

Course title: Weldability of Materials	Neptun code: GEMTT512-a
Course coordinator: Dr. Raghawendra Pratap Singh Sisodia, associate professor, PhD	
type and number of lesson: lecture 2 hours/ week	
method of accountability: colloquium	
curriculum location of the subject: autumn	
pre-study conditions: -	
The task and purpose of the subject:	
Learning about the weldability of basic metals that can be processed by welding in industrial practice.	
Course description:	
Cracks occurring in welded joints, methods to avoid the appearance of cracks. Weldability of conventional structural steels. Weldability of high-strength steels, high-carbon steels, creep-resistant steels, cryogenic steels, stainless steels and heat resistant steels. Weldability of cast steel and cast iron. Weldability of light metals and non-ferrous metals. Weldability of special metals and their alloys.	
Required literature:	
<ol style="list-style-type: none"> 1. ASM Handbook, 10th Edition, Volume 6.: Welding, Brazing, Soldering, p: 1-1299 2. Lippold, J.C.: Welding Metallurgy and Weldability, John Wiley & Sons, Hoboken, New Jersey, USA, 2015. p. 1-400. 3. Granjon, H.: Fundamentals of Welding Metallurgy, Abington Publishing, Cambridge, 1991. p. 1-178. 	
Recommended literature:	
<ol style="list-style-type: none"> 1. Easterling, K.: Introduction to the Physical Metallurgy of Welding, London, Butterworths, 1983. p. 1- 104. 2. Porter, D. A, Easterling, K. E., Sherif, M. Y.: Phase Transformations in Metals and Alloys, 4th Edition, CRC Press, Taylor and Francis Group, 2022 	