FABRIC Asia

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Enriching Your Chemical Management Training for the Textile and Garment Sector

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Program on Promoting Sustainability in the Textile and Garment Industry in Asia (FABRIC)

Guideline for Trainers and Facilitators

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Enriching Your Chemical Management Training for the Textile and Garment Sector – Guideline for Trainers and Facilitators</td><td>Date

2021/05</td></tr>
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• Number of pages: 41
• Annexes: 1

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<tr><td colspan="2">Purpose

This document has been prepared to guide chemical management trainers and facilitators in integrating the GIZ Chemical Management Self-Learning training/course into their own chemical management related training and advisory services to factory representatives from the textile, ready-made garment and footwear sectors. The GIZ Chemical Management Self-Learning Course is being made available via the GIZ “atingi” learning platform (www.atingi.org).</td></tr>
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List of abbreviations used

CM	Chemical management
CMS	Chemical management system
DSHC	Digital Solutions for Substitution of Hazardous Chemicals in the Fashion Supply Chain initiative
FABRIC	GIZ Project on Promoting Sustainability in the Textile and Garment Industry in Asia
GHS	Globally Harmonized Systems of Classification and Labelling of chemicals
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
LU	Learning unit
MRSL	Manufacturer restricted substances list
PPE	Personal protective equipment
REMC	Resource efficient management of chemicals
RSL	Restricted substances list
SP	Session plan
VOC	Volatile organic compounds
ZDHC	Zero Discharge of Hazardous Chemicals initiative

1 About this guideline

The objective of this document is to provide guidance to trainers, learning facilitators, or service providers who assist factories in the textile and leather sectors with the implementation or upgradation of resource efficient management of chemicals (REMC), on how to best integrate the newly compiled GIZ Chemical Management (CM) Self-Learning training/course into their training and advisory service activities. The GIZ Chemical Management (CM) Self-Learning training/course was prepared under the project on *Promoting Sustainability in the Textile and Garment Industry in Asia* (FABRIC). The materials are primarily intended to help the trainer to guide factory personnel from textile and garment factories to increase their knowledge on chemical management and implement chemical management at the factory level. While the materials refer to international chemical management reference standards, the materials are not meant to ensure factories´ conformance to any such specific standards, but to enhance their ability to relate to the requirements of these standards as well as to take action towards achieving legal compliance and conformance to customer expectations.

The materials under the GIZ Chemical Management (CM) Self-Learning training/course into are based on and linked to the GIZ REMC toolkit, which consists of a handbook for Textile and Garment Factories on chemical management supported by guideline for trainers and service providers as well as additional learning materials for face-to-face or virtual training as developed under the GIZ Digital Solutions for Substitution of Hazardous Chemicals in the Fashion Supply Chain (DSHC) initiative. Additional modules will be included or linked over time to cater to additional sectors of the apparel industry, such as footwear and leather production.

The GIZ Chemical Management Self-Learning course and links to REMC materials are available via the GIZ administered “atingi” learning platform. The CM self-learning master materials are managed by the GIZ, which also looks after the review and updating of learning materials.

1.1 Overview of CM self-learning materials

The CM self-learning course consists of eleven topic-specific self-learning modules, of which eight are further subdivided into submodules called *learning units*. The topics and structure of the modules are based on the content and outline of REMC toolkit.

Section 3 of this trainer guideline provides an overview of the available modules and learning units. Each self-learning module consists of three components, including (1) a presentation with voiceover audio/text plus links to further reading materials on Slide 3, (2) quizzes, and (3) usually a practical assignment or two.

All presentations contain voiceover explanations, which are also available as text. Learners can proceed with the presentations at their own speed, controlling the movement and changes of individual slides. This allows learners sufficient time to reflect on and digest the contents.

The quizzes help learners to reflect on learning progress as well as recall the key takeaway messages from each module. The assignments are intended to guide learners towards the next step in practically translating the newly acquired knowledge from the module/learning unit into the context of the factory and workplace environment. To this regard, the *Next steps* or second to last slide of each presentation may also list specific suggestions on how to apply the newly acquired knowledge.

The training materials will be available in English as well as Arabic, Bengali, Chinese (Mandarin), French, Indonesian (Bahasa), Urdu and Vietnamese.

In order to ensure good use of the materials available, it is strongly suggested that users of this trainer guideline also familiarize themselves with the REMC toolkit and additional training materials (e.g. DSHC) corresponding guidelines for service providers. You can download the materials here:

www.sia-toolbox.net/solution/resource-efficient-management-chemicals-textile-and-leather-sector-companies

1.2 Target groups of this self-learning course

The primary target group of the CM self-learning program are factory representatives who are tasked with or involved in the implementation of chemical management in their respective factories. However, this self-learning program also aims at those who want to familiarize themselves with the concept, elements and requirements of chemical management in line with prevalent expectations in international textile/garment supply chains.

The CM self-learning materials are freely available via the following link: www.atingi.org/. There will be one chemical management course at atingi available which is fully accessible for all interested learners.

You as a trainer, learning facilitator, or service provider are invited to select and tailor the chemical management course and materials as available through the atingi platform to your own needs taking into account the specific training learning needs of the learners or clients you are catering to. Once you have registered yourself on atingi, you can use the atingi platform to create your own tailored courses based on the master material, make these available to your leaners under their your name and enroll interested learners in your courses. To this regard, it also possible to link the course and materials with other chemical learning courses or platforms. In section 4 you will find further guidance on how to enroll learners as well as track their learning progress.

When you register as a trainer, learning facilitator, or service provider with the GIZ, you can also obtain additional access to a domain reserved for meeting and exchanging with other chemical management trainers. For further information, refer to Section 4 of this guideline.

1.3 How to use this guideline

Section 2 of this guideline explains various options regarding how you as a trainer, learning facilitator, or service provider can employ or integrate the CM self-learning materials into your own training or advisory services.

Section 3 of this guideline provides a more detailed description of all the available CM self-learning modules. Apart from stating the purpose of the respective module, you will also find (i) an overview of the content of the modules and learning units, (ii) available materials (e.g. presentations, quizzes, assignments), (iii) references to additional training and reference material in the REMC toolkit (including the DHSC training materials), and (iv) the average estimated time required for completing the module or each of its learning units. In addition, most module descriptions also contain suggestions with regard to specific factory-level applications that you can consider as part of their factory support. This will allow you to decide which self-learning modules/learning units as well as additional REMC training materials you want to include into your course or factory outreach. Furthermore, the information in this section will also help you to plan the possible time required for your course and to schedule the same accordingly.

Section 4 contains an explanation on how to use the GIZ “atingi” learning platform, a Moodle based online learning environment, by which means the learning materials are provided. The learning platform and course management system is designed to help educators create effective online learning concepts and programs. This section includes a description of how to use and navigate the platform as well as how to enroll learners.

2 Linking the CM self-learning materials with training initiatives

The learning materials are structured in such a way that they allow for their flexible adaptation to the individual learner's needs and interests. You as trainers, learning facilitators, or service providers can decide in which way their learners complete the self-learning course. For example, learners may be asked to either work through the entire course at their own speed and schedule, go straight to selected modules of interest only or follow a sequence and schedule as set by the trainer.

With regard to linking the self-learning course on chemical management with external support activities such as training or advisory services, several options had been envisaged, of which four basic realizations are briefly described below (see 2.1).

One example of how to integrate the use of the CM self-learning materials into a CM training and outreach approach for factories can be found in the annex. This example is aligned with the standard factory engagement process as recommended in the GIZ REMC Guidelines for Services Providers (version 2017).

2.1 Option 1 – Stand-alone self-learning

Learners who enroll into the CM self-learning course can complete the course as a form of stand-alone training without further tutoring and blended learning support from your side. In this case, the participants/learners work through all the modules and complete the assignments provided on their own and at their own pace in accord with their own learning schedule. This option is particularly suitable for learners who are either not yet working in the area of CM or simply want to enhance their knowledge on chemical management prior to any implementation in the factory. There may be the possibility that the participants from factory settings may approach you for assisting them with the practical implementation (see Option 2 below) or for clarifying any open questions from the self-learning program.

