

# COURSE GUIDE – short form

Academic year 2014-2015

Course name <sup>1</sup>	<b>Strength of Materials 2</b>					Course code	MTC.207. DI. DID		
Course type <sup>2</sup>	DID	Category <sup>3</sup>	DI	Year of study	2	Semester	4	Number of credit points	5

Faculty	Mechanical Engineering	Number of teaching and learning hours <sup>4</sup>							
Field	Mechanical Engineering	Total	L	T	LB	P	IS		
Specialization	Toate specializările (trunchi comun)	112	28	28	14	-	42		

Pre-requisites from the curriculum <sup>5</sup>	Compulsory	-
	Recommended	Mathematical Analysis, Mechanics, Materials Science, Strength of Materials 1

General objective <sup>6</sup>	Strength of Materials 2 complements the knowledge transmitted to students by discipline Strength of Materials 1. In preparatory chapter the fundamental concepts of theory of elasticity (which are needed in the coming years for disciplines Finite Element Analysis, Machine Design etc.) are presented.
Specific objectives <sup>7</sup>	<ul style="list-style-type: none"> <li>• Learning the fundamental notions of the theory of elasticity;</li> <li>• Learning the failure theories used for compound state of stress;</li> <li>• Solving the static and hyperstatic systems (frames, curved bars);</li> <li>• Calculation of straight bars of non-circular section, subjected to torsion;</li> <li>• Calculation of bodies of revolution (vessels, tubes, discs);</li> <li>• Conventional calculation of beams loaded by shock.</li> </ul>
Course description <sup>8</sup>	Elements of theory of elasticity; The potential energy of deformation; Failure theories; Calculus for compound state of stress; Frames; Curved bars; Straight bars of non-circular section, subjected to torsion; Thin-walled vessels; Thick-walled tubes; Spinning discs; beams loaded by shock.

Assessment			Schedule <sup>9</sup>	Percentage of the final grade (minimum grade) <sup>10</sup>
Continuous assessment	Class tests along the semester		Week 5 & 11	10 %
	Activity during tutorials/laboratory works/projects/practical work		Week 1-14	30 %
	Assignments		Week 1-14	10 %
Final assessment	Final assessment form <sup>11</sup>	Exam	Exam session	50%
	Examination procedures and conditions: Written examination over a period of three hours; 4 issues (three issues and theoretical topic): 1. Compound state of stress (problem); working conditions: mixed; percent of the final grade 25 %; 2. Frames or curved bar (problem); working conditions: mixed; percent of the final grade 25 %; 3. Vessels, tubes, discs or torsion (problem); working conditions: mixed; percent of the final grade 25 %; 4. Theoretical subject: hypothesis, reasonings, demonstrations; working conditions: mixed; percent of the final grade 25 %.			

Course organizer	Prof.dr.ing. Barsanescu Paul-Doru	
Teaching assistants	S.I. dr.ing. Leitoiu Bogdan S.I.dr.ing. Dumitru Mihai, drd.ing. Ana Comanici (David)	

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<sup>1</sup> Course name from the curriculum

<sup>2</sup> DF – fundamental, DID – in the field, DS – specialty, DC – complementary (from the curriculum)

<sup>3</sup> DI – imposed, DO – optional, DL – facultative (from the curriculum)

<sup>4</sup> Points 3.8, 3.5, 3.6a,b,c, 3.7 from the Course guide – extended form (L-lecture, T-tutorial, LB-laboratory works, P-project, IS-individual study)

<sup>5</sup> According to 4.1 – Pre-requisites - from the Course guide – extended form

<sup>6</sup> According to 7.1 from the Course guide – extended form

<sup>7</sup> According to 7.2 from the Course guide – extended form

<sup>8</sup> Short description of the course, according to point 8 from the Course guide – extended form

<sup>9</sup> For continuous assessment: weeks 1 – 14, for final assessment – colloquium: week 14, for final assessment-exam: exam period

<sup>10</sup> A minimum grade might be imposed for some assessment stages

<sup>11</sup> Exam or colloquium