UNIVERSITY of DEBRECEN

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Name of the course:	**Composites**
Course type:	Optional
Responsible lecturer:	Dr. István Budai
Content:	Advanced materials are developed to meet the challenges of high-performance material properties for engineering and structural applications. The ability of these materials to absorb stresses and dissipate strain energy thus offer engineers a range of mechanical, thermal, chemical and damage-tolerance advantages with limited drawbacks. The subject will provide a comprehensive understanding of the current status and future directions of engineering materials, the latest technologies and their innovative uses, as well as the challenges and opportunities of these materials. Material types, design, manufacturing, modelling, properties and applications will be comprehensively discussed, ranging from traditional materials to advanced composites such as nanocomposites, self-healing and smart composites.
Literature:	• It Meng Low, Yu Dong ed.: Composite Materials Manufacturing, Properties and Applications Elsevier 2021 ISBN: 9780128205129 • Amar Patnaik, Malay Kumar Banerjee, Ernst Kozeschnik, Albano Cavaleiro, J. Paulo Davim, Vikas Kukshal: Advanced Materials and Manufacturing Processes, CRC Press 2021 ISBN 9780367553746 • Sumit Bhowmik, Jagadish, Kapil Gupta: Modeling and Optimization of Advanced Manufacturing Processes, Springer, Cham 2019 eBook ISBN 978-3-030-00036-3