Since certain parts of the training may also be useful for factory internal training on chemical management, we suggest that you encourage factory representatives to consider the integration of the training for basic or advanced training in their own factories. However, prior to doing this you may also suggest to or help the factory representatives to assess and select the materials with regard to their suitability in terms of relevance and content for the specific target group in a factory.

2.2 Option 2 – Integration into a blended learning approach

As per this option, the participation in the CM self-learning course is part of or integrated into a factory engagement initiative which goes beyond improving one´s knowledge on chemical management. In this setting, the self-paced learning modules are meant to help equipping the participants from the factory with basic knowledge and skills on chemical management. Experience shows that in many CM factory level initiatives, trainers, learning facilitators, or service providers need to spend considerable time and effort on establishing a similar basic level of understanding and knowledge about chemical management, before being able to proceed with action on the ground. In most cases, this usually happens through comprehensive face-to-face or virtual training workshops.

In such cases, you can use the self-learning materials to ensure that all factory participants have the same understanding about chemical management, without having to spend too much of your own time for this purpose. Once the learners have completed the course or selected course elements, you can follow-up, either through online-live sessions or face to face interactions. For this, you can use the

additional training and presentation materials, for which the links are provided on the platform. The online modules are aligned with as well as based on these additional materials. Alternatively, you can also use or refer to your own training or reference materials for these follow-ups.

In case such a blended approach is applied, you may first set-up their own course on the atingi platform based on or linking the same with all or selected modules of the GIZ CM self-learning course and additional training materials for the blended component of the planned training or factory engagement (e.g. GIZ REMC toolkit, DSHC). Then you can enroll their participants (learners) from the factories or other target group in their course. For further explanations on how to do so, please refer to section 4 of this document.

Subsequently, you act as a learning facilitator and guide your enrolled learners while these complete the various self-learning modules. The schedule for completing the self-learning part will be agreed in advance between you and the learners. For example, as determined by such a schedule, the learners may complete all or selected modules and learning units, before meeting with you, whether virtually or on face-to-face basis. Alternatively, the schedule may involve a step-by-step approach according to which learners and you interact after each module or a number of modules. In this context, you can decide which modules may be of actual relevance for addressing the specific training needs or situation.

During these face-to-face or virtual follow-up sessions with the learners, consider focusing on (i) reflecting the new knowledge contents provided in various self-learning modules, (ii) clarifying questions by the learners and (iii) supplementing the information in the self-learning modules/units with additional inputs, for example including some locally relevant context such as the national regulatory framework or buyer/brand-specific requirements. As mentioned before, you can use the additional presentation and training materials as available through the links provided for this purpose.

As part of these follow-up sessions, you can also integrate the various practical table-top exercises or assignments as additional individual or group work activities thus helping your learners to deepen their understanding of the respective topics. For this purpose, you can refer to the exercises provided in the self-learning modules/units as well as in the additional REMC materials. The latter also include detailed instructions on how to conduct and reflect these practical exercises.

Based on these knowledge inputs and practical exercises during the self-learning and follow-up sessions, you can then establish the link to the practical implementation of CM at the factory level. For this purpose, you can refer to the recommended *Next steps* at the end of the module or learning-unit presentations.

To summarize the main advantage of combining the self-learning course with the blended course, you can reduce the time otherwise required for delivering knowledge content and instead focus on reviewing and providing additional inputs (e.g. local context related requirements or practices) together the learners as well as addressing the questions and needs of individual participants.

2.3 Option 3 – Using materials in a face-to-face workshop

As a variation to option 2, it is possible to also directly integrate the self-learning presentations into virtual or face-to-face workshops with the learners, and use these instead of presentations and training materials such as your own or those available in the GIZ REMC Toolkit and DSHC). In this setting, your role would be to directly reflect on the content of the entire module or learning unit presentations (or parts of them) together with the participants of your workshop. For this option, however, please keep in mind that all participants are required to follow the same learning pace, i.e. not allowing them to tailor the learning settings to their own individual preferences (e.g. when and how to complete which learning unit).

2.4 Option 4 – Supplementing academic learning programs

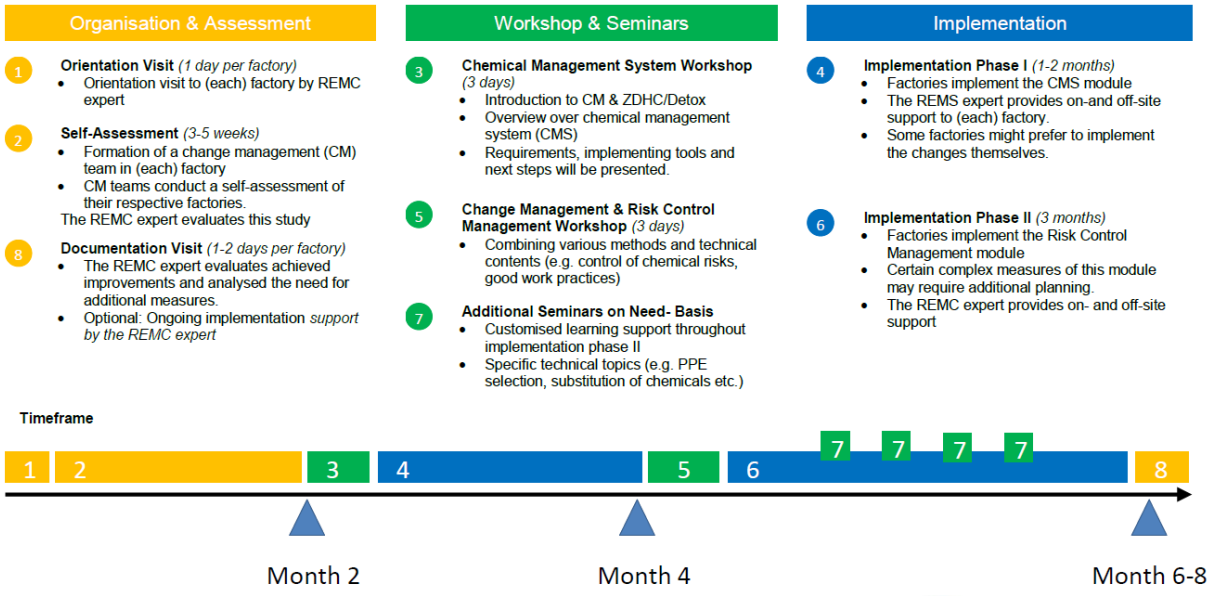
It is also envisaged that the CM self-learning materials or individual modules can be employed for supplementing existing training programs. Refer to descriptions of the individual modules to decide which ones may meet the requirements of these programs.

In line with this option, we also encourage the faculty from educational institutions (e.g. colleges and universities) to employ the CM self-learning materials as part of their training delivery. In this context the provided assignments can be utilized in connection with practical field work or groupwork for the course participants.

2.5 Scheduling options

Depending on the scheduling option determined, a variety of implementation approaches can be considered for the employment and/or completion of the CM self-learning materials as part of a factory improvement program (FIP). Figure1 provides an overview of the recommended steps in the implementation framework of the REMC Factory Improvement Program.

Figure 1 - Framework for the implementation of the Factory Improvement Program



In accord with this framework, the completion of the self-learning modules under Option 2 would be aligned with the steps (3) *Chemical management system workshop*, (5) *Change management & risk control management workshop*, and (7) *Additional seminars on a need basis*. The integration of the respective CM self-learning modules allows you to reduce the number of face-to-face workshop days required. Table 1 outlines the relationship between the modules/learning units of the self-learning course with the respective phase of the implementation framework.

Details about the modules/learning units of the self-learning course are provided in section 3. For a sample timeline, please refer to the example in the annex which is based on the above factory improvement (FIP) approach.

