Introduction to the Department

SZÉCHENYI ISTVÁN UNIVERSITY Department of Applied Mechanics

Established in 2007.

Earlier called the Department of Machine Design and Mechanics

Initial staff: 8 Persons
Current staff: 14 Persons

- 12 Lecturers, 1 Administrator, 1 Technical Assistant
- 1 Full Professor, 1 Associate Professor, 3 Senior Lecturers, 2 Assistant Lecturers, 1 Teacher of Engineering, 4 Laboratory Engineer
- 4 Persons with PhD degree, 2 Persons PhD Students (Gödöllő, Győr)

Bachelor courses:

Mechanical Engineering, Mechatronics Engineering, Vehicle Engineering, Transportation Engineering, Engineering Management, Vocational Teacher

Subjects: Statics (2+2), Strength of Materials (2+2), Dynamics (2+2), Vibrations (2+2), Finite Element Method (2+2), Mechanisms (2+2)

Master courses:

Vehicle Engineering, Mechatronics Engineering, Transportation Engineering, Logistics Engineering, Mechanical Engineering

Subjects: Applied Mechanics (2+2), Theory of Elasticity (2+2), Finite Element Analysis (2+2), Machine Dynamics (2+2)

Doctoral School: Continuum mechanics, Application of the Finite Element Method in Engineering

Bachelor courses

Mechanics-Statics (2 Lectures + 2 Seminars + 2 Consultations)
Compulsory for Students of Mechanical Engineering, Mechatronics Engineering, Vehicle Engineering, Transportation Engineering, Engineering Management, Vocational Teacher Training
Optional for Students of Civil Engineering, Electrical Engineering, Information Technology in Economics

Mechanics-Strength of Materials (2 Lectures + 2 Seminars + 2 Consultations)
Compulsory for Students of Mechanical Engineering, Mechatronics Engineering, Vehicle Engineering, Engineering Management, Vocational Teacher Training
Mechanics-Dynamics (2 Lectures + 2 Seminars + 2 Consultations)
Compulsory for Students of Mechanical Engineering, Mechatronics Engineering, Vehicle Engineering, Transportation Engineering, Vocational Teacher Training
Optional for Students of Civil Engineering, Electrical Engineering, Information Technology in Economics

Mechanics-Vibrations (2 Lectures + 2 Seminars + 2 Consult.)
Compulsory for Students of Mechanical Engineering, Mechatronics Engineering, Vehicle Engineering, Technical Teacher Training

Finite Element Method (2 Lectures + 2 Seminars + 2 Consultations)
Compulsory for Students of Mechanical Engineering, Technical Teacher Training, Mechatronics Engineering, Vehicle Engineering

Mechanisms (2 Lectures + 2 Seminars + 2 Consultations)
Compulsory for Students of Mechanical Engineering, Technical Teacher Training, Mechatronics Engineering, Vehicle Engineering

Master courses

Applied Mechanics (2 Lectures + 2 Seminars + 2 Consultations)
Compulsory for Students of Mechatronics Engineering, Logistics Engineering, Transportation Engineering, Mechanical Engineering, Engineering Management

Finite Element Analysis (2 Lectures + 2 Seminars + 2 Consult.)
Compulsory for Students of Mechatronics Engineering, Vehicle Engineering, Mechanical Engineering

Theory of Elasticity (2 Lectures + 2 Seminars + 2 Consultations)
Compulsory for Students of Vehicle Engineering, Mechanical Engineering

Machine Dynamics (2 Lectures + 2 Seminars + 2 Consultations)
Compulsory for Students of Vehicle Engineering, Mechanical Engineering

Doctoral School

Continuummechanics
Application of the Finite Element Method in Engineering

Doctoral topics

Engineering Doctoral School of Szent István University Gödöllő
Experimental investigation and FE modelling and analysis of carbon and glass fibre reinforced plastics, failure criteria.
Supervisor: M. Csizmadia Béla, Co-Supervisor: Égert János
Research Projects

1. Modelling and simulation of internal combustion engines and vehicle structures, using the finite element method
   (SZE Internal Research Project, Duration: 2008-2012)
   Partner: Department of Internal Combustion Engines.
   FE modelling and optimum shape and material design of internal combustion engines and vehicle structures.

2. Design and production of a prototype car dashboard panel made from fibre reinforced composites
   (BAROSS INRG ND07-ND-INRG5-07-2008-0066, Duration: 2009-2011)
   Partner: Meshining Engineering Ltd. Győr.
   Concepts of FE models, determination through experiments of material and strength behaviour of carbon and glass fibre reinforced composite materials.

3. Researching the industrial application possibilities of electroactive polymers
   (BAROSS INRG ND07-ND-INRG5-07-2008-0066, Duration: 2009-2011)
   Partners: Ental Ltd. Győr, Department of Mechatronics and Machine Design.
   Theoretical basis of the mechanical behaviour of electroelastic polymers.

4. Finite element modelling and measurement, validation of composites reinforced with long woven fibres
   (TÁMOP 4.2.1.B, Duration: 2010-2012)
   Partners: Departments of Széchenyi István University Győr, Pannon University Veszprémm.
   Main Project: Mobility and Environment: Research on the vehicle industry, energy and the environment in the Central – and Western-Transdanubian region
   Sub-project: Automotive materials and manufacturing technology research
   Development of an ultra-light race car chassis and wheel disc made of carbon fibre reinforced composites, using numerical and experimental engineering technologies.