

CT5100	Repair and maintenance of construction materials	4
Instructor	Alex Fraaij	
Education Period	1st Education Period	
Exam Period	1st Exam Period	
Course Language	English	
Course Contents	<p>This course deals into greater depth with durability aspects and the maintenance and repair of materials in constructions. The course is obliged for students who want to get their MSc degree in Materials Science at the Faculty of Civil Engineering and Geosciences.</p> <p>Topics are: degradation of concrete, metals, wood, polymers and bitumen/asphalt maintenance technology, strategies and management quality systems and certification examples from practice presented by experts from the field such as: protection and maintenance and repair of steel structures protection and maintenance and repair of concrete structures protection of wood in constructions the monitoring of asphalt roads, repair and re-use of old asphalt in road constructions inspection methods, aspects concerning environment and ARBO as well as economics paint systems Failure Mode Analyses</p>	
Study Goals	<p>After the course the student has gained knowledge on the theories of maintenance, repair, quality systems and certifications on the one hand as well as on the degradation behaviour of materials on the other hand. The cases will help the student to apply the two aspects at the operational level.</p>	
Education Method	lectures discussion case study excursion	
Literature and Study Materials	obligatory lecturenote(s)/textbook(s): Book of prof. Bijen "Durability of Engineering Structures" Available at the secretariat of the section Materials Science of the Department of Civil Engineering. recommended other materials: Hand-outs and powerpoint presentations Available at the section secretariat	
Assessment	oral presentation, practice(s) (3 cases), active participation of the workshops at the excursions	
Remarks	Lectures will be given partly in the classrooms at the Department of Civil Engineering and partly during an excursion at the site by the instructor and experts in the field. The student is requested to prepare 3 cases on topics discussed at the excursion in groups and to participate actively in the discussion sessions during the excursions.	
Judgement	Based on the results of the cases (75%), presentation and discussion with experts in het field (25%)	