

**SHORT COURSE CERTIFICATE Reference 2109**

Name of the course	Emissions and System Analysis (ແຫຼ່ງກຳເນີດຂີ້ເຫຍື້ອປລາສຕິກ ແລະ ການວິເຄາະລະບົບ)	
Contact person	first name	Vatthanamixay
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Workload for participants	5 days a 8 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	<ul style="list-style-type: none">• Staff and managers of waste collection companies, waste recovery and waste recycling companies;• - Students and lecturers in educational institutions	
Prerequisites	Basic knowledge of waste management, environment and chemistry.	
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	Lecture, VDOs, group works, practical exercises, study tour and excursion at a plastic recycling facility	
Assessment of LO	Pre-test and post-test; group work presentation of a cost-benefit analysis case study	
Trainer	<ul style="list-style-type: none">• Dr. Vatthanamixay Chansomphou• Ms. Amphai Darasouk• Trainer 3*: Ms. Souvanna Phengsisomboun	

Reviewer 1	Prof. Dr.-Ing. Kerstin Kuchta, Technical University Hamburg
Reviewer 2	Dr. Sujitra Vassanadumrongdee, Chulalongkorn University, Bangkok
Date of Certification	2021-04-14
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SEA-ABT

Association for supporting education and training at the Academy for Beverage Technology

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Dr. Gerhard Schleining