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D.5.5 - Development of Handbook for use after project duration

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D.5.5 - Development of Handbook for use after project duration

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Colophon

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Publishable executive summary

This deliverable documents the ARISE platform handbook to be used in conjunction with the e-learning platform, describing and detailing best practices for accessing materials and evaluating assessment feedback. This deliverable/handbook outlines the key lessons from each of the modules.

The handbook is built on the previous deliverables *D.5.4 - Final Package of materials available through the ARISE digital tools platform*, taking into consideration the feedback from the piloting phase delivered in WP6.

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1. Introduction

This deliverable contains a handbook describing the final version of the ARISE e-learning platform, including guidelines and instructions for Trainees and Trainers that are relevant to new users and existing users. Within this handbook, the platform will be broken down from each of these perspectives and demonstrate how one will navigate through the user interface while understanding all of the developed tools and features. An example pathway will be described, beginning from registration to the awarding of a digital badge and what that entails. The current and final version of the ARISE e-learning platform and material is built on the feedback provided throughout the trial period that has been captured in previous deliverables in WP5 and WP6. Before the handbook breaks down the pathway into specific roles (trainee or trainer), the homepage will be introduced, and what new or existing users will encounter when first entering the ARISE platform website (https://ariseplatform.eu/).

2. ARISE e-learning platform

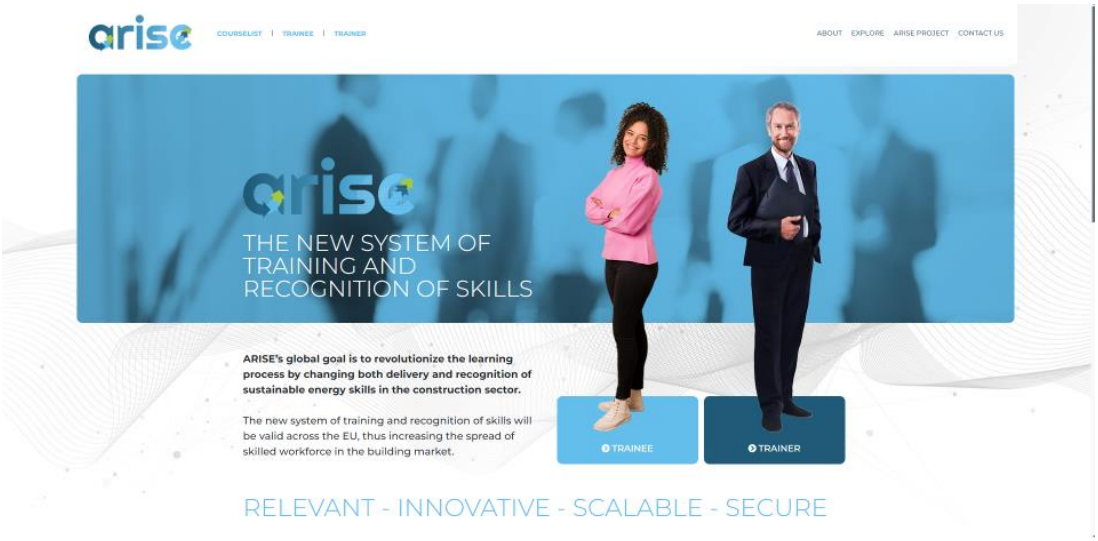
2.1 -Getting familiar with the work environment

When users visit the platform for the first time (https://ariseplatform.eu/), they will be met with the home page giving an overview of the ARISE project – *ARISE's global goal is to revolutionise the learning process by changing both delivery and recognition of sustainable energy skills in the construction sector. The new system of training and recognition of skills will be valid across the EU, thus increasing the spread of skilled workforce in the building market.*

Before logging in or signing up, the top navigation bar will include pages for the:

- COURSELIST
- TRAINEE
- TRAINER
- ABOUT

- EXPLORE
- ARISE PROJECT
- CONTACT US



(Figure 1, ARISE Platform Homepage)

By scrolling down to the bottom of the page, the associated partners for the ARISE project will be listed with further navigation pages for exploring. Further to this, the project's social media channels can be accessed using the buttons provided in the final line of the page.

(Figure 2, ARISE Partners)

i) Course List

Next, visitors to the platform website can view the available micro modules through the COURSE LIST tab on the top navigation bar.

The course list is divided into modules and training plans. The module section is where the available developed micro-modules will be displayed for selection and enrolment. The training plans section will display proposed and tested pathways that were suggested for the trials. These are flexible stepping stones connected to the framework subtasks Unit of Learning Outcomes and Competencies, which lead users towards the journey of the more complex and overreaching qualification pathways indicated in the Framework.

