



<b>ULO LF-1</b>	<b>TITLE:</b> <b>Plan landfill infrastructure construction</b>		EQF 6
<b>Work tasks:</b>	<b>Ensure the proper planning and construction of the landfill</b>		
<b>Weighting:</b>	1		
<b>Learning outcomes:</b> LO 1: Ensure proper planning and effective construction of landfill bottom liner system LO 2: Ensure proper planning and effective construction of a landfill final capping system LO 3: Ensure proper and effective construction of landfill leachate collection and treatment systems LO 4: Ensure proper planning and effective construction of landfill gas collection and utilisation system LO 5: Ensure proper planning and effective construction of a storm water drainage system LO 6: Ensure that effective security systems, within the landfill premises, are implemented			
<b>Knowledge</b> <i>(assimilation of knowledge throughout learning)</i>	<b>Skills</b> <i>(Ability to apply knowledge)</i>	<b>Competences</b> <i>(Measure of responsibility and autonomy; ability to use knowledge, skills, social abilities)</i>	
<b>1) Plan and construct bottom liner system</b>			
<ul style="list-style-type: none"> <li>- Demonstrate an advanced knowledge through the identification of different liner systems (from single to composite)</li> <li>- Determine in detail the different materials used in landfill bottom liner systems</li> </ul>	<ul style="list-style-type: none"> <li>- Demonstrate mastery by using technical, environmental and economic criteria to conduct a feasibility analysis for the construction of a landfill bottom liner system</li> </ul>	<ul style="list-style-type: none"> <li>- Supervise planning, development and application of a bottom liner system</li> <li>- Monitor working processes for the selection and application of a landfill bottom liner system</li> <li>- Ensure that landfill operations have minimal impact to the environment</li> </ul>	



<b>2) Plan and construct a final capping system</b>		
<ul style="list-style-type: none"><li>- Describe in detail the objectives of a landfill final capping system</li><li>- Demonstrate a critical understanding of different components to be included in the final capping system</li></ul>	<ul style="list-style-type: none"><li>- Demonstrate mastery by using technical, environmental and economic feasibility analysis criteria for the construction of a final capping system</li></ul>	<ul style="list-style-type: none"><li>- Supervise planning, development and application of a landfill final capping system</li><li>- Monitor working processes for the selection and application of a landfill final capping system</li><li>- Ensure that landfill operations have minimal impact to the environment</li></ul>
<b>3) Design and construct leachate collection/ treatment systems</b>		
<ul style="list-style-type: none"><li>- Demonstrate a critical understanding of the principles of leachate collection systems</li><li>- Demonstrate an advanced knowledge of the factors that influence the effectiveness of leachate collection systems</li><li>- Demonstrate an advanced knowledge of the factors which can cause blockage of landfill leachate systems</li></ul>	<ul style="list-style-type: none"><li>- Demonstrate advanced skills by checking parameters of the leachate collection / treatment system and by identifying appropriate solutions if these parameters are not maintained</li></ul>	<ul style="list-style-type: none"><li>- Ensure that landfill operations have minimal impact to the environment for soil and groundwater sources</li><li>- Supervise planning, development and application of a landfill leachate system</li><li>- Monitor working processes for the selection and application of a landfill leachate system</li></ul>
<b>4) Plan and construct gas collection/ utilisation system</b>		
<ul style="list-style-type: none"><li>- Demonstrate a critical understanding of the principles of landfill gas collection systems and the factors which have an influence on their effectiveness</li></ul>	<ul style="list-style-type: none"><li>- Check the parameters of the gas collection/ utilisation system and identify appropriate solutions if these parameters are not maintained</li></ul>	<ul style="list-style-type: none"><li>- Supervise planning, development and application of a landfill gas collection and utilisation system</li><li>- Monitor working processes for the selection and application of a landfill gas collection and utilisation system</li></ul>



### 5) Plan and construct a storm water drainage system

<ul style="list-style-type: none"><li>- Demonstrate a critical understanding of the principles of landfill storm water drainage systems and the factors which impact their effectiveness</li><li>- Determine in detail how to minimise/prevent storm water entering leachate collection system</li></ul>	<ul style="list-style-type: none"><li>- Check the parameters of the storm water and drainage system and identify appropriate solutions if these parameters are not maintained</li></ul>	<ul style="list-style-type: none"><li>- Supervise planning, development and application of a landfill storm water drainage system</li><li>- Monitor working processes for the selection and application of a landfill storm water drainage system</li></ul>
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### 6) Manage landfill security system