Table 1 – Self-learning modules and FIP approach

Self-learning module	Use in FIP step
Module 1: Introduction to chemical management	1, 3, 4
Module 2: Mapping of chemicals and chemical flows	2, 3, 4
Module 3: Using chemical information sources and ensuring traceability	3, 4
Module 4: Assessing chemical hazards, exposure and risks	3, 4
Module 5: Identifying and documenting priority chemicals	3, 4
Module 6: Streamlining chemical purchasing practices	3, 4
Module 7: Preparing for chemical risk management	3, 4
Module 8: Controlling chemical hazards and risks	5, 6, 7
Module 9: Managing chemical wastewater and waste	5, 6, 7
Module 10: Streamlining chemical management system and organization	3, 4, 5, 6, 7
Module 11: Monitoring and reporting chemical management performance	3, 4, 5, 6

Experience from the factory improvement initiatives shows that support during a factory engagement process may be more effective if the factory teams concerned already possess a basic level of understanding regarding chemical management. It may therefore be well worthwhile that the members of the factory teams first complete the self-learning course (proposed in Option 1).

Based on the orientation visit proposed in Step 1 of the FIP, the trainers, learning facilitators, or service providers can decide whether all modules or only certain learning units would be of relevance to the respective factory team members. For the self-assessment phase proposed in Step 2 of the FIP, it can be advisable for the implementation process if the factory teams complete the self-learning module 2/Learning Unit 2.1 beforehand.

3 Content and structure of the CM self-learning materials

In this section the individual chemical management self-learning modules are described below in some detail. First, in the column on the left, the topics covered in each module is stated together with the module's expected learning objectives plus the estimated amount of time required for completion of the entire module. The middle column provides a detailed overview of the content coverage of the module plus potential applications of the newly gained knowledge at the factory level. In the column on the right, the learning materials of the module are listed (presentations including the number of slides, quizzes and assignments/exercises) plus links to reference and additional training materials including presentations for use in face-to-face or virtual (follow-up) training.

Solution sheets for the various quizzes as well as assignments as used in the self-learning materials are available for download by the trainers only. You can refer to these materials to develop your own quizzes for use in your tailored e-learning course or your blended learning events. In addition to the assignments provided as part of the self-learning materials, you can find additional assignments and exercises in the REMC materials (e.g. REMC Trainer Guideline, DHSC Trainer instructions)

As an additional introduction to the course, a short explanatory video (around 4 minutes) is also available to you and your learners, which outlines the learning roadmap as well as provides an overview of the course structure, the content of each course module, and guidelines on how to use and navigate through the various materials of the course as well as their learning platform. It is recommended that learners watch this video before proceeding to the self-learning modules and learning units.

3.1 Module 1: Introduction to chemical management

Module 1: Introduction to chemical management		
Description	**Module content**	**Learning materials**
This module provides a general introduction to chemical management for all participants. It also serves as orientation and a primer for selected target groups (such as representatives of authorities and company executives) who want to attain a quick understanding of chemical management without having to complete the entire CM self-learning program. This module is accessible to all participants.	• Context and trends in chemical management (with special reference to the textile and footwear sectors of industry) • The business case for a chemical management rational • Overview of legal and supply chain requirements of chemical management • Overview of chemical management elements	• Presentation of Module 1 with 42 slides and 6 pages of voiceover (40 min.) • Quiz (5 min.)
Duration	**Recommended factory-level applications**	**Link to additional reference/training materials**
Total time required: 45 min.	Employ the inputs and insights from this module for discussions with high-level stakeholders on a regional or country-level.	• REMC Trainer guideline learning unit (LU) 1100, session plan (SP) 1101 • DHSC Module 2_Chemical Management Framework, Chemical Inventory, submodule 2.1

3.2 Module 2: Mapping of chemicals and chemical flows

Module 2: Mapping of chemicals and chemical flows		
Description	**Module content**	**Learning materials**
Learning Units 2.1 and 2.2. guide leaners in systematically identifying and documenting chemicals present and used in the factory. Learning Unit 2.1 focuses on two different methods and tools for attaining a basic understanding of the situation at hand. Learning Unit 2.2 deals with the preparation measures required for conducting a chemical inventory in line with common expectations in international supply chains.	Learning Unit 2.1 • Using eco-mapping for visualizing chemical usage and hotspots • Mapping process flows using process flow charts Learning Unit 2.2 • Content and formats of chemical inventories • Inventory requirements in international supply chains • Preparing a chemical inventory	Learning Unit 2.1 • Presentation of LU 2.1 with 22 slides and 9 pages of voiceover (20 min.) • Quiz 2.1 (5 min.) Learning Unit 2.2 • Presentation of LU 2.2 with 16 slides (15 min.) • Quiz 2.2 (5 min.) • Assignment (45 min.)
Duration	**Recommended factory-level applications**	**Link to additional reference/training materials**
Total time required: 90 min. • Learning Unit 2.1: 25 min. • Learning Unit 2.2: 20 min. • Module assignment: 45 min.	Learning Unit 2.1 • Prepare an eco-map for selected chemicals or a production step involving chemicals. Learning Unit 2.2 • Review existing chemical inventory approaches. • Prepare/Enhance a chemical inventory format. • Collect and fill in information in accord with an enhanced chemical inventory format. • Prepare a (chemical) waste inventory.	Learning unit 2.1 • REMC Trainer guideline LU 1200, SP 1201 • DSHC Module 9_ Process and Chemical Flows, submodule Learning unit 2.2 • REMC Trainer guideline LU 1200, SP 1201 • DSHC Module 2_Chemical Management Framework, Chemical Inventory, submodule 2.2

3.3 Module 3: Using chemical information sources and ensuring traceability

Module 3: Using chemical information sources and ensuring traceability		
Description	**Module content**	**Learning materials**
Learning Units 3.1.1 and 3.1.2. provide guidance on how to employ safety data sheets and container labeling as two different sources of chemical information. These learning units explain the key types of information which can be retrieved. Furthermore, the corresponding requirements are outlined in accord with the Globally Harmonized Systems of Classification and Labelling of Chemicals (GHS). Learning Unit 3.2 outlines the concept of traceability in the context of chemical management and explains the basic requirements as per ZDHC and Higg FEM.	Learning Unit 3.1.1 • Content and structure of safety data sheets • Requirements as per GHS Learning Unit 3.1.2 • Overview of hazard pictograms • Concept and system of hazard statements • Content and format requirements of container labels as per GHS Learning Unit 3.2 • Concept of chemical traceability • Requirements as per ZDHC and Higg FEM	Learning Unit 3.1.1 • Presentation of LU 3.1.1 with 32 slides and 14 pages of voiceover (30 min.) • Quiz 3.1.1 (5 min.) • Assignment 3.1.1 (30 min.) Learning Unit 3.1.2 • Presentation of LU 3.1.2 with 18 slides and 7 pages of voiceover (15 min.) • Quiz 3.1.2 (5 min.) • Assignment 3.1.2 (30 min.) Learning Unit 3.2 • Presentation with 18 slides and 7 pages of voiceover (15 min.) • Quiz 3.2 (5 min.)

Duration	Recommended factory-level applications	Link to additional reference/training materials
Total time required: 135 min. • Learning Unit 3.1.1: 65 min. • Learning Unit 3.1.2: 50 min. • Learning Unit 3.2: 20 min.	Learning Units 3.1.1 and 3.1.2 • Verify availability and quality of safety data sheets (i.e. GHS conformance). • Verify availability and quality of container labels (i.e. GHS conformance). Learning Unit 3.2 • Check and update current internal chemical traceability practices.	Learning Units 3.1.1 and 3.1.2 • REMC Trainer guideline LU 1300, SP 1302 • DSHC Module 3 – Information management of chemicals, submodule 3.1 • DSHC Module 3 – Information management of chemicals, submodule 3.2 Learning Unit 3.2 • DSHC Module 5_ Input management and safe storage of chemicals, submodule 5.1

3.4 Module 4: Assessing chemical hazards, exposure and risks

Module 4: Assessing chemical hazards, exposure and risks		
Description	**Module content**	**Learning materials**
Learning Unit 4.1 provides guidance on how to apply a variety of methods and tools in assessing and classifying chemical hazards. Learning Unit 4.2. explains the linkage between chemical hazards, exposure and risks, as well as common exposure pathways. Learning Unit 4.3 builds on Learning Units 4.1 and 4.2 and outlines the concept and use of two different methods for chemical risk assessment: the risk matrix and control, plus the banding approach.	Learning Unit 4.1 • Types and categories of chemical hazards • Classifying chemical hazard levels by using a hazard banding method Learning Unit 4.2 • Concept of hazard, exposure and risk • Common forms of exposure in the workplace • Starting points for chemical risk management Learning Unit 4.3 • Steps in risk assessment • Using a risk matrix approach in risk assessment • Using control banding in action-oriented risk assessments	Learning Unit 4.1 • Presentation of LU 4.1 with 23 slides and 6 pages of voiceover (20 min.) • Quiz 4.1 (5 min.) • Assignment 4.1. (30 min.) Learning Unit 4.2 • Presentation of LU 4.2 with 23 slides and 12 pages of voiceover (20 min.) • Quiz 4.2 (5 min.) Learning Unit 4.3 • Presentation of LU 4.3 with 25 slides and 10 pages of voiceover (30 min.) • Quiz 4.3 (5 min.) • Assignment 4.3 (45 min.)