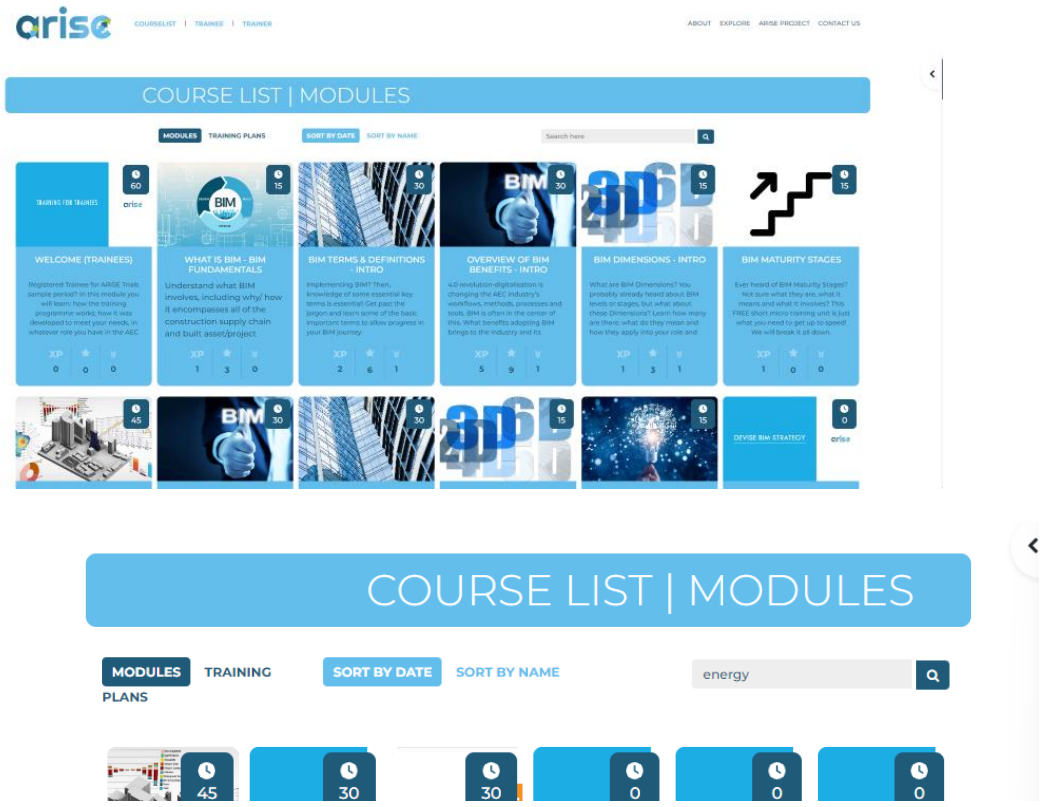
These demonstrate the flexibility and adaptability of the ARISE to adapt to different combinations of qualifications, albeit still based and leading towards the overarching task-based approach of the platform.

Another set of training plans has been set and is currently displayed in the platform that is organised in perfect match to the specialisms, tasks, and subtasks of the qualification framework (see D.3.3 and D.3.4). Translated micro modules are also

available. Some modules were fully or partially translated into Portuguese and Italian during trials once they were identified as a possible drive for higher uptake and retention of users. These can be filtered /sorted by using the flag icons on the top.

The search bar can also be used to filter content into specific themes, i.e. Energy (Figure 3). Modules and training plans have been set up to have the ability to include tags and keywords to assist users in searching for specific micro modules to suit their preferences. Appendix 1 contains a list of available modules, and Appendix 2 contains the current training plans linked to modules.

** At the time of publication of this guide, not all training plans have been made live.*



(Figure 3, ARISE Course List)

ii) Training Plans

Training plans present the opportunity for users to take on several micro modules to more defined, complex, and complete training pathways (Figure 4).

They can be deployed at different scales and with different levels of complexity. A conceptual category system for training plans was developed during the trial period to assist in the deployment and future exploitation of the platform/ ARISE training/ qualifications. This facilitated the Framework subdivision and the mapping of sub-tasks associated with ULOs into deliverable micro-modules to facilitate desirable interchangeability when subtasks share a foundational knowledge.

The categorisation approach for training plans can be defined by:

1. **MEGA:** Generally, set at the specialism level
2. **MACRO:** Primarily task-based
3. **MESO:** Mainly subtask-based
4. **MICRO:** At the ULO level
5. **NANO:** A combination or variation of different modules designed to incentivise progression or signal a shift in the European Qualifications Framework (EQF) level or complexity

For more details about the context and rationale for this category system, please refer to WP6's D6.5 report.

All training plans are based on and lead towards the overall Specialism pathways proposed in the Framework, based on Tasks, subtasks, ULOs and associated required indicative knowledge.

