

**Course title:** Introduction to Powder Metallurgy  
**Institute/Division:** Institute of Materials Engineering, Faculty of Materials Engineering and Physics  
**Number of contact hours:** 30 hours  
**Course duration:** 1 semester  
**ECTS credits:** 5

**Course description:**

This course is introducing the science and technology related to the Powder Metallurgy (P/M) process which is rapidly growing source of near-net shaped parts for industry. The success of the P/M process derives from its ability to mass-produce complex structural parts with savings in labor, material, and/or energy.

The course covers topics on:

overview of Powder Metallurgy products and processing,  
powder production,  
powder preparation,  
testing and characterization of powders,  
the forming of powders,  
sintering, processes and equipment,  
post-processing,  
the testing of sintered materials,  
modern sintering methods.

**Literature:**

1. Randall M German - Powder Metallurgy Science 1994 Publisher Metal Powder Industries Federation
2. Randall M German - Powder Metallurgy and Particulate Materials Processing: The Processes, Materials, Products, Properties and Applications 2005 Publisher Metal Powder Industries Federation
3. Powder Metallurgy Processing and Materials 1997 Werner Schatt and Klaus-Peter Wieters European Powder Metallurgy Association

**Course type:** lectures (15 hours), classes (15 hours)  
**Assessment method:** oral answer, report on classes exercises  
**Prerequisites:** none  
**Primary target group:** Materials Science  
**Lecturer:** dr hab. inż. Marek Hebda, prof. PK  
**Contact person:** Marek Hebda, e-mail: mhebda@pk.edu.pl