Strength of materials (Ist Year of study, IInd SEMESTER)

Credit value (ECTS) 5

Course category
Fundamental discipline

Discipline Code: A.EMIAIA.F.111

Course holder:
Lecturer Dr. Constantin CHIRILĂ

Discipline objectives (course and practical works)

The course aims to make students acquire theoretical knowledge of strengt materials, linked to the stress faced agricultural machinery and food industry machinery components.

Practical work aims to make students acquire theoretical and practical knowledge related to the calculations of strength of materials for the agricultural machines and food industry machines components.

Contents (syllabus)

Course (chapters/subchapters)
Introductory notions of strengh materials
The extension stress and the compresion stress
The shear stress
The bending stress for straight bars
The torsion stress for straight bars
Static stability of the slender bars (buckling)
Combined stresses
Endurance strength
Flat plates

Practical works
Work safety rules; Units of measurement used in the art; Multiples and submultiples of units; Conversion tables measuring units. Study regarding the stress types, types of forces,types of bearing suportt; Notions of the mathematics applied in technique (trigonometric functions, arias).
Applications on vectors
Problems regarding torque and the force couple
Study regarding the characteristic curve - Hooke's Law
The extension stress problems;
The shear stress problems
The bending stress problems
The torsion stress problems
Problems of Static stability of the slender bars (buckling)
Knowledge assessment

Bibliography

1. Chirilă C., – Rezistenţa materialelor – Note de curs.;
2. Buzdugan Gh., – Rezistenţa materialelor. Editura academiei Republicii Socialiste România, Bucureşti, 1986;
3. Drobotă V. - Rezistenţa materialelor - Editura Didactică şi Pedagogică, Bucureşti. 1982;
4. Mocanu D. R. - Rezistenţa materialelor - Editura Tehnică, Bucureşti, 1980

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Exam	written assessment	65%
Appreciation of the activity during the semester	Oral assessment during the semester, verification tests and final laboratory colloquium.	35%

Contact

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