



Şcoala Doctorală Interdisciplinară
(SDI)

Domeniul de doctorat:

INGINERIE MECANICĂ

Conducător doctorat:

Prof.hab.dr.ing. SCUTARU Maria Luminița

TEME (TEMATICĂ) PENTRU CONCURS

TEMA 1: *Contribuții privind stabilitatea sistemelor mecanice cu două grade de libertate*

Conținut / Principalele aspecte abordate -

Metode de analiză a sistemelor cu mai multe grade de libertate.

Rezolvarea numerică a sistemelor de ecuații diferențiale.

Sisteme cu 2 grade de libertate.

Verificări experimentale.

Bibliografie recomandată:

1.Huston, R.L., - Multibody dynamics. Butterworth-Heinemann, 1990

2.Maria Luminita Scutaru – Mecanica –Dinamica.Teorie și aplicații, Editura Universității Transilvania Braşov, ISBN 978-606-19-0443-3, 2014

3. Timoshenko,S.P., Gere,J.M., Theory of Elastic Stability, Dover Publication Inc., Mineola, New York, 2009.

Note /Precondiții / Obs: *se va adapta /completa/elimina, după caz*

TEMA 2: *Efectul radiațiilor ionizante asupra materialelor compozite*

Conținut / Principalele aspecte abordate -

Materiale compozite

Efectul radiației asupra materialelor compozite.

Aplicații industriale ale materialelor compozitelor iradiate.

Verificări experimentale.

Bibliografie recomandată:

1. P. K. Mallick, Fiber Reinforced composites, Materials, Manufacturing and Design, U. of Michigan-Dearborn și F. a. T. E. C. R. C. P. Group, Ed., University of MichiganDearborn, Editura CRC Press Taylor and Francis Group , Boca Raton London New York, International Standard Book Number-13: 978-0-8493-4205-9, 2008.

2. K. K. Autar, Mechanics of Composite Materials second edition, F. a. T. E. Group, Ed., Editura Tailor and Francis Group, International Standard Book Number-13: 978-0-8493- 1343-1, 2006.

3. ANSYS, Introduction to Contact, ANSYS Mechanical Structural Nonlinearities, ANSYS, Inc. Proprietary 2010, 2010

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Transilvania
University
of Brasov

ADMISSION TO DOCTORAL STUDIES

2020-2021

Session September 2020

**Interdisciplinary Doctoral School
(SDI)**

Field of doctoral studies:

MECHANICAL ENGINEERING

PhD supervisor:

Prof.hab.dr.ing. SCUTARU Maria Luminița

TOPICS FOR THE ADMISSION TO DOCTORAL STUDIES

TOPIC 1: *On the stability of mechanical systems with two degrees of freedom*

Content / Main aspects to be considered -

Analysis Methods of systems with more degrees of freedoms.

Numerical approach of systems of differential equations.

Systems with two degrees of freedom.

Experimental tests.

Recommended bibliography:

1.Huston, R.L., - Multibody dynamics. Butterworth-Heinemann, 1990

2.Maria Luminita Scutaru – Mecanica –Dinamica.Teorie și aplicații, Editura Universității Transilvania Brașov, ISBN 978-606-19-0443-3, 2014

3. Timoshenko,S.P., Gere,J.M., Theory of Elastic Stability, Dover Publication Inc., Mineola, New York, 2009.

Prerequisites / Remarks: *se va adapta /completa/elimina, după caz*

TOPIC 2: *Radiation effects on composite materials*

Content / Main aspects to be considered -

Composite materials.

Radiation effect on composite materials.

Industrial applicatios of composite materials.

Experimental tests.

Recommended bibliography:

1. P. K. Mallick, Fiber Reinforced composites, Materials, Manufacturing and Design, U. of Michigan-Dearborn și F. a. T. E. C. R. C. P. Group, Ed., University of MichiganDearborn, Editura CRC Press Taylor and Francis Group , Boca Raton London New York, International Standard Book Number-13: 978-0-8493-4205-9, 2008.

2. K. K. Autar, Mechanics of Composite Materials second edition, F. a. T. E. Group, Ed., Editura Tailor and Francis Group, International Standard Book Number-13: 978-0-8493- 1343-1, 2006.

3. ANSYS, Introduction to Contact, ANSYS Mechanical Structural Nonlinearities, ANSYS, Inc. Proprietary 2010, 2010

Prerequisites / Remarks: *se va adapta /completa/elimina, după caz*

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