Duration	Recommended factory-level applications	Link to additional reference/training materials
Total time required: 190 min. • Learning Unit 4.1: 55 min. • Learning Unit 4.2: 25 min. • Learning Unit 4.3: 80 min.	• Identify and classify prevalent chemical hazards. • Determine hazard categories and hazard bands requiring priority attention in order to identify priority chemicals as well as situations, processes or locations at the factory. • Identify and document prevalent exposure pathways in the factory environment. • Apply risk assessments to situations, processes, and hotspots involving the presence or usage of hazardous chemicals.	Learning Unit 4.1 • REMC Trainer guideline LU 1300, SP 1301 • DSHC Module 4_ Hazard banding, risk assessment and control measures of Chemicals, submodule 4.1 Learning Unit 4.2 • REMC Trainer guideline LU 1300, SP 1303 • DSHC Module 4_ Hazard banding, risk assessment and control measures of Chemicals, Submodule 4.2 Learning Unit 4.3 • REMC Trainer guideline LU 2100, SP 2101 • DSHC Module 4_ Hazard banding, risk assessment and control measures of Chemicals, Submodule 4.2

3.5 Module 5: Identifying and documenting priority chemicals

Module 5: Identifying and documenting priority chemicals		
Description	**Module content**	**Learning materials**
Learning Unit 5.1 familiarizes leaners with the sector specific priority chemicals as well as with various information sources and standards. Learning Unit 5.2 is an optional add-on learning unit aimed at participants from footwear production and deals with volatile organic compounds (VOCs).	Learning Unit 5.1 • Overview of sector specific priority chemicals • Identifying and documenting processes and chemicals of concern • Usage and access to common references and requirements (e.g. ZDHC, MRSL and RSL, REACH) • Assessing compliance with requirements • Planning action for the substitution of priority chemicals Learning Unit 5.2 • Overview of volatile organic compounds (VOCs) • VOC hazards and exposure pathways • Identifying VOC priority areas in production	Learning Unit 5.1 • Presentation 5.1 with 41 slides 15 pages of voiceover (40 min.) • Quiz 5.1 (5 min.) Learning Unit 5.2 • Presentation of 5.2 with 21 slides and 10 pages of voiceover (20 min.) • Quiz 5.2 (5 min.)
Duration	**Recommended factory-level applications**	**Link to additional reference/training materials**
Total time required: 65 min. • Learning Unit 5.1: 40 min. • Learning Unit 5.2: 25 min.	• Review a chemical inventory table for possible priority chemicals and/or VOCs. • Assess and verify conformance of priority chemicals with legal and customer requirements. • Identify and document areas with VOC hazards and exposure.	*Learning Unit 5.1.* • REMC trainer guideline LU1300, SP 1304 • DSHC Module 6_ Substitution of Hazardous chemicals (MRSL & RSL)

3.6 Module 6: Streamlining chemical purchasing practices

Module 6: Streamlining chemical purchasing practices		
Description	**Module content**	**Learning materials**
This module outlines how learners can enhance the procedure and practices regarding the purchase of chemicals in their factories in line with international common good practices and requirements.	• Overview of common good chemical purchasing practices and requirements in international supply chains • Preparing/Updating chemical purchasing procedures • Developing and using a procedure for the selection and monitoring of chemical suppliers	• Presentation 6 with 21 slides and 8 pages of voiceover (30 min.) • Quiz 6 (5 min.) • Assignment 6 (45 min.)
Duration	**Recommended factory-level applications**	**Link to additional reference/training materials**
Total time required: 80 min.	• Review existing chemical purchasing practices. • Formulate a chemical purchasing policy. • Develop/Update chemical purchasing procedures and order requirements.	• REMC Trainer guideline LU1400, SP 1402 • DSHC Module 5_ Input management and safe storage of chemicals, submodule 5.2

3.7 Module 7: Preparing for chemical risk management

Module 7: Preparing for chemical risk management		
Description	**Module content**	**Learning materials**
This module explains how learners can ensure that the planning and selection of chemical risk control measures go beyond simply addressing the symptoms in order to determine the contributing factors (root causes).	• Concept of root causes • Analyzing gaps and their (root) causes • Preparing a chemical action plan	• Presentation 7 with 24 slides and 13 pages of voiceover (30 min.) • Quiz 7 (5 min.) • Assignment 7 (30 min.)
Duration	**Recommended factory-level applications**	**Link to additional reference/training materials**
Total time required: 65 min.	• Use PPE root cause example to conduct exemplary verification of root causes in your factory.	• REMC Trainer guideline LU2200, SP 2201 • REMC Trainer guideline LU2200, SP 2202 • REMC Trainer guideline LU2200, SP 2203

3.8 Module 8: Controlling chemical hazards and risks

Module 8: Controlling chemical hazards and risks		
Description	**Module content**	**Learning materials**
The learning units of module 8 deal with various aspects of chemical risk control management. Learning Unit 8.1 provides guidance on the use of engineering control. The optional add-on Learning Unit 8.1.1 deals with controlling volatile organic compounds in footwear production. Learning Unit 8.2 focuses on the selection and use of personal protection equipment to contain chemicals and control exposure to chemicals in production. Learning Unit 8.3 outlines the selection and implementation of common good practices for storage and transport of chemicals. Learning Unit 8.4 deals with the prevention of and response to chemical emergencies such as fire/explosion, spills/leaks, and medical emergencies.	Learning Unit 8.1 • Hierarchy of risk control measures • Overview of engineering controls (local exhaust and general ventilation) • Using engineering controls in the footwear sector with special focus on VOCs (an optional add-on Learning Unit 8.1.1)	Learning Unit 8.1 • Presentation of LU 8.1 with 26 slides and 7 pages of voiceover (25 min.) • Quiz 8.1 (5 min.) Learning Unit 8.1.1 (optional) • Presentation 8.1.1 with 25 slides and 6 pages of voiceover (25 min.) • Quiz 8.1.1 (5 min.)
	Learning Unit 8.2 • Overview of personal protection and a hygiene concept • Identifying, selecting and applying personal protection equipment	Learning Unit 8.2 • Presentation of LU 8.2 with 30 slides and 10 pages of voiceover (30 min.) • Quiz 8.2 (5 min.) • Assignment 8.2 (30 min.)
	Learning Unit 8.3 • Common good practices and requirements regarding the safe storage of chemicals • Common good practices and requirements regarding the internal and external transport of chemicals	Learning Unit 8.3 • Presentation of LU 8.3 with 32 slides and 16 pages of voiceover (40 min.) • Quiz 8.3 (5 min.) • Assignment 8.3 (30 min.)
	Learning Unit 8.4 • Planning and preparing for chemical emergencies	Learning Unit 8.4 • Presentation of LU 8.4 with 32 slides and 16 pages of voiceover (40 min.)