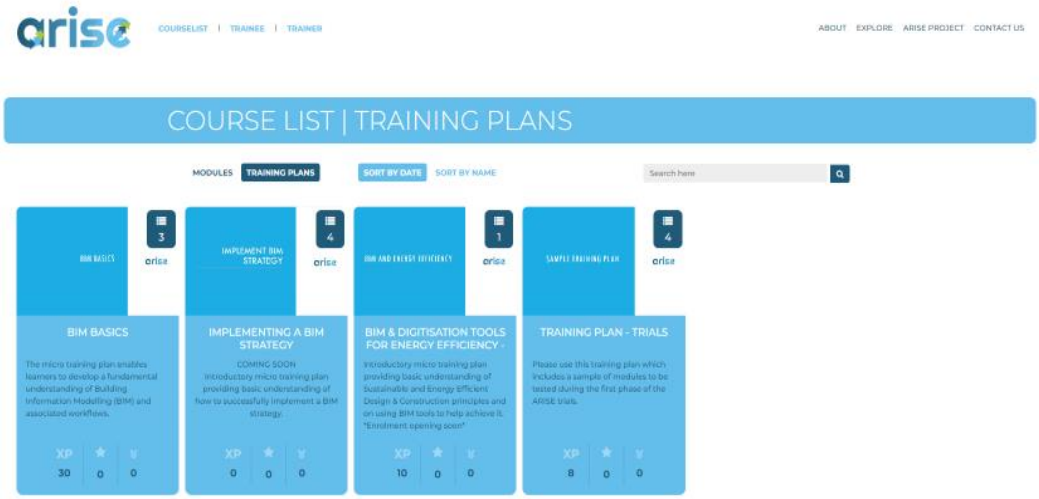
A set of training plans has been specifically mapped to fully match the indicative Framework tasks (Macro training plan), and within them, placeholders that match and indicate subtasks. This can be deployed as a set of micro modules, a set of smaller training plans, or combination of both. The nature, scope, level of

complexity of the sub-task will determine what would be the best approach to allow a bite-size delivery. This first set constitutes a guideline for future implementations, as well as a visual guideline for users.

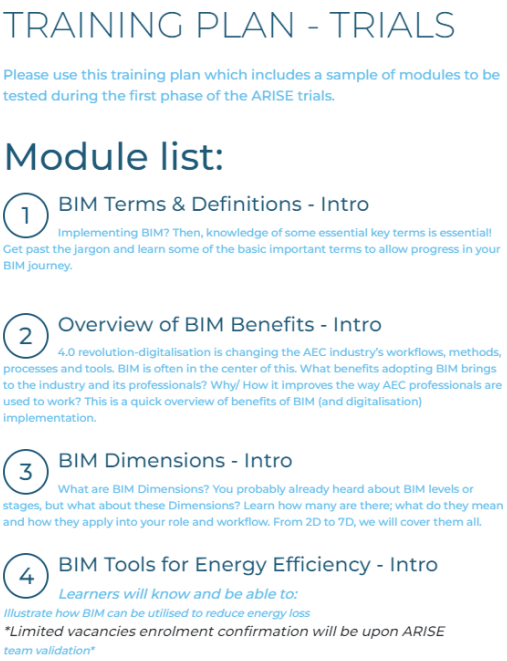
Another type of training plan has been created to allow and demonstrate a more flexible deployment and combinations of micromodules. This creates a more varied, flexible and personalised approach to pathways, which is still based and will ultimately link and lead towards the different Specialism areas by relating to the ULOs required to complete each subtask.

This second set was the format to which trials adhered more closely so as to provide a more flexible bite-size approach while still within the scope and guides of the ARISE task-based Framework.

This allows micro-modules that have been completed in one training plan to potentially be reused and transferred to another training plan should micro-module ULOs be shared across common modules. For example, during the initial sampling during the first phase of the trial, a training plan was set up containing the following micro-modules: *BIM Terms & Definitions – Intro, Overview of BIM Benefits – Intro, BIM Dimensions – Intro,* and *BIM Tools for Energy Efficiency – Intro*. For a preview of what micro-modules are provided as part of the training plan, users can select a training plan and find out more before enrolling (Figure 5). As these modules are already included in the BIM Basics and BIM & Digitalisations Tools for Energy Efficiency training plans, respectively, they will not need to be completed twice.



