

**SHORT COURSE CERTIFICATE Reference 2107**

Name of the course	Emissions and System Analysis (Phân tích hệ thống và phát thải)	
Contact person	first name	Minh Ngoc
	surname	Ha
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Workload for participants	5 days a 6 hours	
Learning Outcomes (LO)	After attending this course, participants <ul style="list-style-type: none">- have a basic understanding where plastic waste is generated and which factors have influence on plastic waste generation;- are able to explain costs and benefits of plastic waste recycling;- understand the development of business plans in the recycling industry;- recognize policy approaches which are used for plastic waste management;- understand how Life Cycle Assessment can be used for the planning and monitoring of plastic waste management;- are able to characterize common approaches for citizen engagement in waste management.	
Target groups	Employees from companies and environmental management related governmental bodies	
Prerequisites	A basic knowledge of emissions and environmental concepts will help students to get the most out of this course. The course covers emissions analysis and basic general concepts about plastic waste and Life Cycle Assessment of plastic waste	
Description of the course	This course provides puts plastic waste in the wider context of regulations, economic aspects, system analysis and consumer behaviour. Plastic waste is part of household waste, industrial waste and agricultural waste, the generation of plastic waste is explained. In terms of economic aspects, the economic benefits of plastic waste recycling are explained. Further related cost and fees systems as well as business plan development are explained. A case study for a business plan of a recycling facility in Laos provide further details. For plastic waste policies, global trends and regulations in Vietnam and Laos are given. Policy instruments such as command and control approaches and market-based instruments are explained. For the system analysis of plastic waste implication, Life Cycle Assessment is introduced. The concept of citizens engagement is shown..	
Overview of the syllabus	<ul style="list-style-type: none">- Plastic waste generation (ppt slides)- Economic aspects (ppt slides)- Policy and legislation (ppt slides)- LCA based environmental system analysis (ppt slides)- Plastic management though citizens engagement (ppt slides)	
Teaching and learning methods	This course will be taught in front-of-class teaching and in the future with Flipped Classroom and PBL learning method.	
Assessment of LO	The final evaluation of this course will be provided by combining the following parts: <ul style="list-style-type: none">- Attendance & course contribution: 20%- Midterm exam by project solving: 20%- Final exam: 60%.	
Trainer	<ul style="list-style-type: none">• Assoc.Prof.Dr. TRAN Dinh Trinh, Environmental Chemistry• Dr. PHAM Thanh Dong, Environmental Chemistry• Dr. DANG Nhat Minh, Environmental Chemistry	

Reviewer 1	Prof. Dr.-Ing. Kerstin Kuchta, Technical University Hamburg
Reviewer 2	Dr. Sujitra Vassanadumrongdee, Chulalongkorn University, Bangkok



SEA-ABT

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Dr. Gerhard Schleining