<ul style="list-style-type: none"><li>- Identify in detail the risks related to landfill site security</li></ul>	<ul style="list-style-type: none"><li>- Design procedures for a SWF security system</li></ul>	<ul style="list-style-type: none"><li>- Monitor security processes within the landfill premises</li><li>- Assume responsibility for landfill site security</li><li>- Ensure that procedures are effectively implemented</li></ul>
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<b>ULO LF-2</b>	<u>TITLE:</u> <b>Manage waste landfill daily operations</b>	EQF 6
<b>Work tasks:</b>	<b>Manage all site operations</b>	
<b>Weighting:</b>	2	
<p><b><u>Learning outcomes:</u></b> LO 1: Identify and understand the correct procedures for the reception of waste in line with current and best operational practices          LO 2: Ensure the development and implementation of landfill entry point procedures          LO 3: Develop effective filling sequence plans          LO 4: Ensure proper landfill working face operations          LO 5: Ensure proper waste compaction          LO 6: Ensure proper construction of daily and intermediate cover          LO 7: Ensure proper operation of gas landfill extraction and collection system          LO 8: Develop and implement effective reporting systems for landfill operation</p>		
<p style="text-align: center;"><b>Knowledge</b> <i>(assimilation of knowledge throughout learning)</i></p>	<p style="text-align: center;"><b>Skills</b> <i>(Ability to apply knowledge)</i></p>	<p style="text-align: center;"><b>Competences</b> <i>(Measure of responsibility and autonomy; ability to use knowledge, skills, social abilities)</i></p>
<p><b>1) Develop and maintain procedures for the reception of waste in line with current legislation and best operational practices</b></p>		
<p>- Identify in detail the legal responsibilities for the reception of waste and ensure that each</p>	<p>- Demonstrate mastery by consulting current and relevant information sources to identify</p>	<p>- Monitor procedures for the reception of waste according to the landfill specifications and in</p>



one is incorporated into the waste reception procedures	<p>the key aspects of waste reception procedures</p> <ul style="list-style-type: none"> <li>- Demonstrate advanced skills by regularly reviewing and amending waste reception procedures in line with current legislation and best practice</li> <li>- Obtain feedback from staff and crews on the procedures for the direction of waste delivery crews</li> </ul>	line with current legislation
<b>2) Manage landfill entry point procedures</b>		
<ul style="list-style-type: none"> <li>- Describe in detail the different types and properties of waste that can be landfilled</li> <li>- Describe in detail the procedures for the admission of different types of waste to the landfill site</li> </ul>	<ul style="list-style-type: none"> <li>- Ensure that the entry point procedures are effectively implemented</li> </ul>	<ul style="list-style-type: none"> <li>- Supervise and maintain entry point procedures</li> <li>- Ensure compliance of different types of incoming waste to the landfill site</li> </ul>
<b>3) Develop fill sequence plans</b>		
<ul style="list-style-type: none"> <li>- Demonstrate a critical understanding of the principles of a filling sequence plan development</li> </ul>	<ul style="list-style-type: none"> <li>- Demonstrate mastery by collecting and analysing qualitative and quantitative waste data, waste treatment needs of local communities and projected waste disposal forecasts</li> </ul>	<ul style="list-style-type: none"> <li>- Supervise development of filling sequence plans</li> </ul>
<b>4) Manage working face operations</b>		
<ul style="list-style-type: none"> <li>- Demonstrate a critical understanding of the</li> </ul>	<ul style="list-style-type: none"> <li>- Design and maintain procedures for landfill</li> </ul>	<ul style="list-style-type: none"> <li>- Assume responsibility for the implementation</li> </ul>



<p>principles and procedures for managing working face operations</p> <ul style="list-style-type: none"> <li>- Demonstrate a critical understanding of how landfill working face operations influence the environmental and economic performance of the landfill</li> </ul>	<p>working face operations</p>	<p>of landfill working face operations procedures</p> <ul style="list-style-type: none"> <li>- Ensure that procedures are effectively implemented</li> </ul>
<p><b>5) Manage waste compaction</b></p>		
<ul style="list-style-type: none"> <li>- Describe in detail the principles of waste compaction</li> <li>- Demonstrate an advanced knowledge on how the waste compaction process influences the environmental and economic performance of the landfill</li> </ul>	<ul style="list-style-type: none"> <li>- Design and implement procedures for waste compaction</li> </ul>	<ul style="list-style-type: none"> <li>- Manage the selection of resources and appropriate technologies for improving the efficiency of waste compaction processes</li> <li>- Ensure that procedures are effectively implemented</li> </ul>
<p><b>6) Construct daily and intermediate cover</b></p>		
<ul style="list-style-type: none"> <li>- Identify in detail the principles of daily and intermediate landfill cover constructions</li> <li>- Describe in detail the materials used for daily and intermediate cover constructions</li> </ul>	<ul style="list-style-type: none"> <li>- Ensure that plans for effective and efficient daily and intermediate cover operations are implemented</li> </ul>	<ul style="list-style-type: none"> <li>- Supervise the implementation of daily and intermediate cover operations</li> </ul>
<p><b>7) Manage gas landfill extraction and collection</b></p>		
<ul style="list-style-type: none"> <li>- Describe in detail the gas landfill production, extraction and collection procedures</li> </ul>	<ul style="list-style-type: none"> <li>- Develop or enforce procedures for normal operation, start-up, or shut-down of methane gas collection systems.</li> <li>- Demonstrate mastery by evaluating landfill</li> </ul>	<ul style="list-style-type: none"> <li>- Manage gas collection landfill operations, including gas management or rail operations.</li> <li>- Monitor and control gas landfill extraction systems.</li> </ul>



