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| ***Name of subject:***  **Packaging and Paper Technology I.** | ***NEPTUN-code:***  RMTPT1FENE | ***Number of hours:*** *lec+gs+lab*  1+0+1 | ***Credit:*** 2  ***Requirement:*** practice mark |
| ***Course coordinator:***  László Koltai Phd | **Rank:**  associate professor | ***Pre-requisite:***  - | |
| ***Subject content:*** | | | |
| History of paper and paper- and pulp production. Position and future of the paper industry in the Hungarian and world economy. Semi-finished products of paper industry. Pulps and rawmaterials: mechanical, thermo-mechanical semi-finished chemical cellulose pulp and bleaching. Pulp preparation. Fiber pulping, sizing, filling, refining, coloring. Papermachines and the type of its structural arrangement. Cardboard and sheet production. The presentation operations, calenders. Paper after-processing. Areas of paper processing. Corrugated board production. | | | |
| ***Bibliography:*** | | | |
| 1. Mark J. K.: Paper and Paperboard Packaging Technology 2005 by Blackwell Publishing Ltd. | | | |
| 2. Herbert Holik (Editor): Handbook of Paper and Board, ISBN: 978-3-527-33184-0 | | | |
| 3. J. F. Hanlon: Handbook of Package Engineering, Third Edition ISBN-13: 978-1566763066 | | | |
| 4. <https://elearning.uni-obuda.hu/> electronic notes and aids prepared by the instructor | | | |

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| ***Name of subject:***  **ECO Frendly Packaging Materials** | ***NEPTUN-code:***  RMTKC1EVNE | ***Number of hours:*** *lectures+* classroom practice*+*lab practice  0+0+2 | ***Credit:*** 2  ***Requirement:*** midyear mark |
| ***Subject owner:***  Cecília Tamásné Nyitrai Phd | **Rank:**  Associate Professor | ***Pre-requisite:***  RMTPA1EVNE | |
| ***Subject content:*** | | | |
| Environmental design and packaging development int he XXI. century.  Trademarks of ECO friendly packagings.  The relevant environmental laws in packaging industry. Eco profiles of packagings.  Biopolymer packaging materials. Degradation process of plastics. Types and environmental aspects of biodegradable polymer materials. Oxo-degradable polymer materials.  Recycling opportunities of glass, metal and textile packaging materials. Recycling and composting options for paper packaging. Intelligent packagings. | | | |
| ***Bibliography:*** | | | |
| 1. Miguel Abellian. Eco Packaging Design ISBN: 978-84-15223-40-5 | | | |
| 2. Design guidelines for sustainable packaging, Packaging Guidelines v. 1.0  © 2006 GreenBlue | | | |
| 4. <https://elearning.uni-obuda.hu/> | | | |
| Remark: | | | |