Module 8: Controlling chemical hazards and risks		
	• Dealing with spills and leaks • Arranging for medical emergency provisions (e.g. eye-wash and safety shower requirements)	• Quiz 8.4 (5 min.)
Duration	**Recommended factory-level applications**	**Link to additional reference/training materials**
Total time required: 245 min. • Learning Unit 8.1: 30 min. • Learning Unit 8.1.1: 30 min. • Learning Unit 8.2: 65 min. • Learning Unit 8.3: 75 min. • Learning Unit 8.4: 45 min.	Learning Unit 8.1 • Map the locations of engineering control devices installed and assess their functioning. Learning Unit 8.2 • Examine the selection of personal protective equipment and usage practices in your factory. Learning Unit 8.3 • Assess the storage conditions and storage work practices in your factory. Learning Unit 8.4 • Review your chemical inventory to identify chemicals which could contribute to a chemical emergency situation. • Systematically familiarize yourself with the recommended emergency equipment and provisions in the safety data sheets and review their actual availability in your factory. • Consider possible chemical emergency scenarios and then practice responding to them in your factory.	Learning Unit 8.1 • REMC Trainer guideline LU2300, SP 2302 • DSHC Module 10_Managing Air Emission and VOCs Learning Unit 8.2 • REMC Trainer guideline LU2300, SP 2302 • DSHC Module 4_ Hazard banding, risk assessment and control measures of Chemicals, Submodule 4.3 Learning Unit 8.3 • REMC Trainer guideline LU2300, SP 2303 • DSHC Module 5_ Input management and safe storage of chemicals Learning Unit 8.4 • REMC Trainer guideline LU2300, SP 2304

3.9 Module 9: Managing chemical wastewater and waste

Module 9: Managing chemical wastewater and waste		
Description	**Module content**	**Learning materials**
This module covers the requirements and practices related to the management of solid chemical waste and chemical-bearing wastewater. The learning units of this module are designed to introduce these topics. For more in-depth training, learners should refer to other training programs.	Learning Unit 9.1 • Distinguishing between various sources and types of chemical waste • Overview of the concept, techniques and elements of wastewater management • Overview of common monitoring and reporting requirements (such as per ZDHC) Learning Unit 9.2 • Sources and classification of wastewater treatment sludge • Disposal options for waste treatment sludge Learning Unit 9.3 • Calculating the possible pollution load for wastewater treatment plants • Linking production planning with wastewater management	Learning Unit 9.1 • Presentation of LU 9.1 with 22 slides and 9 pages of voiceover (20 min.) • Quiz 9.1 (5 min.) Learning Unit 9.2 • Presentation of LU 9.2 with 35 slides and 15 pages of voiceover (40 min.) • Quiz 9.2 (5 min.) Learning Unit 9.3 • Presentation of LU 9.3 with 19 slides and 7 pages of voiceover (15 min.) • Assignment 9.3 (30 min.)

Duration	Recommended factory-level applications	Link to additional reference/training materials
Total time required: 115 min. • Learning Unit 9.1: 25 min. • Learning Unit 9.2: 45 min. • Learning Unit 9.3: 45 min.	Learning Unit 9.1 • Conduct walk-through assessment to observe and note how various forms of waste are being managed in your factory. • Collect information about your particular forms of waste regarding its classification, sources, reusability or recyclability, disposal options, etc. and then identify and summarize the wastes in the form of a standard waste inventory. If necessary, get in touch with your local service provider to support you on this regard. • Try identifying improvement measures (e.g. BATs) using this checklist tool by the German Environment Agency (UBA). Learning Unit 9.2 • Verify whether all chemical-containing wastewater is being sent to the effluent treatment plant. • Verify whether the person in charge of the treatment plant is regularly informed about the chemicals employed and the wastewater loads to be expected. • Verify whether the chemicals used in wastewater treatment are also part of your chemical inventory? • Take a look at the chemical handling practices followed by your personnel in the wastewater treatment plant.	Learning Unit 9.1 • REMC Trainer guideline LU2300, SP 2305 • DSHC Module 8_ Managing Chemical Waste and Sludge Learning Unit 9.2 • DSHC Module 7_ Managing ETP and Pollution load in influent, submodule 9.1 Learning Unit 9.3 • DSHC Module 7_ Managing ETP and Pollution load in influent, submodule 9.2

3.10 Module 10: Streamlining chemical management system and organization

Module 10: Streamlining chemical management system and organization		
Description	**Module content**	**Learning materials**
Learning Units 10.1 and 10.2 provide guidance to learners on (i) integrating chemical management into their factory's management system and organization as well as (ii) taking steps towards increasing CM awareness, knowledge and skills at their factory.	Learning Unit 10.1. • Assessing and documenting CM regulations and other requirements • Establishing a CM organizational framework (e.g. forming a chemical management team, obtaining a management commitment, defining a chemical management policy) • Putting together a change management team at the factory Learning Unit 10.2 • Increasing awareness and communication on CM • Developing and monitoring training on chemical management	Learning unit 10.1 • Presentation of LU 10.1 with 28 slides and 10 pages of voiceover (30 min.) • Quiz 10.1 (5 min.) Learning unit 10.2 • Presentation of LU 10.2 with 20 slides and 9 pages of voiceover (20 min.) • Quiz 10.2 (5 min.)
Duration	**Recommended factory-level applications**	**Link to additional reference/training materials**
Total time required: 60 min. • Learning Unit 10.1: 35 min. • Learning Unit 10.2 25 min.	Learning Unit 10.1 • Carry out a systematic review of locally applicable regulatory and customer requirements. • Review and enhance job descriptions to reflect CM-specific tasks and responsibilities. • Draft a chemical management policy.	Learning Unit 10.1 • REMC Trainer guideline LU2300, SP 2301

	Learning Unit 10.2 • Review, prepare and/or update an annual CM training plan. • Set up a monitoring mechanism to track and report CM training. • Review and implement CM awareness measures.	Learning Unit 10.2 • REMC Trainer guideline LU2300, SP 2301

3.11 Module 11: Monitoring and reporting chemical management performance

Module 11: Monitoring and reporting chemical management performance		
Description	**Module content**	**Learning materials**
This module supports learners in the selection and formulation of key performance indicators for both action planning as well as monitoring and reporting on chemical management-related performance. With regard to reporting, leaners also find useful information on the possible integration of aspects of chemical management into information reported to potential buyers.	Learning Unit 11.1 • Defining and monitoring chemical management key performance indicators • Conducting an internal CM audit • Organizing a management review Learning Unit 11.2 • Integrating chemical management into sustainability reporting	Learning unit 11.1 • Presentation of LU 11.1 with 23 slides and 8 pages of voiceover (25 min.) • Quiz 11.1 (5 min.) Learning unit 11.2 • Presentation of LU 11.2 with 28 slides and 12 pages of voiceover (30 min.) • Quiz 11.2 (5 min.)
Duration	**Recommended factory-level applications**	**Link to additional reference/training materials**
Total time required: 65 min. Learning Unit 11.1: 30 min. Learning Unit 11.2: 35 min	not available	• REMC Trainer guideline LU2400, SP 2401 • REMC Trainer guideline LU2400, SP 2102

4 Using the learning platform

The GIZ's learning management system "atingi" is being employed to create new courses and host all learning materials. Accessing and then using the self-learning materials for this course is easy and can be carried out in a few simple steps as outlined below. During the first training rollouts you will be offered the possibility to schedule a technical support session to get you up and running.

