

ADMISSION TO DOCTORAL STUDIES

Session September 2024

Field of doctoral studies: Mechanical Engineering

Doctoral supervisor: Prof.dr.eng.Maria Luminita Scutaru

TOPICS FOR THE ADMISSION TO DOCTORAL STUDIES

TOPIC 1: Analytical methods in the dynamics of multibody systems with biomechanical applications

Contents / Main aspects to be considered - *to be adapted/ completed/ deleted*

1. *Development and analysis of mathematical models for multibody systems with biomechanical structures*
2. *Investigation of analytical methods for simulating the dynamics of multibody systems*
3. *Experimental testing and data analysis for validation of analytical models*

Recommended bibliography:

1. Maria Luminita Scutaru – Mecanica- Cinematică și dinamica,Editura Universitații Transilvania Braşov, ISBN 978-606-19-0851-6, 2016
2. W. Schiehlen- Advanced Multibody System Dynamics, Springer, 2010
3. Josep M Font - Multibody Dynamics, Computational Methods and Applications, Springer, 2016
4. Sorin Vlase, Marin Marin. Iuliu Negrean, Maria Luminița Scutaru, New analytical formalisms used in finite element analysis of robots with elastic elements, JOURNAL OF TAIBAH UNIVERSITY FOR SCIENCE, 2020, FI=1,863
5. Vlase S., Marin M, Ocshnar A., Scutaru M.L. Motion equation for a flexible one-dimensional element used in the dynamical analysis of a multibody system, Springer, Continuum mechanics and thermodynamics, Vol 31, pg 715-724, 2019, FI=1,578

Prerequisites / Remarks: *to be adapted/ completed/ deleted*

Scientific Doctorate (full-time only)

~~**Professional Doctorate – in the fields of Music and Science of sport and physical education (full-time or part-time)**~~

without tuition fee (state budget funded)

with tuition fee or with funding from other sources than the state budget

Doctoral supervisor,

Prof. Dr.Eng. Maria Luminita Scutaru

Signature

Coordinator of the field of doctoral studies,

Prof. Dr.Eng. Sorin Vlase

Signature