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**Materials:**

Metallic Alloys, Tool Materials, Superplastic Materials, Ceramics and Glasses, Composites, Amorphous Materials, Nanomaterials, Biomaterials, Multifunctional and Smart Materials, Engineering Polymers

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**Properties:**

Ductility and Crack Resistance, Fatigue, Creep-resistance, Fracture Mechanics, Mechanical, Electrical, and Magnetic Properties, Corrosion and Erosion, Wear Resistance, Non-Destructive Testing, Reliability Assessment, Toxicity, Working Properties of Materials and Products

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**Methodology of Research:**

Electron Microscopy, X-ray Phase Analysis, Metallography and Quantitative Metallography, Image Analysis, Computer Assistance in the Engineering Tasks and Scientific Research

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**Analysis and Modelling:**

Numerical Techniques, Statistic Methods, Residual Life Analysis, Process Systems Design, Mould Flow Analysis, Rapid Prototyping, CAD/CAM, CAMS, CAQ, Engineering Design, Constructional Design, Technological Design, Materials Design, Applied Mechanics, Computational Material Science and Mechanics, Materials and Engineering Databases, Expert Systems, Artificial Intelligence Methods

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**Manufacturing and Processing:**

Casting, Powder Metallurgy, Welding, Sintering, Heat Treatment, Thermo-Chemical Treatment, Thin & Thick Coatings, Surface Treatment, Machining, Plastic Forming, Quality Assessment, Automation Engineering Processes, Robotics and Mechatronics, Technological Devices and Equipment

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**Cleaner Production and Biotechnology:**

Theoretical Fundamentals of Cleaner Production, Industrial Application of Cleaner Production, Biotechnology

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**Industrial Management and Organisation:**

Production and Operations Management, Production Planning and Control, Manufacturing Technology Management, Quality Management, Environmental Management, Safety and Health Management, Project Management, Physical Distribution and Logistics Management, Supply Chain Management, Productivity and Performance Management

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**Education and Research Trends:**

Development of New Curricula for BSc and MSc Studies in the field of Materials Science, Manufacturing and Mechanical Engineering, Challenges of the Widening Labour Market, Complementary Roles of Developed and Developing Nations in Promoting a Global Industrial and Economical Infrastructure and Requirements on Common International Research and Teaching Development in the field of Materials, Manufacturing and Mechanical Engineering, Computer Aided Teaching, E-learning

Only papers positively pre-reviewed by at least two reviewers are published in the Journal



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**Institute of Engineering Materials and Biomaterials**  
**Faculty of Mechanical Engineering**  
**SILESIA UNIVERSITY OF TECHNOLOGY**

**PROJECT**



**infonano**

## **Priority courses**

-  **Nanotechnology and Technologies of Materials Processes**
-  **Applied Computer Science with Computational Materials Science**
-  **Materials Engineering** with 4 education profiles:
  -  **Dental Engineering**
  -  **Surface Engineering**
  -  **Management Engineering**
  -  **Processes Automation**

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