



Course name	Testing pigments and binders
Entity running the course	Faculty of Ceramics and Glass / Department of Conservation and Restoration of Ceramics and Glass
Entity for which the course has been prepared	
Course type	Core course, compulsory course.
Year of study/semester; Type of studies	Year V, sem. 9; full time master's degree studies
ECTS credits	2
Academic tutor	Ph.D. Zbigniew Burski
Aim of the course	The aim of the course is to familiarize the student with the methods of testing pigments and binders, natural and synthetic, necessary for proper conduct of the conservation and restoration works at historical buildings.
Prerequisites	The IV year of the study passed.
Learning outcomes:	
- <i>knowledge</i>	The student knows different methods of testing pigments and binders used in the conservation and restoration of works of art. They know how to select a test. They know how to take samples for testing.
- <i>skills</i>	The student independently decides who should make a test, they try to independently interpret the test results intended to be used in the process associated with the conservation and restoration of historical objects. The student can take samples for testing. The student is able to analyze the obtained test results and use them in planning the conservation and restoration treatment.
- <i>personal and social competence</i>	The student is able to critically assess the steps taken in relation to outsourcing tests. They can co-operate with the specialists of various fields. They understand the need for extending their knowledge in relation to the development of new research methods.
Course content	The history of the research of historical objects, taking samples for testing, preliminary tests, microbiological tests, physical and chemical testing, testing on cross sections, pigments and dyes, natural binders, UV, infrared, IR spectroscopy, X-ray, XRD and DTA-TG research (X-ray diffractometry, thermal differential analysis in combination with thermogravimetry), XRF spectral analysis, NMR nuclear magnetic resonance, gas, tissue-paper and thin-film chromatography, identification of pigments, binders, natural and synthetic – the examples from conservation and restoration documentation.
Course form and number of course hours	Lecture, 15 hours/sem.
Assessment methods and criteria	30% active participation in classes. 70% exam at the end of the semester.
Assessment type	Semester 9 - graded pass.

Literature	<p><i>Badania technologii i technik malarskich. Konserwacja dzieł sztuki, kopia, /Research of painting technologies and techniques. Conservation of the works of art, a copy/, UMK Toruń 2007, (Mikołaj Kopernik University of Toruń 2007), Piotr Rudniewski, /Pigmenty i ich identyfikacja, /Pigments and their identification/ ASP Warszawa (Warsaw Academy of Art And Design), Script no.13, Warszawa 1995, R.M. Silverstein, C.G. Bassler, /Spektroskopowe metody identyfikacji związków organicznych, /Spectroscopic methods for the identification of organic compounds/ Warszawa 1970., John S. Mills, Raymond White, /The organic chemistry of museum objects, London 2003, Victoria L. Oakley, Jain K. Kamal, /Essentials in the Care and Conservation of Historical Ceramic Objects, London 2002, Jarosław Rogóż /Zastosowanie technik nieniszczących w badaniach konserwatorskich malowideł ściennych, /The use of non-destructive techniques in the study of conservation of murals/ UMK Toruń 2009, (Mikołaj Kopernik University of Toruń 2009).</i></p>
Teaching aids	
Language of instruction	Polish