	gas collection service requirements to meet operational plans and productivity goals.	- Monitor gas collection systems emissions data, including bio methane or nitrous oxide levels.
<b>8) Manage reporting system on landfill waste control processes</b>		
- Demonstrate an advanced knowledge on the reporting principles and the operations that have to be documented	- Demonstrate advanced skills by compiling documents based on requests from the competent bodies and the local authorities - Demonstrate advanced skills by communicating reports to interested stakeholders and competent bodies	- Communicate and interact with local authorities and competent bodies - Assume responsibility for the contents of reports and the communication channels



<b>ULO LF-3</b>	<u>TITLE:</u> <b>Supervise the Landfill Mechanical Equipment and Infrastructure Operation</b>		EQF 6
<b>Work tasks:</b>	Run the landfill infrastructure		
<b>Weighting:</b>	1		
<p><b>Learning outcomes:</b></p> <p>LO 1: Describe of the operation of mechanical equipment used for landfill operations</p> <p>LO 2: Describe and analyse the landfill drainage and stormwater system operation</p> <p>LO 3: Describe and analyse the landfill gas collection and management system operation</p> <p>LO 4: Describe the landfill roads &amp; operational routes</p> <p>LO 5: Identify the properties and calculate the quantities of wastewater produced at landfill site and describe the treatment in the respective wastewater treatment plant</p>			
<p><b>Knowledge</b> <i>(assimilation of knowledge throughout learning)</i></p>	<p><b>Skills</b> <i>(Ability to apply knowledge)</i></p>	<p><b>Competences</b> <i>(Measure of responsibility and autonomy; ability to use knowledge, skills, social abilities)</i></p>	
<p><b>1) Describe and supervise the operation of mechanical equipment</b></p>			
<ul style="list-style-type: none"> <li>- Describe in detail the equipment for the different activities carried out at the landfill site</li> <li>- Describe in detail how to use the different equipment</li> </ul>	<ul style="list-style-type: none"> <li>- Design and assign the tasks using mechanical equipment during the everyday operation of the landfill</li> </ul>	<ul style="list-style-type: none"> <li>- Manage the coordination of the operation of equipment for different tasks within the landfill site operation</li> </ul>	
<p><b>2) Describe and supervise the operation of landfill site drainage and storm water system</b></p>			



<ul style="list-style-type: none"> <li>- Identify in detail the planning, structure and operational processes of the landfill drainage and storm water system</li> </ul>	<ul style="list-style-type: none"> <li>- Demonstrate mastery by analysing and evaluating good and effective operation of the landfill drainage and storm water system</li> </ul>	<ul style="list-style-type: none"> <li>- Assume responsibility for the continuous and effective operation of the landfill drainage and storm water system</li> </ul>
<b>3) Describe and supervise the operation of the landfill gas collection and management system</b>		
<ul style="list-style-type: none"> <li>- Demonstrate a critical understanding of the planning, structure and operational processes of landfill gas collection and management system</li> </ul>	<ul style="list-style-type: none"> <li>- Demonstrate advanced skills by analysing and evaluating the efficiency of the landfill gas collection and management system</li> </ul>	<ul style="list-style-type: none"> <li>- Assume Responsibility for the continuous and effective operation of the landfill gas collection and management system</li> </ul>
<b>4) Describe and supervise the operation of all landfill site road types</b>		
<ul style="list-style-type: none"> <li>- Describe in detail the operation, and types, of all roads &amp; routes inside the landfill site and for the access to the landfill site</li> </ul>	<ul style="list-style-type: none"> <li>- Modify the operation of all roads &amp; routes inside the landfill site and for the access to the landfill site</li> </ul>	<ul style="list-style-type: none"> <li>- Lead the working group for the planning and monitoring of routes inside the landfill site and access to it</li> </ul>
<b>5) Describe and supervise the operation of Wastewater Treatment Installation</b>		
<ul style="list-style-type: none"> <li>- Demonstrate a critical understanding of the processes from which the wastewater is produced</li> <li>- Demonstrate an advanced knowledge on the properties and estimate the quantities of produced wastewater</li> <li>- Describe in detail the processes applied to the treatment of wastewater produced during the landfill operation</li> </ul>	<ul style="list-style-type: none"> <li>- Demonstrate mastery in the analysis of the operation of Wastewater Treatment Installation</li> </ul>	<ul style="list-style-type: none"> <li>- Supervise the operation of the wastewater treatment installation</li> </ul>



