

<b>Course title: Fracture mechanics</b>	<b>Neptun code: GEMTT543-a</b>
<b>Course coordinator: Simon-Koncsik Zsuzsanna Ph.D., associate professor</b>	
type and number of lesson: lecture, 2 hours/ week	
method of accountability: colloquium	
curriculum location of the subject: autumn/spring	
pre-study conditions: -	
<b>The task and purpose of the subject:</b>	
Analysis of the most dangerous crack-like material continuity defects in engineering structures and their impact on safe operability.	
<b>Course description:</b>	
Basic concepts of fracture mechanics. Fracture modes, fracture criteria. Interpretation of stress collection factors. Modes of crack propagation. Fracture toughness and test methods. Fracture mechanics metrics for ferrous and non-ferrous metals. The role of fracture mechanics in engineering design.	
<b>Required literature:</b>	
<ol style="list-style-type: none"> <li>1. A. T. Zehnder: Fracture Mechanics, Springer, ISBN 978-94-007-2594-2, 2012, pp. 1-221.</li> <li>2. T.L. Anderson: Fracture Mechanics, Fundamentals and Applications, Taylor &amp; Francais, ISBN 978-0-8493-1656-2, 2005, pp. 1-611.</li> </ol>	
<b>Recommended literature:</b>	
<ol style="list-style-type: none"> <li>1. D. Gross, T. Seeling: Fracture mechanics, With an Introduction to Micromechanics, Springer, ISBN-10 3-540-24034-9, 2006. pp. 1-315.</li> <li>2. J.M. Barsom, S. T. Rolfe: Fracture and Fatigue Control in Structures: Applications of Fracture Mechanics, ASTM, ISBN 0-8031-2082-6, 1999, pp. 1-507.</li> </ol>	