural mechanics needed for multiscale modeling of composite structures ranging from micro scale to structural scale. This course assumes a background in elasticity, finite element method, and mechanics of composites and aims to provide students a unified framework for composites modeling. This course emphasizes concepts of mechanics through formulating and solving typical problems of composites, and helps foster an in-depth understanding of the subject. Students not only gain a knowledge of the fundamental principles needed for composites simulation but also gain an integrated and consistent understanding of composites mechanics based on Continuum Mechanics. On completing this course the student shall be able to:

1. Identify distinct features of composites and challenges associated with modeling and simulation of composites
2. Critically evaluate major theories in the literature and explain their strength and weakness
3. Exam and explain simulation results for composite structures
4. Design and analyze composite structures using SwiftComp and other commercial composite simulation software
5. Apply mechanics of structure genome to derive new models for composite structures

Course attendants are encouraged to preview the recent blog entitled Mechanics of Structure Genome. The article can be found at http://imechanica.org/node/18928. They are welcome to leave comments so that Dr Yu can address them ahead of time.

Executive Summary of Prof Wenbin Yu

Dr. Wenbin Yu, currently an Associate Professor in School of Aeronautics and Astronautics at Purdue University, received his PhD in Aerospace Engineering from Georgia Tech in 2002. He also serves as Director for Composites Virtual Factory HUB and Associate Director for Composites Design and Manufacturing HUB, and CTO for AnalySwift LLC. His expertise is in micromechanics and structural mechanics with applications to composite/smart materials. He has authored over 150 refereed technical articles and developed several computer codes which are being extensively used in many government labs, universities, research institutes and companies. His research has been funded by both federal agencies and private industry. His recent honors include ASME Fellow, AIAA Associate Fellow, ASEE Outstanding New Mechanics Educator, Georgia Tech Outstanding Young Engineering Alumni, Utah Aerospace Engineering Educator of the Year, USU Technology Entrepreneur of the Year, USU College of Engineering Outstanding Researcher of the Year (twice), USU MAE 2006-2010 5-Year Outstanding Researcher, MAE Outstanding Researcher of the Year (thrice), and MAE Outstanding Teacher of the Year.

Dates and Venue

20/11/2015, Friday – From 8:30 to 18:30; 21/11/2015, Saturday – From 8:30 to 16:00

Room: Sala Ferrari, DIMEAS (II Floor)

Acknowledgements and Contacts

This short course is organized by SCUDO in cooperation with the Marie Curie project FULLCOMP (www.fullcomp.net). For more info about this course and the FULLCOMP project, please contact Prof. Erasmo Carrera and Dr. Marco Petrolo (erasmo.carrera@polito.it, marco.petrolo@polito.it, www.mul2.com).