<b>ULO LF-4</b>	<u>TITLE:</u> <b>Manage monitoring processes and equipment</b>	EQF 6
<b>Work tasks:</b>	<b>Control cell temperature, gas emissions and H &amp;S equipment according to the set standards and legislative limits</b>	
<b>Weighting:</b>	2	
<u>Learning outcomes:</u> <b>LO 1: Monitor temperature of landfill cells accurately</b> <b>LO 2: Monitor landfill gas emissions concentrations</b> <b>LO 3: Operate environmental and H&amp;S monitoring equipment in line with their respective parameters and their set (legislative) limits</b>		
<p style="text-align: center;"><b>Knowledge</b> <i>(assimilation of knowledge throughout learning)</i></p>	<p style="text-align: center;"><b>Skills</b> <i>(Ability to apply knowledge)</i></p>	<p style="text-align: center;"><b>Competences</b> <i>(Measure of responsibility and autonomy; ability to use knowledge, skills, social abilities)</i></p>
<b>1) Monitor landfill cells temperature</b>		
<ul style="list-style-type: none"> <li>- Demonstrate an advanced knowledge on the relation between landfill conditions and temperature</li> <li>- Describe in detail the methods and the equipment for temperature monitoring in landfills</li> </ul>	<ul style="list-style-type: none"> <li>- Evaluate the temperature data and correspond them to landfill site operation parameters</li> <li>- Demonstrate advanced skills by checking parameters and by identifying appropriate solutions if these parameters are not maintained</li> </ul>	<ul style="list-style-type: none"> <li>- Monitor landfill cells operation using the respective temperature data</li> </ul>



	<ul style="list-style-type: none"> <li>- Ensure the proper functioning of the temperature monitoring equipment</li> </ul>	
<b>2) Monitor Landfill Gas Emissions</b>		
<ul style="list-style-type: none"> <li>- Describe in detail methods and equipment for gas monitoring in landfills</li> </ul>	<ul style="list-style-type: none"> <li>- Demonstrate mastery by analysing landfill gas concentrations data and by corresponding them to landfill site operation parameters</li> <li>- Check parameters and identify appropriate solutions if these parameters are not maintained</li> <li>- Demonstrate advanced skills on the proper functioning of the landfill gas monitoring equipment</li> </ul>	<ul style="list-style-type: none"> <li>- Monitor landfill site operation based on measured landfill gas concentrations</li> </ul>
<b>3) Operation of environmental, Health &amp; Safety monitoring equipment</b>		
<ul style="list-style-type: none"> <li>- Demonstrate an advanced knowledge on the necessary equipment for monitoring environmental and H&amp;S parameters</li> <li>- Identify in detail the environmental and H&amp;S parameters to be monitored</li> <li>- Demonstrate an advanced knowledge on the proper functioning of the environmental, H&amp;S monitoring equipment</li> </ul>	<ul style="list-style-type: none"> <li>- Analyse and interpret the data acquired of the environmental, H&amp;S monitoring equipment and determine estimates</li> </ul>	<ul style="list-style-type: none"> <li>- Monitor the proper operation of the environmental, H&amp;S monitoring equipment</li> </ul>



<b>ULO LF-5</b>	<u>TITLE:</u> <b>Supervise the Facility's Mechanical Equipment and Infrastructure Maintenance</b>	EQF 6
<b>Work tasks:</b>	<b>Carry out the planning and compiling of a maintenance plan for the mechanical equipment and infrastructure</b>	
<b>Weighting:</b>	1	
<u>Learning outcomes:</u> <p> <b>LO 1: Compile and implement a maintenance plan for landfill mechanical equipment</b>  <b>LO 2: Compile and implement a maintenance plan for Wastewater Treatment installation</b>  <b>LO 3: Compile and implement a maintenance plan for the landfill drainage and storm water system</b>  <b>LO 4: Compile and implement a maintenance plan for the landfill gas collection and management system</b>  <b>LO 5: Compile and implement a maintenance plan for the landfill roads &amp; routes</b> </p>		
<p style="text-align: center;"><b>Knowledge</b> <i>(assimilation of knowledge throughout learning)</i></p>	<p style="text-align: center;"><b>Skills</b> <i>(Ability to apply knowledge)</i></p>	<p style="text-align: center;"><b>Competences</b> <i>(Measure of responsibility and autonomy; ability to use knowledge, skills, social abilities)</i></p>
<b>1) Plan and supervise the maintenance of Mechanical equipment</b>		
<ul style="list-style-type: none"> <li>- Identify in detail maintenance procedures and planning based on equipment operation and maintenance manuals</li> <li>- Define in detail the elements (time, budget) of the landfill mechanical equipment maintenance plan</li> </ul>	<ul style="list-style-type: none"> <li>- Ensure that the procedures described in the mechanical equipment Operational and Maintenance Manuals are effectively implemented</li> </ul>	<ul style="list-style-type: none"> <li>- Assume responsibility for mechanical equipment maintenance planning and implementation of maintenance procedures</li> <li>- Monitor the implementation of the mechanical equipment maintenance plan</li> </ul>



