

## Course title: Rheological properties of concrete

<b>Module basic data</b>			
<b>Academic unit:</b>	<b>Faculty of Civil Engineering</b>		
<b>Module title:</b>	<b>Rheological properties of concrete</b>		
<b>Level:</b>	<b>Master</b>		
<b>Module status:</b>	<b>Elected</b>		
<b>Study year:</b>	<b>Second (II), Semester III</b>		
<b>Weekly hours:</b>	<b>2+0</b>		
<b>Credit value – ECTS:</b>	<b>3</b>		
<b>Time / venue:</b>	<b>According to time table</b>		
<b>Module professor:</b>	<b>Prof.ass.Dr. Hajdar Sadiku</b>		
<b>Contact details:</b>	<b>e-mail: <a href="mailto:hajdar.sadiku@uni-pr.edu">hajdar.sadiku@uni-pr.edu</a></b>		
<b>Module description</b>			
<b>Module description</b>	Subject: Rheological properties of concrete include: General knowledge of rheological properties of concrete. Mechanical characteristics and especially the elasticity modulus, factors affecting the elasticity modulus, shrinkage deformations and deformations of the elongation, theoretical and experimental methods for determining deformations by shrinkage and cracking.		
<b>Module outcome:</b>			
<b>Module outcome:</b>	Course Objectives: To recognize students with the opportunity to experiment with rheological characteristics. Have the opportunity to get acquainted with defining deformities in the process over time. Get acquainted with the experimental assignment of these deformations.		
<b>Learning achieved results:</b>			
<b>Learning achieved results:</b>	To gain insight into the factors affecting mechanical properties, and in particular the concrete elasticity modulus. Know to determine deformations by shrinkage in the long term process, Know to determine creep strains in particular the creep coefficient Know to offer the designers these rheological features		
<b>Learning activities loadness ( should correlate with student learning outcomes )</b>			
<b>Activity</b>	<b>Hours</b>	<b>Day/Week</b>	<b>Total</b>
Lessons	2	15	30
Practical work	0	0	0
Contact with lecturer/consultation	1	10	10
Field exercise	0	0	0
Colloquiums, workshops	0	0	0
Home works	1	7	7
Student individual work time	1	15	15
Final exam preparation	2	5	10

Time on evaluation process (tests quiz final exam )	2	1	2
Projects, presentation , etc	1	1	1
<b>Total</b>			<b>75</b>
<b>Teaching methodology:</b>	<b>Lessons and group exercise</b>		
<b>Evaluation methodology:</b>	<p>In the assessment, the percentage of participation of any partial or intermediate evaluation in the final evaluation should be determined. One of the ways of evaluation would be as follows:</p> <p>First evaluation: 25%</p> <p>Second Assessment 25%</p> <p>Homework or other commitments 10%</p> <p>Regular attendance 10%</p> <p>Final exam 30%</p> <p>Total 100%</p>		
<b>Literatur</b>			
<b>Basic literatur :</b>	[1] Prof. Ass. Dr. Hajdar Sadiku Rheological properties of concrete (master lectures), FNA, Prishtina		
<b>Complementary literature:</b>	<p>[1] Prof. Dr. Fetah Jagxhiu, Reologjia e betonit (ligjërata për magjistraturë), FNA, Prishtinë</p> <p>[2] Prof asoc. Dr. Fisnik Kadiu, Teknologjia e materialeve të ndërtimit, FIN, Tiranë</p> <p>[3] Mang Tia Yanjun Liu Danny Brown MODULUS OF ELASTICITY, CREEP AND SHRINKAGE OF CONCRETE Department of Civil &amp; Coastal Engineering University of Florida May 2005.</p>		

<b>Learning proces plan:</b>	
<b>Week order</b>	<b>Lecture to be developed</b>
<i>First week:</i>	<b>Mechanical properties of concrete</b>
<i>Second week:</i>	<b>Analytical expressions and experimental methods for determining the elastic modulus</b>
<i>Third week:</i>	<b>Factors affecting the elasticity modulus</b>
<i>Fourth week:</i>	<b>Analytical expressions for determining shrinkage deformations</b>
<i>Fifth week:</i>	<b>Experimental methods for determining deformation by shrinkage</b>
<i>Sixth week:</i>	<b>Factors affecting deformation by shrinkage</b>
<i>Seventh week:</i>	<b>Analytical expressions for determining deformations by dragging</b>
<i>Eighth week:</i>	<b>Experimental methods for determining distortion deformations</b>
<i>Ninth week:</i>	<b>Factors affecting creep deformations</b>
<i>Tenth week:</i>	<b>Possible mechanisms for determining the creep coefficient</b>
<i>Eleventh week:</i>	<b>Presentation of Experiments developed in different countries around the world regarding the rheological characteristics</b>
<i>Twelfth week:</i>	<b>Algebraic varices for deformations from shrinkage and creep</b>
<i>Thirteenth week:</i>	<b>Calculation of deformations by shrinkage in axial gain</b>
<i>Fourteenth week:</i>	<b>Calculation of deformations by creep in axial alignment</b>
<i>Fifteenth week:</i>	<b>Numerical examples</b>

**Academic polices and bon sense rules:**

the teacher sets the criteria for regular attendance in lectures and exercises and rules of conduct: (keeping quiet in learning, removing mobile phones, entering the hall in time, etc.)