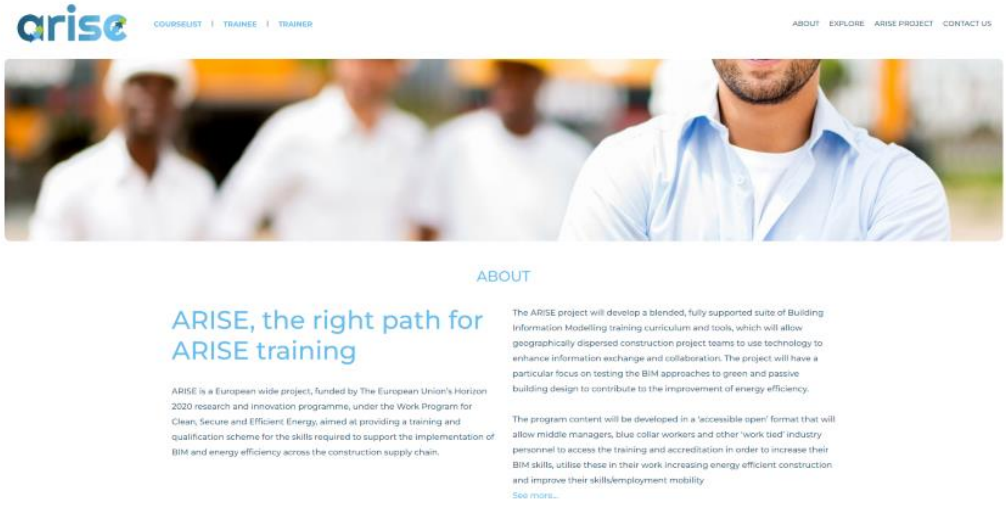
(Figure 4, ARISE Training Plans)



(Figure 5,, ARISE Sample Training Plan for Trials)

iii) About and Explore ARISE

To gain a further understanding of the project and its background, users are encouraged to click on the ABOUT and EXPLORE tabs to discover more about ARISE and the project partners.

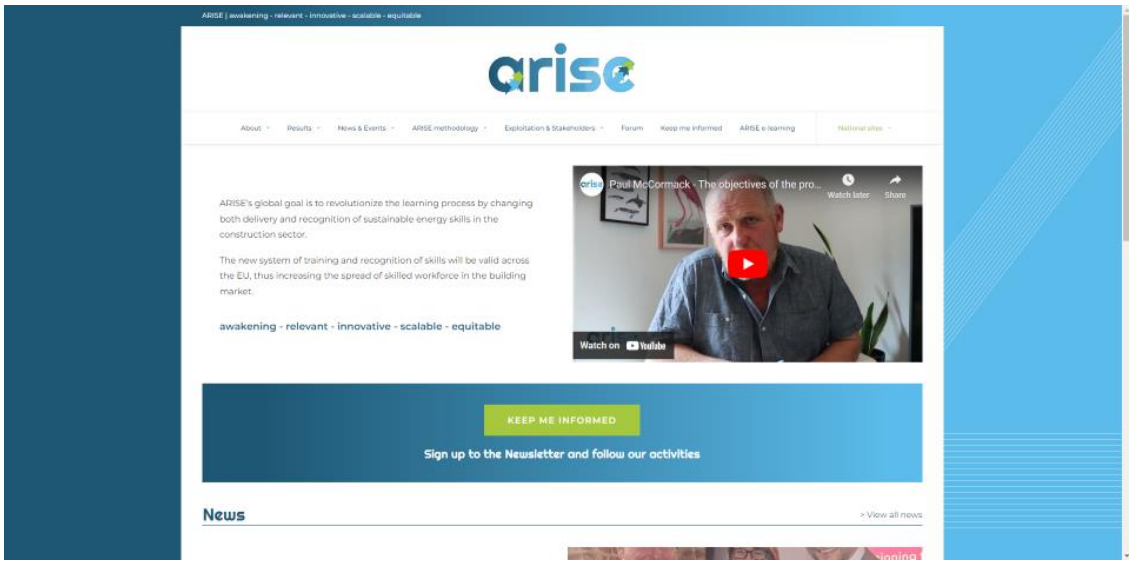


(Figure 6, About ARISE page)

(Figure 7, Explore ARISE page)

iv) ARISE Website

Continuing with the ARISE PROJECT tab, users will be directed to the official ARISE project website (https://www.ariseproject.eu/), containing more detailed Information such as the project results, reports, publications, methodology, and promotional material. Users are welcome to join the forum and newsletter to keep up to date with project updates and news. National sites are also provided by project partners, and they have been translated from English to their preferred language.

