

Solid Waste Management Planning using GIS and Remote Sensing Technologies / Huyen T. T., Kay K.K., Emmanuelle S., Olive N., Anzim A.

	Topic name	Learning outcomes	Learning activities /Assignments	Basic learning materials
Day 1	Principles and knowledge of solid waste management	☐ enhance knowledge and understand key principles of solid waste management ☐ generalize the basic concepts and principles in waste management ☐ associate the public health importance of solid and liquid waste management ☐ Identify the main types of waste and their sources	☐ Group work 5 students in each, discuss the conditions of SW management in their countries (communication skill) 20 minutes ☐ Write down the health problems related to solid waste management using Google docs ☐ Understand the types of solid waste and their sources form lectures	☐ (Solid Waste Management Principles and Practice Book by Ramesha nt Chandrappa) Reading Material ☐ http://www.worldbank.org/en/topic/urbandevelopment/brief/solid-waste-management(World bank web page) ☐ Lectures by professors
Day 2	Review on technologies and their usage in solid waste monitoring and management system	☐ Overview the types of technologies using in solid waste management ☐ Analyze the challenges and issues of these technologies	☐ To describe one technology which is suitable for your country (Productive skill)	☐ Research paper (Hannan, M.A., Al Mamun, M.A., Hussain, A., Basri, H., Begum, R.A., 2015. A review on technologies and their usage in solid waste monitoring and management systems: Issues and challenges. Waste Management 43, 509–523.) ☐ Lectures by professors
Day 3	Solid waste dumping site suitability analysis using GIS and Remote sensing	☐ Implement GIS and Remote sensing technologies for solid waste management	☐ Demonstration of using R and QGIS for land use and land cover classification ☐ Develop Project works in three topics (Hydrology, Geomorphology, Land use land cover classification)	☐ Research paper (Ebistu, T.A., Minale, A.S., 2013. Solid waste dumping site suitability analysis using geographic information system (GIS) and remote sensing for Bahir Dar Town, North Western Ethiopia. African Journal of Environmental Science and Technology 7, 976–989.) ☐ LANDSAT-TM satellite image ☐ DEM image of the study area ☐ R and QGIS ☐ Case study in Ouagadougou, Burkina Faso
Day 4	Solid waste dumping site suitability analysis using GIS and Remote sensing	☐ develop capacities to plan a solid waste management system for decision makers	☐ Prepare project work presentations form each groups ☐ Combine three topics and draw final conclusion for selection of dump site suitability	☐ Assistantship for students by lecturers during their project work. ☐ Presentation by story maps
Day 5	Solid waste management policies and legal frameworks	☐ Distinguish solid waste policy, both domestic and international ☐ examines appropriate methods of storage, collection, transfer, treatment and disposal appropriate for industrialized and developing countries	☐ Read Solid Waste Management and Legal framework in the European Union and Discuss which kind of legislation can be applied for developing countries ☐ Create poster by handwriting on developing framework outline for SWM (choose your own study area).	☐ https://ppp.worldbank.org/public-private-partnership/sector/solid-waste/waste-laws-regulations(World Bank Group) website ☐ Introduction to Solid Waste Management and Legal framework in the European Union Mr. ADRIAN COOPER, Chairman, West Midlands Resource Technical Advisory Body, United Kingdom. (Reading material)