2) Plan and supervise the maintenance of Wastewater Treatment Installation		
<ul style="list-style-type: none"> <li>- Demonstrate a critical understanding on best practices for maintaining landfill Wastewater Treatment installations</li> <li>- Define in detail the elements (time, budget) of the landfill Wastewater Treatment installation maintenance plan</li> </ul>	<ul style="list-style-type: none"> <li>- Ensure that the procedures described in the mechanical equipment Operational and Maintenance Manuals for the wastewater treatment installation are effectively implemented</li> </ul>	<ul style="list-style-type: none"> <li>- Assume responsibility for Wastewater Treatment installation maintenance planning and implementation of maintenance procedures</li> <li>- Monitor the implementation of the wastewater treatment installation maintenance plan</li> </ul>
3) Plan and supervise the maintenance of landfill site drainage and stormwater system		
<ul style="list-style-type: none"> <li>- Describe in detail best practices for maintaining landfill drainage and storm water systems</li> <li>- Define in detail the elements (time, budget) of the landfill drainage and storm water system maintenance plan</li> </ul>	<ul style="list-style-type: none"> <li>- Ensure that the procedures described in the mechanical equipment Operational and Maintenance Manuals for the drainage and storm water system are effectively implemented</li> </ul>	<ul style="list-style-type: none"> <li>- Assume responsibility for drainage and storm water system maintenance planning and the implementation of maintenance procedures</li> <li>- Monitor the implementation of the drainage and stormwater system maintenance plan</li> </ul>
4) Plan and supervise the maintenance of the landfill gas collection and management system		
<ul style="list-style-type: none"> <li>- Describe in detail best practices for maintaining the landfill gas collection and management system in working order</li> <li>- Define in detail the elements (time, budget) of the landfill gas collection and management system maintenance plan</li> </ul>	<ul style="list-style-type: none"> <li>- Ensure that the procedures described in the mechanical equipment Operational and Maintenance Manuals for the gas collection and management system are effectively implemented</li> </ul>	<ul style="list-style-type: none"> <li>- Assume responsibility for the gas collection and management system maintenance planning and the implementation of maintenance procedures</li> <li>- Monitor the implementation of the gas collection system maintenance plan</li> </ul>
5) Plan and supervise the maintenance of all landfill site roads types		



<ul style="list-style-type: none"><li>- Describe in detail best practices for maintaining landfill roads &amp; routes</li><li>- Define in detail the elements (time, budget) of the landfill roads &amp; routes maintenance plan</li></ul>	<ul style="list-style-type: none"><li>- Demonstrate advanced skills on the factors which influence a successful implementation of the maintenance plan of landfill site roads</li></ul>	<ul style="list-style-type: none"><li>- Assume responsibility for roads &amp; routes maintenance planning and implementation of maintenance procedures</li><li>- Monitor the implementation of the landfill site roads maintenance plan</li></ul>
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<b>ULO LF-6</b>	<b>TITLE:</b> <b>Implement systems and procedures to prevent delivery of unauthorised waste</b>		EQF 6
<b>Work tasks:</b>	<b>Ensure the security on the landfill site as well as that staff comply with organisational procedures and deal with unauthorized waste</b>		
<b>Weighting:</b>	2		
<b>Learning outcomes:</b> LO 1: Identify techniques that can be used to ensure that waste delivery crews comply with organisational procedures LO 2: Understand and recognise the appropriate means of dealing with unauthorised wastes LO 3: Recognise the various means to maintain security of the site LO 4: Understand and recognise the appropriate actions that should be taken in the event of a breach of site security			
<p style="text-align: center;"><b>Knowledge</b> <i>(assimilation of knowledge throughout learning)</i></p>	<p style="text-align: center;"><b>Skills</b> <i>(Ability to apply knowledge)</i></p>	<p style="text-align: center;"><b>Competences</b> <i>(Measure of responsibility and autonomy; ability to use knowledge, skills, social abilities)</i></p>	
<b>1) Ensure that waste delivery crews comply with organisational procedures</b>			
<ul style="list-style-type: none"> <li>- Describe in detail the actions to take in the event of a breach in procedure by waste delivery crews</li> <li>- Demonstrate a critical understanding of</li> </ul>	<ul style="list-style-type: none"> <li>- Establish effective lines of communication</li> </ul>	<ul style="list-style-type: none"> <li>- Monitor waste crews activities regularly to ensure compliance</li> </ul>	



