Title:	Polymer Science: Fundamentals and Applications of Thermal Analysis
Lecture hours:	30
Study period: (summer/winter)	Summer or winter
Number of credits:	4 ECTS
Assessment methods:	Written reports on performed experiments
Language of instruction:	English
Prerequisites:	Basic knowledge of polymer science.
Course content:	Scanning differential calorymetry (DSC): enthalpy measurements, determination of crystallinity, enthalpy relaxation of glassy polymers, heat capacity measurements, practical problems and applications; Thermogravimetric analysis (TG); Dynamic mechanical analysis (DMA).
Learning outcomes:	The main goal of the course is to give students practical knowledge how to perform: scanning differential calorymetry (DSC), thermogravimetric analysis (TG) and dynamic mechanical analysis (DMA). During this course students will be acquainted with both the fundamentals of the thermal analysis techniques as well as the practical issues associated with the running of experiments and interpretation of the results. All experiments will be performed with the use of new commercial instrumentations.
Name of lecturer:	Piotr Rytlewski
Contact (email address):	prytlewski@ukw.edu.pl
Literature:	• Joseph D. Menczel (Editor), R. Bruce Prime (Editor) "Thermal Analysis of Polymers: Fundamentals and Applications", Wiley 2009 • T. Hatakeyama , F. X. Quinn "Thermal Analysis: Fundamentals and Applications to Polymer Science" Wiley 1999. • Bernhard Wunderlich, „Thermal Analysis of Polymeric Materials" Springer 2005