4.1 Registering for atingi

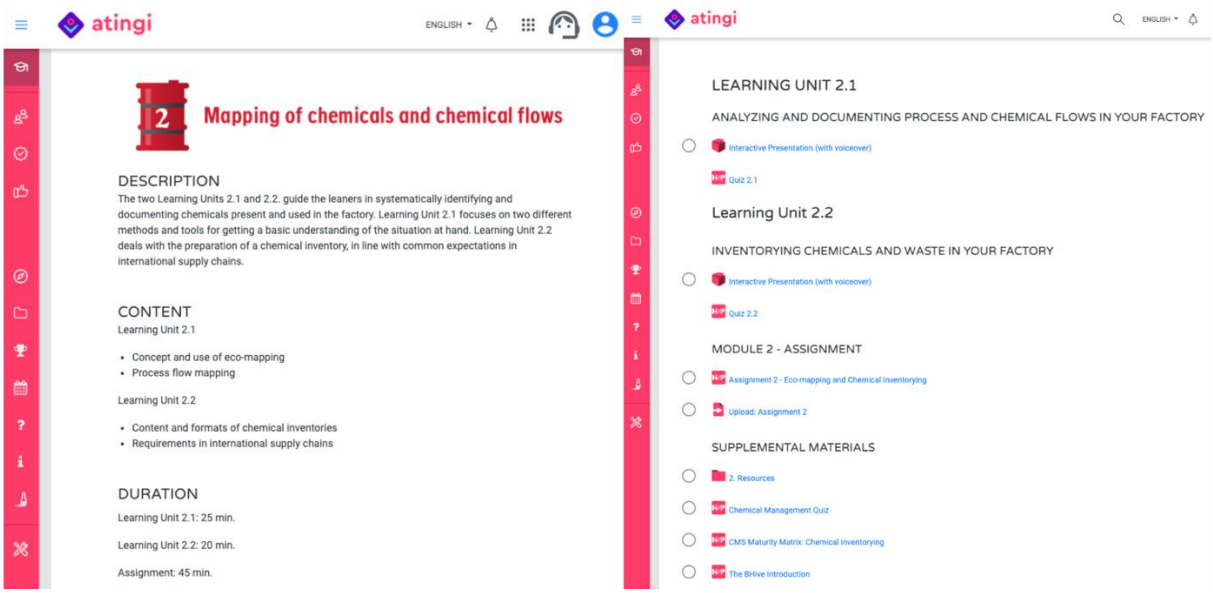
The first step is to register yourself as a trainer on the atingi platform. In order to do that, please visit our atingi site **https://www.atingi.org/** and click on the button "Register" in the upper right corner. After you have completed the registration, you can write an email to the atingi support group to request being enrolled into the course entitled "**CM-T**."

4.2 Navigating and using atingi

To understand the basics about the learning platform, we recommend that you check out the partner support area, where you can find introductory videos and a FAQ section:

https://online.atingi.org/course/view.php?id=672

Once you have been enrolled into the "Chemical Management" course, you can browse through the various modules and their learning units. The general structure of each module consists of an interactive presentation with English voiceover, a self-test quiz, and usually one or more extensive assignments in each module and learning unit.



4.3 Building your own course

Once you have decided which modules and materials you want to use for your course, you can start by creating your own course from scratch or copy the master version of Chemical Management course and

customize it to suit your needs. In order to do that, we recommend that you study the three introductory training videos provided in the atingi partner area:

https://online.atingi.org/course/view.php?id=672#section-4

Further information on creating your own content, tracking your participants progress as well as finding other possible ways of enhancing your participants experience in your course, please check the FAQ section for trainers:

https://online.atingi.org/mod/page/view.php?id=2046

4.4 Adding users to your course

After you have created your own course, you become the administrator of this course and can ask your training participants (learners) to register on atingi first. Once they have registered with atingi, you can then add them to the existing or your tailored Chemical Management course as explained in the tutorial videos. A separate guide to help you register your users can be found here:

https://online.atingi.org/pluginfile.php/90095/mod_resource/content/1/Managing%20users_atingi.pdf

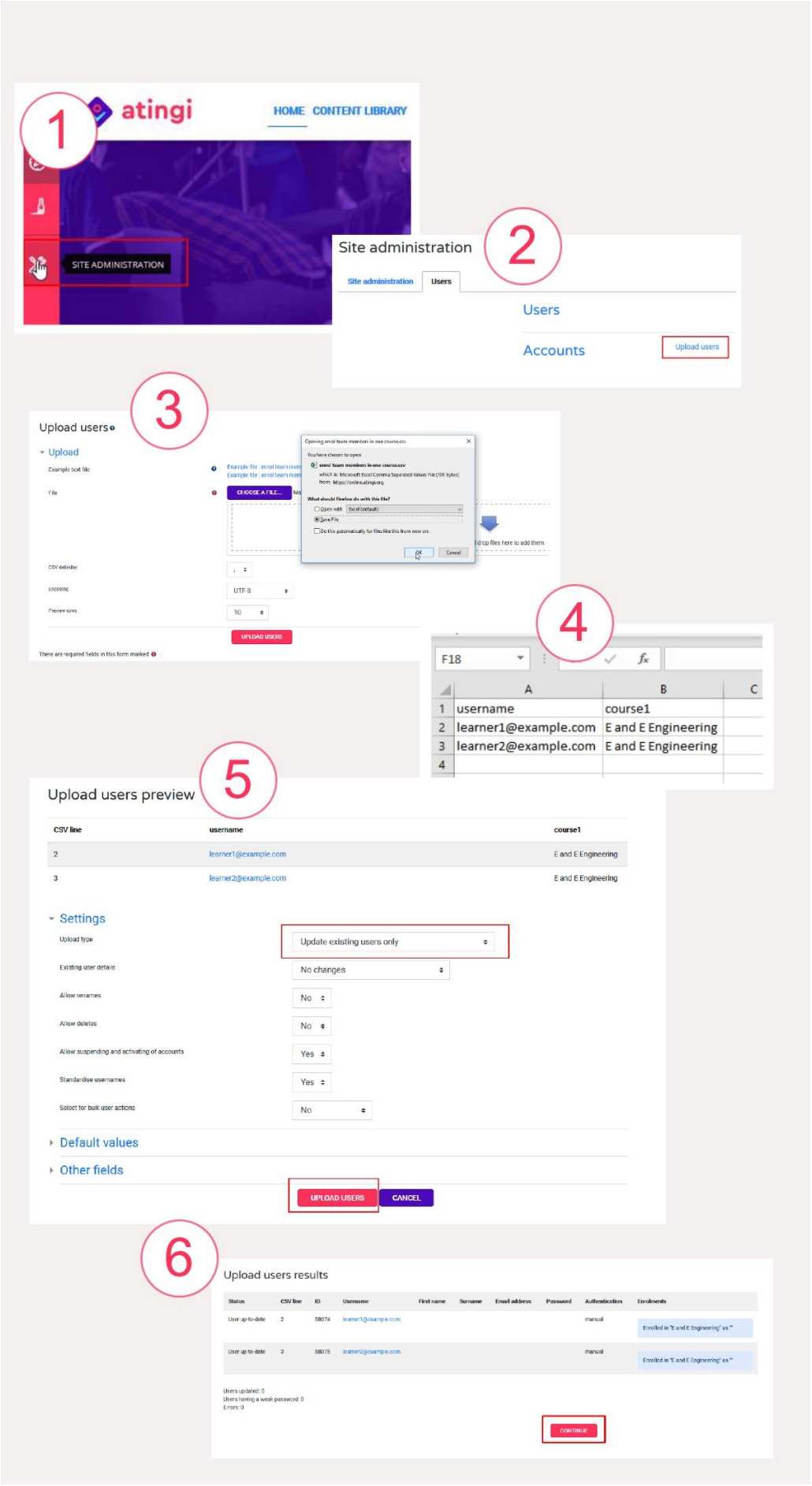
These are the steps to take:

1. Ask your participants to register on atingi.org
2. Once they finished registering they have to send you the email address with which they have registered on atingi
3. Go to https://online.atingi.org/admin/tool/uploaduser/index.php
4. Download the file "Example file : enrol team members in one course"
5. Open the csv file in a text editor
6. Do not change the first line
7. Add all your pariticipants email addresses and the short name of your course separated by a comma (e.g. bh@evoltas.eu, CM TOT). One line per user.
8. Upload your csv file and make sure that you chose "," as a CSV delimiter
9. Click on „Upload Users"
10. In the next step of the process choose "Update existing users only" under Settings -> Upload type
11. After you added your participants to the course you have to notify them via email yourself since the will not be notified by atingi

You can also find a short video tutorial explaining the process here:

https://d.pr/v/NdQpBg/bq3POraCD3+

And the process explained in screenshots on the following page.