applicable legislation for waste delivery crews		
<b>2) Implement and maintain procedures for the management of unauthorised wastes</b>		
<ul style="list-style-type: none"> <li>- Identify in detail what constitutes to an "unauthorised waste"</li> <li>- Demonstrate a critical understanding on the management options for "unauthorised wastes" on site</li> <li>- Demonstrate a critical understanding of the reporting procedures that need to be followed in the case of managing unauthorised wastes</li> </ul>	<ul style="list-style-type: none"> <li>- Recognise when you may need to seek advice from experts on for the management of unauthorised waste and how to do this</li> <li>- Generate reports for the management of unauthorised waste</li> </ul>	<ul style="list-style-type: none"> <li>- Assume the overall responsibility for the management of unauthorised wastes</li> </ul>
<b>4) Implement and maintain systems to ensure security of the site</b>		
<ul style="list-style-type: none"> <li>- Demonstrate a critical understanding of the principals of site security</li> </ul>	<ul style="list-style-type: none"> <li>- Prepare plans for site security</li> <li>- Evaluate the security systems available for sites</li> <li>- Prepare plans and proposals for improving site security</li> </ul>	<ul style="list-style-type: none"> <li>- Assume responsibility of the overall landfill site security</li> </ul>
<b>5) Ensure staff is aware of security systems, and know the actions to take should a breach of site security occur</b>		
<ul style="list-style-type: none"> <li>- Understand when a situation is outwith staff's responsibility and seek advice from the relevant, competent people and/or authorities</li> </ul>	<ul style="list-style-type: none"> <li>- Prepare procedures relating to site security</li> <li>- Deal with situations involving a breach in site security</li> </ul>	<ul style="list-style-type: none"> <li>- Monitor the implementation of landfill site security procedures</li> <li>- Assume responsibility for landfill site security and instruct staff on their role in site security</li> </ul>



<b>ULO LF-7</b>	<u>TITLE:</u> <b>Manage fire prevention and control processes</b>		EQF 6
<b>Work tasks:</b>	<b>Prevent and deal with fires by installing an effective fire prevention program</b>		
<b>Weighting:</b>	1		
<b>Learning outcomes:</b> LO 1: Identify different types of landfill fires LO 2: Develop a fire prevention program LO 3: Plan and implement fire management and extinguishing procedures			
<b>Knowledge</b> <i>(assimilation of knowledge throughout learning)</i>	<b>Skills</b> <i>(Ability to apply knowledge)</i>	<b>Competences</b> <i>(Measure of responsibility and autonomy; ability to use knowledge, skills, social abilities)</i>	
<b>1) Identify types of fires</b>			
<ul style="list-style-type: none"> <li>- Identify in detail the causes that may cause a fire in the landfill site</li> <li>- Identify in detail the causes and the conditions that can cause a surface or subsurface fire at the landfill area</li> <li>- Demonstrate an advanced knowledge of categories of fires (level of alert)</li> <li>- Define in detail the techniques and good</li> </ul>	<ul style="list-style-type: none"> <li>- Develop and maintain procedures for fire identification, warning and alert procedures</li> </ul>	<ul style="list-style-type: none"> <li>- Monitor and supervise work procedures for fire identification and prevention</li> <li>- Ensure that fire identification procedures are effectively implemented</li> <li>- Lead the fire management team</li> </ul>	



practices to mitigate and control environmental consequences resulting from a fire		
<b>2) Develop fire prevention program</b>		
<ul style="list-style-type: none"><li>- Identify in detail the reasons for fire events in landfills</li><li>- Demonstrate a critical understanding of the principles for the development of effective fire prevention programs</li></ul>	<ul style="list-style-type: none"><li>- Develop a fire prevention and management plan</li><li>- Ensure that the fire prevention and management plan are carried out effectively</li><li>- Collaborate with Fire Authorities to prevent fire event in the landfill</li></ul>	<ul style="list-style-type: none"><li>- Assume responsibility of landfill fire prevention and management</li><li>- Lead the fire management team</li></ul>
<b>3) Develop fire extinguisher safety program</b>		
<ul style="list-style-type: none"><li>- Describe in detail fire extinguisher techniques</li><li>- Describe in detail the immediate actions to be implemented in case of a fire event</li></ul>	<ul style="list-style-type: none"><li>- Develop collaboration with Fire Authorities to train personnel in extinguishing landfill fires</li><li>- Design the implementation of fire extinguishing procedures</li></ul>	<ul style="list-style-type: none"><li>- Assume responsibility of the coordination of the fire extinguishing measures</li><li>- Lead the fire management team</li></ul>



