

Program of the Postgraduate Study: Surface Coatings. Process and Application.

Cracow University of Technology.

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Chapter	Thems	Hrs
Chemistry and processing of polymers	Chemical & process background of coatings polymers	15
Processing of surface coatings	Definitions, chemistry, history, technical and application functions of coatings.	2
	Types of coatings, structure review.	2
	Pigments & Extenders	3
	Additives, rheology modifiers, solvents, hardeners, catalysts.	8
	VOC reduction.	2
	Film forming and hardening of the coating films.	2
	Design of coatings' formulations. Optimisation by function, properties, and costs, examples.	5
Coatings' groups.	Decorative coatings for mineral substrates	5
	Decorative wood coatings.	3
	Systems and coatings for corrosion protection	12
	Preparation of substrates for application	4
	Deffects of coating films	4
	Industrial & OEM coatings. Application techniques. Application equipment and installations.	8
	Carrefinish coating systems	2
Areas of coatings' development	Nano materials technology.	2
	UV/EB curing coatings	2
	Powder coatings	2
	The newest trends in coatings' development. Functional coatings	6
Production equipment and installations.	Production processes of solventborne and waterborne coatings.	5
	Mixing and dispersion	3
	Machines, equipment, production installations.	12
	Resins production.	4
Technical specifications and tests methodology.	Laboratory equipment	4
	Colour theory, measurements and design.	2
	Problem solving workshop.	2
	R&D and QC labs organisation and funktions. Research programming.	3
	Technical specifications and test methods of liquid coatings and films.	7
	Practical work in R&D and QC laboratories.	12
Safety, Health, Environment.	Legal basics	2
	Safety in production, storage, transport and application.	6
	Fire safety	3
	Atex requirements	2
	Wastes, waste waters, emissions, environment protection	4
Total		160