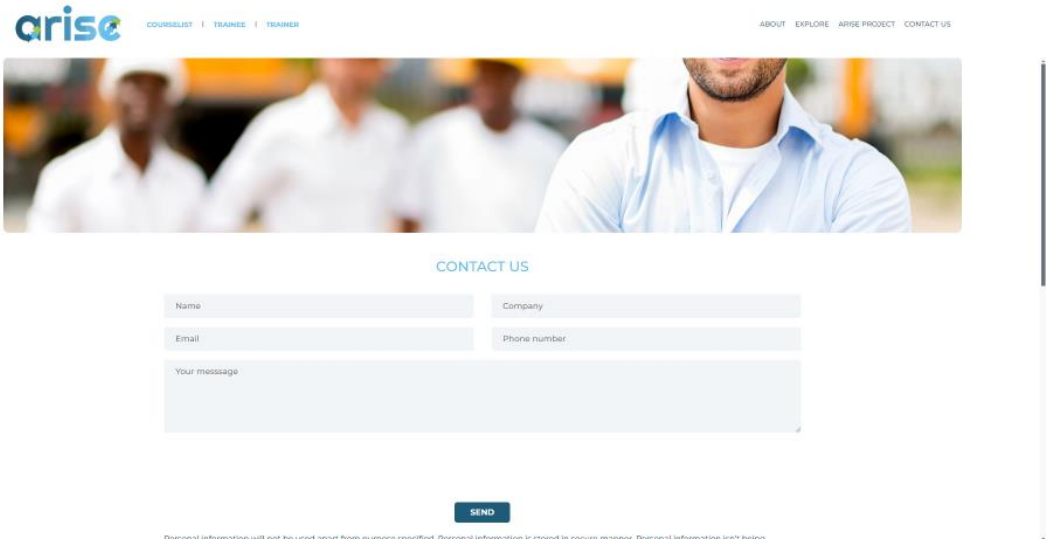


(Figure 8, ARISE Project Homepage)

v) Contact

Lastly, should users wish to contact the ARISE project team, they can include a message in the CONTACT US tab.

If users are logged in, then they should scroll to the bottom of the display page, to the footer, and find the link to “Contact us”.

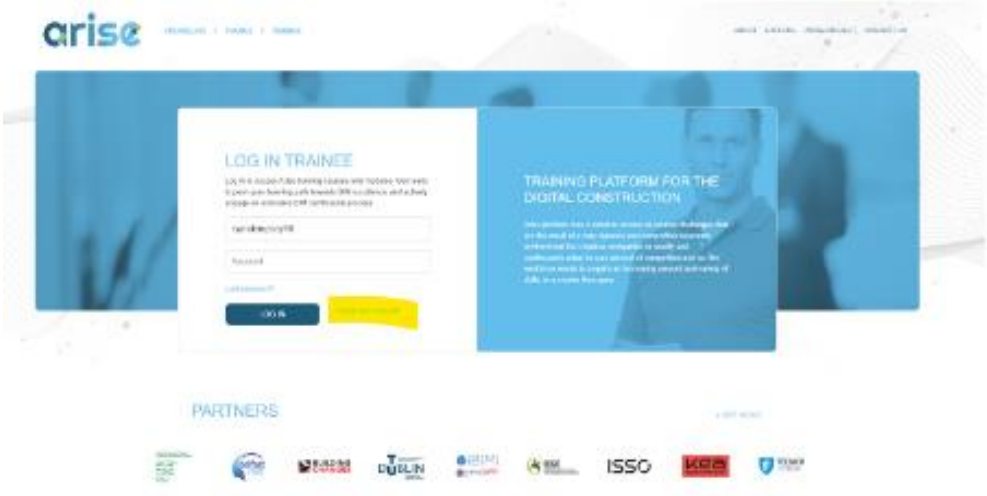


(Figure 9, ARISE Homepage)