<b>ULO LF-8</b>	<b>TITLE:</b> Describe, Monitor and Control Environmental Consequences		EQF 6
<b>Work tasks:</b>	Deal with environmental impacts		
<b>Weighting:</b>	1		
<b>Learning outcomes:</b> <ul style="list-style-type: none"> <li>LO 1: Prevent and manage the consequences of Water runoff and Storm water</li> <li>LO 2: Control and Monitor Leachate production</li> <li>LO 3: Control Solid Waste Dispersion in the landfill site and along the access routes</li> <li>LO 4: Prevent and Control Odour Emissions</li> <li>LO 5: Monitor and Manage Groundwater and surface water pollution</li> <li>LO 6: Manage and Implement bird control measures</li> <li>LO 7: Manage uncontrolled landfill gas production and emissions</li> <li>LO 8: Manage and Implement landfill remediation methods</li> </ul>			
<b>Knowledge</b> <i>(assimilation of knowledge throughout learning)</i>	<b>Skills</b> <i>(Ability to apply knowledge)</i>	<b>Competences</b> <i>(Measure of responsibility and autonomy; ability to use knowledge, skills, social abilities)</i>	
<b>1) Manage Storm water</b>			
- Identify in detail the causes and conditions for surface water run-on and runoff from the landfill	- Demonstrate mastery by developing a storm water prevention and management plan (including environmental	- Assume responsibility for the prevention and management of a storm water incident - Assume responsibility for the control and	



<ul style="list-style-type: none"> <li>- Demonstrate a critical understanding of the techniques and good practices to mitigate and control storm water and surface run-on and runoff from the landfill</li> </ul>	<p>consequences)</p> <ul style="list-style-type: none"> <li>- Demonstrate advanced skills by applying techniques and good practices to control storm water surface run-on and runoff from the landfill</li> </ul>	<p>mitigation of environmental consequences due to surface water run-on and runoff from the landfill</p>
<p><b>2) Leachates Control</b></p>		
<ul style="list-style-type: none"> <li>- Demonstrate an advanced knowledge on the origin of leachates</li> <li>- Determine in detail the physicochemical properties of leachates</li> <li>- Define in detail the techniques and good practices to mitigate and control production and final treatment of leachate</li> </ul>	<ul style="list-style-type: none"> <li>- Demonstrate advanced skills by applying techniques and good practices to mitigate control, production and final treatment of leachate</li> </ul>	<ul style="list-style-type: none"> <li>- Assume responsibility for the control and mitigation of environmental consequences due to leachates</li> </ul>
<p><b>3) Manage Solid Waste dispersion along site access routes</b></p>		
<ul style="list-style-type: none"> <li>- Identify in detail the reasons why and where solid wastes are dispersed along landfill site access routes</li> <li>- Define good practices to mitigate and control solid waste dispersion along landfill site access routes</li> </ul>	<ul style="list-style-type: none"> <li>- Demonstrate advanced skills by applying techniques and good practices to mitigate and control solid waste dispersion along landfill site access routes</li> </ul>	<ul style="list-style-type: none"> <li>- Assume responsibility for the control and mitigation of environmental consequences due to solid waste dispersion along landfill site access routes</li> </ul>
<p><b>4) Manage Odour Control Emissions</b></p>		
<ul style="list-style-type: none"> <li>- Identify in detail the sources, the causes and the conditions that may produce and disperse</li> </ul>	<ul style="list-style-type: none"> <li>- Demonstrate advanced skills by applying odour control techniques</li> </ul>	<ul style="list-style-type: none"> <li>- Assume responsibility for odour control problems and communicate solutions to the</li> </ul>



<p>bad odours from the landfill area</p> <ul style="list-style-type: none"> <li>- Describe in detail the techniques to monitor generated odours</li> <li>- Define in detail the techniques and good practices to control odours</li> </ul>	<ul style="list-style-type: none"> <li>- Collaborate with local Environmental Authorities in case of odour emissions and complaints</li> </ul>	<p>local authorities and citizens living near the landfill area</p> <ul style="list-style-type: none"> <li>-Ensure that odour control procedures are effectively implemented</li> </ul>
<p><b>5) Manage Groundwater and Surface water contamination</b></p>		
<ul style="list-style-type: none"> <li>- Identify in detail the causes of pollution of the groundwater and surface water within, and in the vicinity, of the landfill area</li> <li>- Describe in detail the techniques and practices to monitor Groundwater and Surface water contamination</li> </ul>	<ul style="list-style-type: none"> <li>- Demonstrate advanced skills by applying techniques and practices to monitor Groundwater and Surface water contamination</li> </ul>	<ul style="list-style-type: none"> <li>- Assume responsibility for the monitoring of Groundwater and Surface water contamination</li> <li>- Lead the management team for the control of Groundwater and Surface water contamination</li> </ul>
<p><b>6) Implement bird control measures</b></p>		
<ul style="list-style-type: none"> <li>- Describe in detail the methods for bird control (from operational practices to wires/screens)</li> <li>- Determine in detail the benefits/shortcomings of different methods for bird control</li> </ul>	<ul style="list-style-type: none"> <li>- Demonstrate advanced skills by developing and implementing procedures for bird control</li> </ul>	<ul style="list-style-type: none"> <li>- Assume responsibility for the implementation of bird control measures</li> <li>- Ensure that bird control procedures are effectively implemented</li> </ul>
<p><b>7) Manage Landfill gas emissions</b></p>		
<ul style="list-style-type: none"> <li>- Demonstrate an advanced knowledge on the techniques available to monitor production and characteristics of landfill gas</li> </ul>	<ul style="list-style-type: none"> <li>- Ensure that techniques and practices to control emissions and leakages of landfill gas are implemented</li> </ul>	<ul style="list-style-type: none"> <li>- Lead the management team responsible for the environmental and Health &amp; Safety consequences of uncontrolled landfill gas</li> </ul>