1
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Site administration
Users
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3 learner2@example.com E and E Engineering
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3 learner2@example.com E and E Engineering
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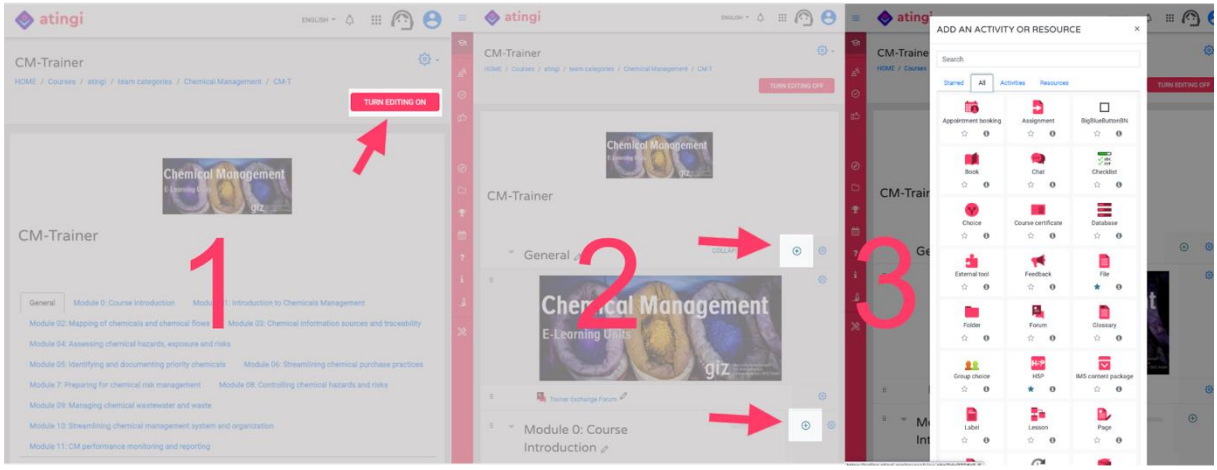
Update existing users only
Existing user details
No changes
Allow renames
No
Allow deletes
No
Allow suspending and activating of accounts
Yes
Standardise usernames
Yes
Select for bulk user actions
No
Default values
Other fields
UPLOAD USERS
CANCEL
6
Upload users results
CONTINUE

4.5 Uploading and downloading materials

You will be guided through the process of uploading and downloading materials from the platform in a separate support session. In general, all presentations will also be offered as a pdf document which can be downloaded directly on the atingi platform. If you want to add your own materials to the course, the process is quite easy. 1. First, you start the editing mode, 2. then you click on the plus button, and finally 3. you add your desired content (see the illustration below):



Additional information on how to add and create learning content can be found in the following document:

https://online.atingi.org/pluginfile.php/90096/mod_resource/content/1/supported%20learning%20formats_atingi.pdf

4.6 Bandwidth requirements

In general, accessing the course through atingi will not require a lot of bandwidth. Quizzes and assignments are mostly text-based and do not require high bandwidths. However, the interactive presentations with voiceover can vary in size between 50mb and 120mb, which can be a problem when accessing the course with a low bandwidth. There are two options for tackling this problem.

1. Use the pdf version of the presentation

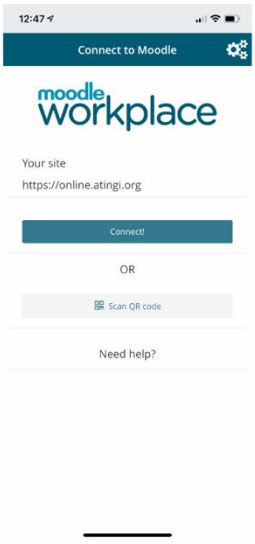
Every presentation comes with a pdf version which offers all slides and the voiceover text. These files are only a few mb in size and can be downloaded onto one's computer from atingi.

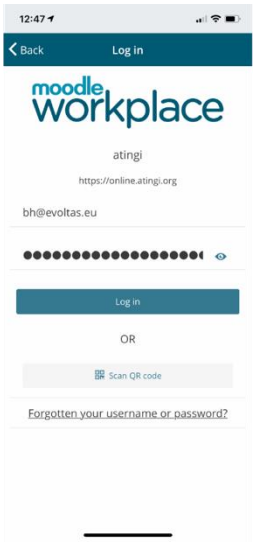
2. Use the offline feature of the mobile app

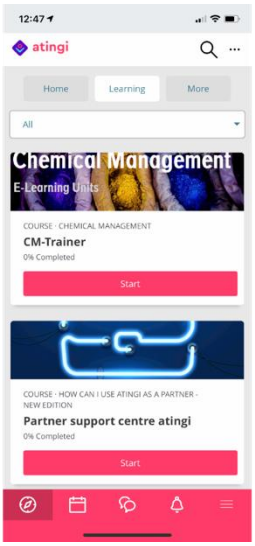
There is an Android and iOS app for the learning platform which allows users to download content onto their smartphone or tablet when they have access to a good Internet connection. This way, users can view and work through the units later and complete their work even though they might be lacking a stable Internet connection. The app can be downloaded here:

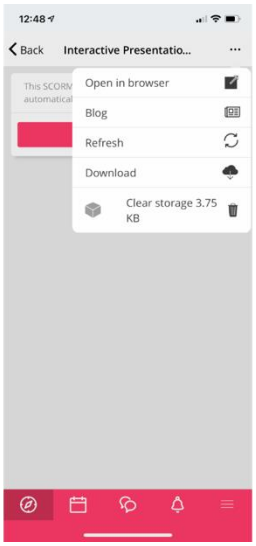
https://download.moodle.org/mobile?version=2019111802&lang=en&iosappid=1470929705&androidappid=com.moodle.workplace

Once you have downloaded the app, you can login to the platform by entering the site information https://online.atingi.org as well as your login credentials. In your courses you and your learners will be able to download specific learning units or single presentations by clicking on the three dots in the upper right corner.





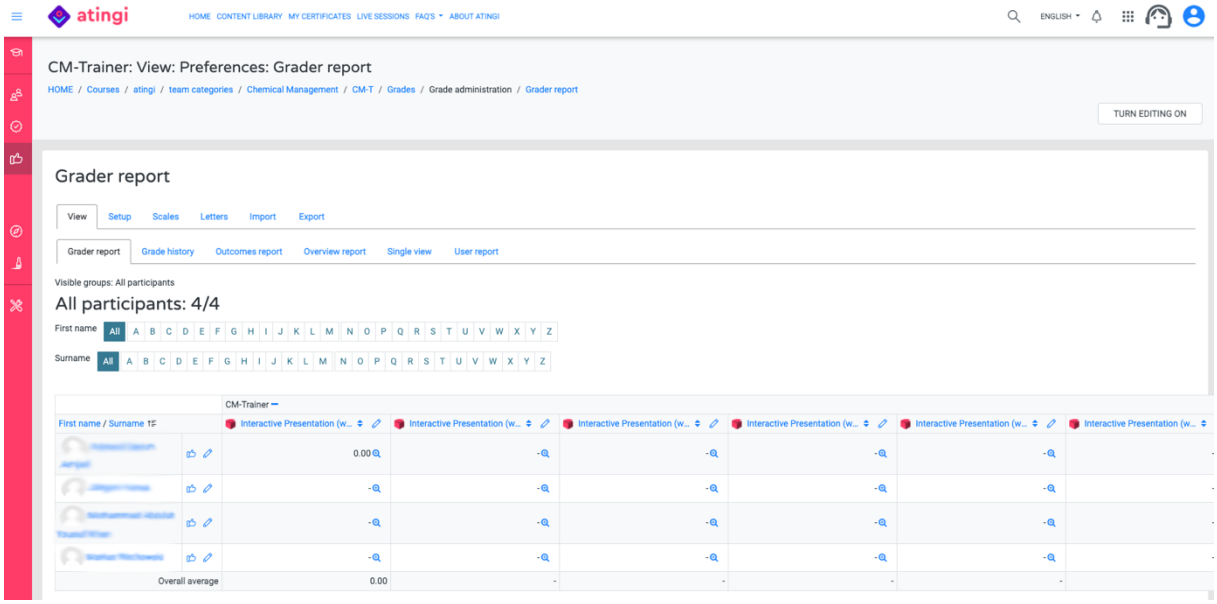




4.7 Tracking learner progress

4.7.1 Grades

Every course has its own *gradebook*, which is accessible from course administration > Gradebook setup. Some activities such as an *assignment* and *quiz* send grades back to this gradebook. It is also possible for teachers to enter grades directly into the gradebook.



4.7.2 Competencies

Competencies describe the level of understanding or proficiency of a learner in certain subject-related skills. *Competency-based education* (CBE), also known as *competency-based learning* or *skills-based learning*, refers to systems of assessment and grading in which students demonstrate these competencies.