3. Registration and Login Process

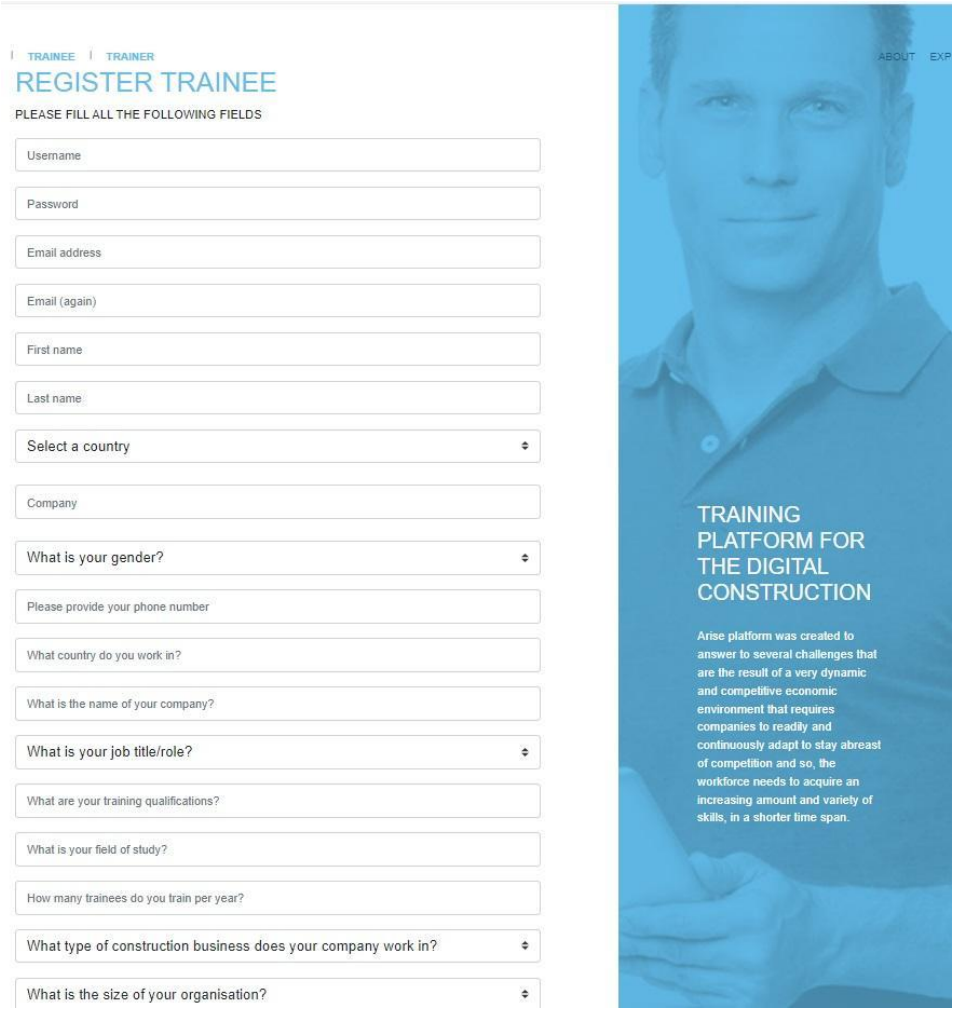
3.1 -New Users - Trainees and Trainers

New users will visit the trainee/trainer tab to create a new account, which can be found next to the login button.



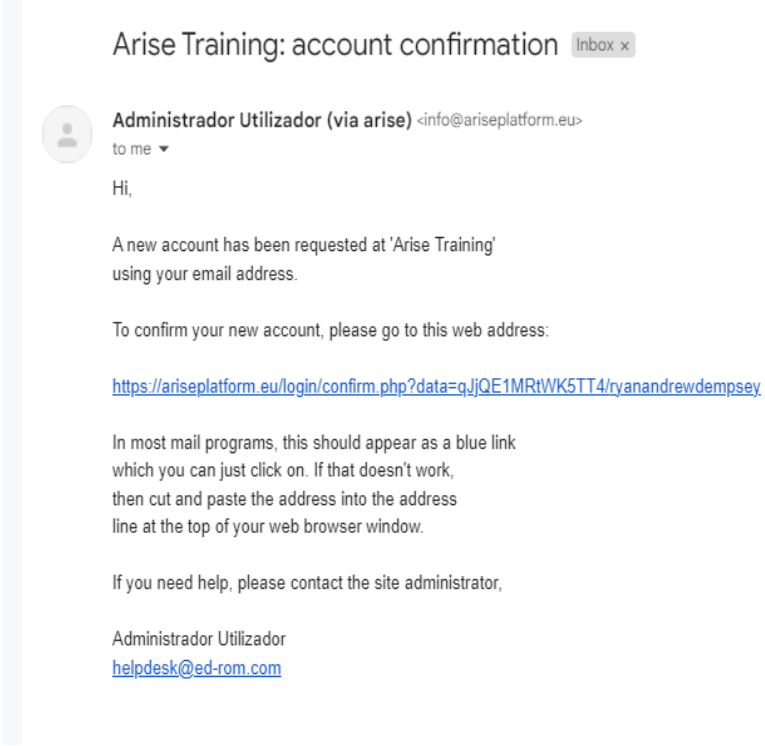
(Figure 10, Create New Account)

From here, users will be invited to create a professional profile. For project metrics requested by the EU Commission, it is important for the ARISE project that profiles are fully completed. During trials, WP6 constantly requested users to complete fully their profile data. As per GDPR, all data collected during the project is protected and will not be shared with any third parties. If you are self-employed, you include this under *Company*. In relation to size and number of projects per year, this is an estimated average in m2. The phone number data is an optional field in the form (Figure 11).



(Figure 11, ARISE platform Registration)

Once profiles have been created, a confirmation email will be sent to validate the account. Please ensure to check spam folders should the validation email be sent there (Figure 12).



(Figure 12, ARISE platform account confirmation)

3.2 Login process

Whether users are logging in as trainees or trainers, the login process will include the same Information, i.e. username and password. If users forget or lose their password at any stage, they can reset their password by clicking on "*Lost password?*" where they will be issued a link via their registered email address with instructions for resetting (Figure 13).