<ul style="list-style-type: none"> <li>- Determine in detail the relationship between landfill gas concentrations and fire at the landfill</li> <li>- Identify in detail the environmental and Health &amp; Safety consequences due to emissions and leakages of landfill gas</li> </ul>	<ul style="list-style-type: none"> <li>- Demonstrate mastery by ensuring the proper functioning of the landfill gas monitoring equipment</li> </ul>	<ul style="list-style-type: none"> <li>- Assume responsibility for the environmental consequences of uncontrolled landfill gas and associated control measures</li> </ul>
<b>8) Investigate, Select and Implement Remediation methods</b>		
<ul style="list-style-type: none"> <li>- Investigation and selection of remediation methods at landfill areas, such as:               <ul style="list-style-type: none"> <li>• Excavation/landfill mining</li> <li>• Landfill capping</li> <li>• Landfill surcharging</li> <li>• Soil Vapour Extraction and air sparging</li> </ul> </li> <li>- Implementation of the techniques of the landfill remediation methods.</li> </ul>	<ul style="list-style-type: none"> <li>- Demonstrate advanced skills by selecting and implementing remediation techniques at landfill areas</li> <li>- Ensure that selected remediation methods are properly implemented</li> <li>- Validate the results of the implemented remediation methods at the landfill area.</li> </ul>	<ul style="list-style-type: none"> <li>- Lead the management team responsible for the selection, design and development of the remediation method that will be implemented</li> <li>- Assume responsibility for the remediation of the landfill area and its restoration for other uses.</li> </ul>



<b>ULO LF-9</b>	<u>TITLE</u> <b>Energy Management</b>	EQF 6
<b>Work tasks:</b>	<b>Energy Management</b>	
<b>Weighting:</b>	2	
<b>Learning outcomes:</b> LO 1: Monitor Energy consumption LO 2: Energy management systems		
<p style="text-align: center;"><b>Knowledge</b>  <i>(assimilation of knowledge throughout learning)</i></p>	<p style="text-align: center;"><b>Skills</b>  <i>(Ability to apply knowledge)</i></p>	<p style="text-align: center;"><b>Competences</b>  <i>(Measure of responsibility and autonomy; ability to use knowledge, skills, social abilities)</i></p>
<b>1) Monitor Energy Consumption</b>		
<ul style="list-style-type: none"> <li>- Identification of energy needs and energy services procurement</li> <li>- Methods and equipment for energy monitoring in the facility (operating equipment and activities)</li> <li>- Demonstrate a critical understanding of the principles relating to the function of the measurement equipment</li> </ul>	<ul style="list-style-type: none"> <li>- Analyse energy data acquired in line with operational parameters and working equipment</li> <li>- Ensure the proper operation of the energy monitoring equipment and application of respective monitoring techniques</li> </ul>	<ul style="list-style-type: none"> <li>- Lead the management process that will identify and analyse facility's energy needs and associate acquired energy data to landfill operational parameters and equipment</li> <li>- Assume responsibility for the implementation of an energy management system</li> </ul>
<b>2) Develop and implement Energy management schemes – systems / LO 2</b>		



Energy Management		
<ul style="list-style-type: none"><li>- Energy policy development for efficient energy use</li><li>- Energy baseline identification and allocation of performance indicators</li><li>- Setting of targets and objectives to meet the policy</li><li>- Energy management procedures to be developed and implemented</li></ul>	<ul style="list-style-type: none"><li>- Integrate Energy management procedures into daily operational activities</li><li>- Design an Energy Monitoring Plan</li><li>- Conduct Energy monitoring</li><li>- Evaluate energy monitoring results</li><li>- Identify deviations and implement corrective actions</li><li>- Continually optimize energy performance and improve energy management.</li></ul>	<ul style="list-style-type: none"><li>- Coordinate the Energy Management team</li><li>- Instruct personnel on Energy management policies and implemented procedures</li><li>- Review energy policies</li><li>- Assume responsibility for raising awareness on the importance of energy management and for employees' training</li></ul>