4.7.3 Activity completion

If *activity completion* is enabled by the administrator and appears in the course settings, teachers can indicate for each course item how they wish it to be registered as completed. A checkmark will then appear across from the activity. Students may either mark it manually as completed or the item will automatically be registered as completed once a student has met the specified criteria. Completion of an activity may require viewing a resource, submitting an assignment, posting it in a forum or some other conditions. The teacher can see an overview of what participants have completed which assignments in the activity completion report in *Course administration* > *Reports* > *Activity completion*.

You can decide in which way you want to recognise your leaners´ successful completion of your course. A sample certificate is available for download, which you can adapt to your own needs and course setting.

4.8 Using the trainer exchange

The atingi platform also provides for a separate room reserved for exchange between the different chemical management trainers. This space is meant to allow the registered trainers to share experiences, new materials or news on training courses. To this regard this space can be used as a meeting room for a community of practioners, constituted from registered CM trainers.

5 Useful links and references

Best Available Techniques (BAT) reference document in the textile industry	https://eippcb.jrc.ec.europa.eu/reference/textiles-industry
COSHH e-tool	www.hse.gov.uk/coshh/essentials/coshh-tool.htm
Easy-to-use Workplace Control Scheme for Hazardous Substances (EMKG) – Federal Institute for Occupational Safety and Health, Germany	www.baua.de/EN/Topics/Work-design/Hazardous-substances/EMKG/Easy-to-use-workplace-control-scheme-EMKG_node.html
Eco-Mapping	www.sia-toolbox.net/solution/eco-mapping
EMAS "easy" for small and medium enterprises – DG for the Environment	https://op.europa.eu/en/publication-detail/-/publication/a46da1ae-edee-47aa-b871-d13baa946379
Environmental standards in the textile and shoe sector – A Guideline on the Basis of the BREFs – Best Available Techniques Reference Documents of the EU	https://www.umweltbundesamt.de/sites/default/files/medien/publikation/long/4289.pdf
GIZ Advanced Training Module for Chemical Management in textile wet processes	www.sia-toolbox.net/solution/advanced-training-program-chemical-management-textile-wet-processes
GIZ Basic Training Module for Chemical Management in textile wet processes	www.sia-toolbox.net/solution/basic-training-module-chemical-management-textile-wet-processes
GIZ Digital Solutions for Substitution of Hazardous Chemicals in the Fashion Supply Chain initiative materials	Made available in CM master course
GIZ Resource Efficient Management of Chemicals in Textile and Leather Sector Companies, 2017	www.sia-toolbox.net/solution/resource-efficient-management-chemicals-textile-and-leather-sector-companies
Globally Harmonized System of Classification and Labeling of Chemicals (GHS)	https://unece.org/about-ghs
IFA Column Model as an aid to selecting substitute substances	www.dguv.de/ifa/praxishilfen/hazardous-substances/ghs-spaltenmodell-zur-substitutionspruefung/index.jsp

SAC Higg FEM 3.0 – Chemical management	https://howtohigg.org/fem-landing/chemical-management-2020/
Safety in the use of chemicals at work. An ILO code of practice	https://www.ilo.org/public/libdoc/ilo/1993/93B09_147_engl.pdf
Substitution Support Portal	www.subsport.eu
ZDHC Chemical Management System	https://www.roadmaptozero.com/process
ZDHC Manufacturing Restricted Substances List	https://www.roadmaptozero.com/input
ZDHC Sampling and Analysis Plan	https://www.roadmaptozero.com/output
ZDHC Technical Industry Guide	https://www.roadmaptozero.com/process
ZDHC Wastewater Guidelines	https://www.roadmaptozero.com/output

6 Annex – Sample schedule and timeline

The following table outlines a sample schedule and timeline demonstrating how the self-learning program can be integrated into a Factory Improvement Program (FIP) in line with the GIZ REMC approach. The outline is based on the description "Framework for implementation of REMC Factory Improvement Programme" in the GIZ REMC Guidelines for Service Providers. Please consider this outline as an example only. Feel free to adapt it to your own needs.

For the blended support, consider using the additional REMC presentations and training materials (e.g. exercises, handouts, reading references) as indicated in the description of the specific self-learning modules in section 3.

FIP Step		Purpose/objective	Month	Self-learning course	Blended support	On-site application	Tools (examples)
1.	Getting started	• Familiarize yourself with the factory (through a background research and orientation visit). • Establish a working relationship with the factory management. • Obtain management commitment.	1	Module 1 as orientation of top management	*Alternatively: Module 1 as orientation of top management*	Meeting with top-management and possible change management team members	
2.	Self-assessment (baseline)	• Ensure availability of the focal point/team (e.g. change management team CMT). • Raise the change readiness of the factory staff. • Develop a preliminary understanding of the factory's needs and priority areas.	1	Module 1 as orientation of CMT members	*Alternatively: Module 1 as orientation of CMT members*	Factory visit for REMC Quick-check with CMT	SAC Higg FEM 3.0 - Chapter 7 – self assessment (base line)

FIP Step		Purpose/objective	Month	Self-learning course	Blended support	On-site application	Tools (examples)
3.	Chemical Management System (CMS) Workshop	• Develop competence of factory personnel (e.g. Change Management Team) on CMS elements and understanding the situation. • Support CMT in assessing, prioritizing and documenting the situation at hand. • Support CMT in the preparation of the first factory action plan with focus on CMS.	1-2	Modules (and learning units) 2–6 for self-learning training by CMT members	Several small workshops or one large workshop to reflect on the content of self-learning and complete the table-top assignments	Pilot approaches for the following: (i) documenting process flows and production layout (ii) mapping which chemicals are in use and where (iii) identifying “hotspots” (iv) classifying chemicals by hazards and hazard bands (v) assessing risks (vi) preparing sample procedures	Eco-mapping Process-flow charts Inventory table Safety-data-sheet check

FIP Step		Purpose/objective	Month	Self-learning course	Blended support	On-site application	Tools (examples)
4.	Implementation phase I	• Support CMT in establishing/ improving basic CMS elements in line with the factory action plan	3-4	Modules (and learning units) 1 – 6 for self-learning training by other selected factory personnel	Virtual progress review meetings Support CMT in reflecting on self-learning with factory personnel	On-site progress review meetings Support CMT in reflecting on completing assignments with factory personnel to support adoption of procedures and practices	
5.	Change & Risk Management Workshop	• Develop competence of CMT and factory personnel on risk control measures • Support CMT in updating factory action plan with focus on further CMS elements and risk control measures	4-5	Modules (and learning units) 7 - 10 for self-learning training by CMT members	Several small workshops or one large workshop to reflect on content of self-learning and complete table-top assignments Review meeting with top-management to sustain commitment	Support assessment of risk control gaps and planning of improvement measures	Root cause analysis Check-list tools Safety data sheets

FIP Step		Purpose/objective	Month	Self-learning course	Blended support	On-site application	Tools (examples)
6.	Implementation phase II	• Support company in implementing control measures and anchoring CMS elements	6-8	Modules (and learning units) 7-9 for self-learning training by other selected factory personnel	Virtual review meetings Support CMT in reflecting on self-learning with factory personnel Establish a factory CM training plan Prepare a factory CM handbook	On-site review meetings Support CMT in reflecting on completing assignments with factory personnel to support implementation of improvement measures	
7.	Additional technical seminars	• Provide additional inputs on technical issues (e.g. selection of PPE, storage of chemicals, substitution)	6-8	Modules 10 and 11 for CMTs, top management and selected factory personnel	Workshop with top management and management system team on Module 11 Additional training measures for selected target groups (e.g. ETP staff, waste handlers/contractors)	Action planning with top management and management system team for anchoring	UBA BAT checklist tool

FIP Step		Purpose/objective	Month	Self-learning course	Blended support	On-site application	Tools (examples)
8.	Final/Progress review and documentation	• Document and review progress. • Support top management and CMT in planning and implementing next steps.	8-9		Closing a meeting with a CMT team to review progress and plan the next steps	Pilot planning and implementation of internal audits and on-site inspections Closing a meeting with top management	SAC Higg FEM 3.0 – Chapter 7 (self-assessment progress)