(Figure 13, Password Reset)

4. User Interface – Profile

Once users have registered, validated, and are now logged in, the user interface will update to include new tabs such as *DASHBOARD, AVAILABLE COURSES, PERSONAL DATA, NOTIFICATIONS, MESSAGES AND PERSONAL PROFILE*.

i) Dashboard

All enrolled modules and training plans can be reviewed in the lists provided at the bottom of the dashboard (Figure 14.). As per the gamification functionality, the dashboard will allow users to visualise their rank, XP Level, Stars, and awarded badges (Figure 14). In addition, leaderboards can be reviewed for monitoring purposes where they stand in relation to fellow users (Figure 15).

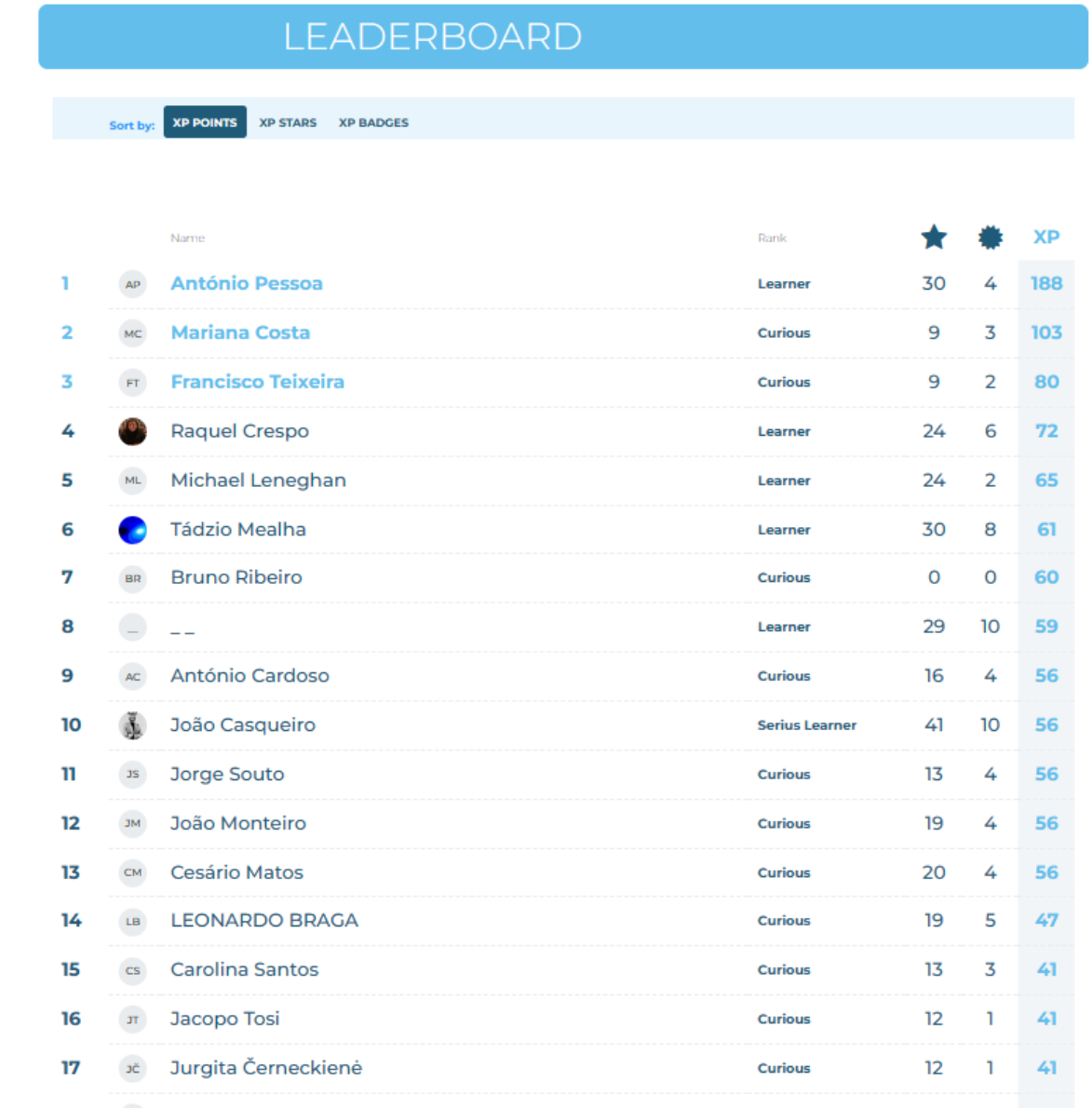
As detected in the trials and communicated to WP5 by WP6, as exploitation of ARISE continues post-project, more modules and, consequently, pathways training plans are added, the currently available number for XPs will increase. Regular reviews and updates on the platform to set levels of ranking may need to occur to accompany this. New levels thresholds may need to be set, and then be

updated in the users dashboard proportionally to keep consistency and equitable comparison between users' achievements. When the user finishes certain modules, they can obtain Internal badges that match open badges. This has a double purpose:

First, it is simply a gamification feature that rewards effort and achievements, as well as incentivises progression by comparison of the number of badges earned.

