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| The title of the course | **Materials Science: Polymers** |
| Faculty | [Faculty of Mechanical Engineering and Computer Science](http://eng.ath.bielsko.pl/index.php/faculties/gerg) |
| The level of studies | Undergraduate (BA)  Postgraduate (MA)  Engineer (BSc) |
| Semester | Winter |
| The form of classes and number of hours | Laboratories |
| Language of instruction | English |
| The number of ECTS | **3 ECTS** |
| Teacher | Izabella Rajzer, PhD |
| The aims of the course  (maximum 500 characters) | This course is an introductory course in the structure, properties, and applications of polymers and composites. |
| The content of the course: main topics and key ideas | Introduction, overview of Polymeric Materials (1h);  Types of polymers:  Thermoplastics - general properties and their applications (3h)  Thermosetting Plastic - general properties and their applications (2h)  Elastomers - general properties and their applications (2h)  Classification of Composites, Polymer Matrix Composites, Types of composite reinforcement (2h); |
| Didactics methods | Presentations and discussions |
| Course requirements | presentation/attendance |
| Literature (basic and supplementary) | 1. Muralisrinivasan Subramanian. Basics of Polymers. Momentum Press 2015.  2. B. T. Astrom, Manufacturing of Polymer Composites, Nelson Thornes, UK, 2002.  3. A. Brent. Strong Fundamentals of Composites Manufacturing: Materials, Methods and Applications. 2008.  4. M. F. Ashby, Technology of the 1990s: Advanced Materials and Predictive Design, Philosophical Transactions of The Royal Society of London A322, 393–407, 1987.  5. F. L. Matthews and R. D. Rawlings, Composite Materials: Engineering and Science, Chapman & Hall, London, 1994. |
| The effects of the education   * knowledge * skills * social competences | Having successfully completed the course, the student will:  -Have a basic knowledge of polymers: their structure, processing, properties, and performance.  - Have practical experience in the search, retrieval, and analysis of scientific papers/literature.  - Have practical experience in presentation of scientific information |