The secondary purpose is that it acts as a recognition of skills obtained, which is assigned in a more real-time framework than the open badges. The Open badge issuing takes a slightly longer time between completion of the Module and receipt of the issued badge. So, internal badges become a first point of account for measuring impacts and progression in terms of achievements/ micro accreditation issued in ARISE training. These internal badges will have a "twin" in the open badge system. When a certain set is combined (for example, in a training plan), they will form/unlock a Milestone Badge (which is more of a "certificate"). Further details on open badge integration can be found in Deliverable 4.8.

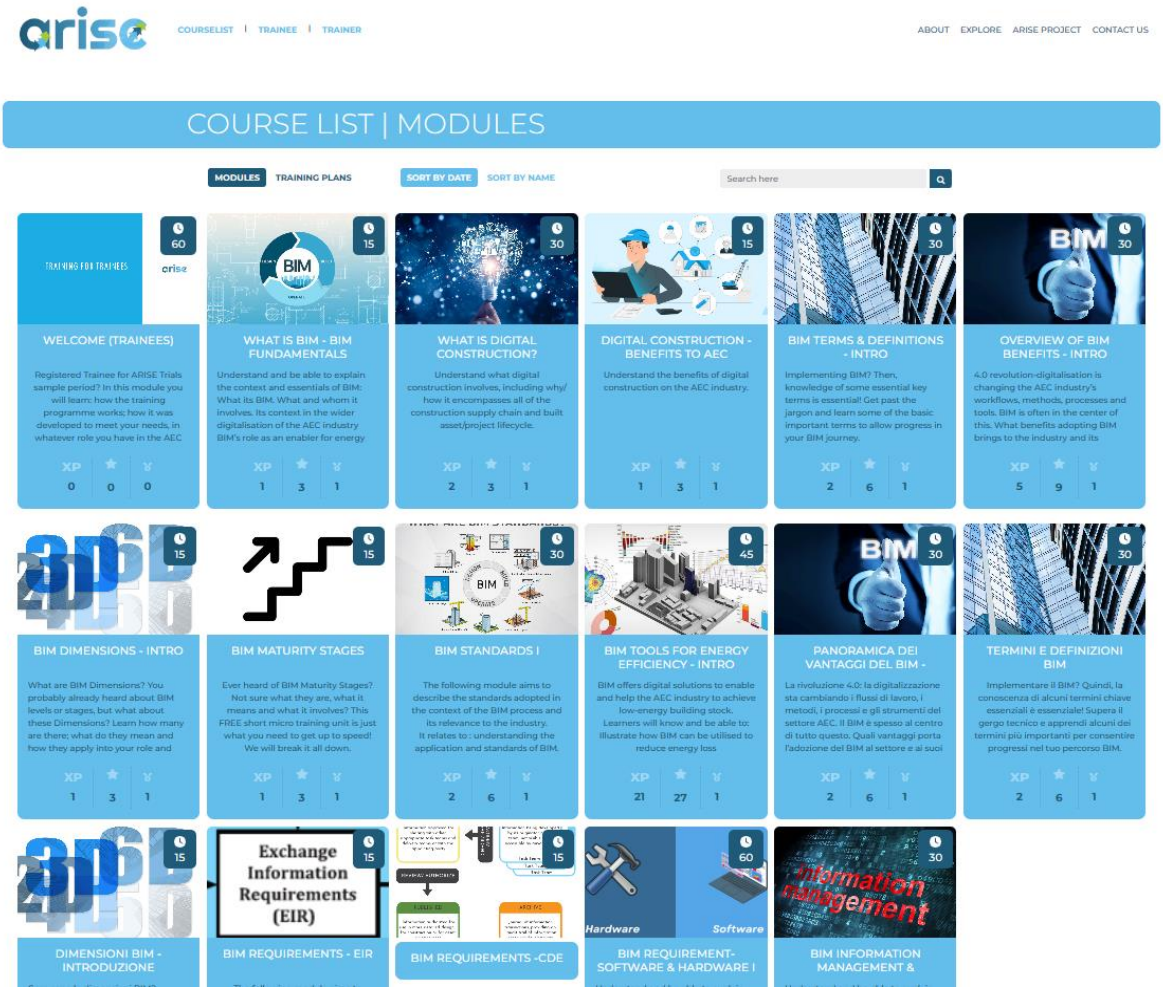
(Figure 14, User Dashboard)



(Figure 15, User Leaderboard)

ii) Available “courses” (micro modules) and training plans

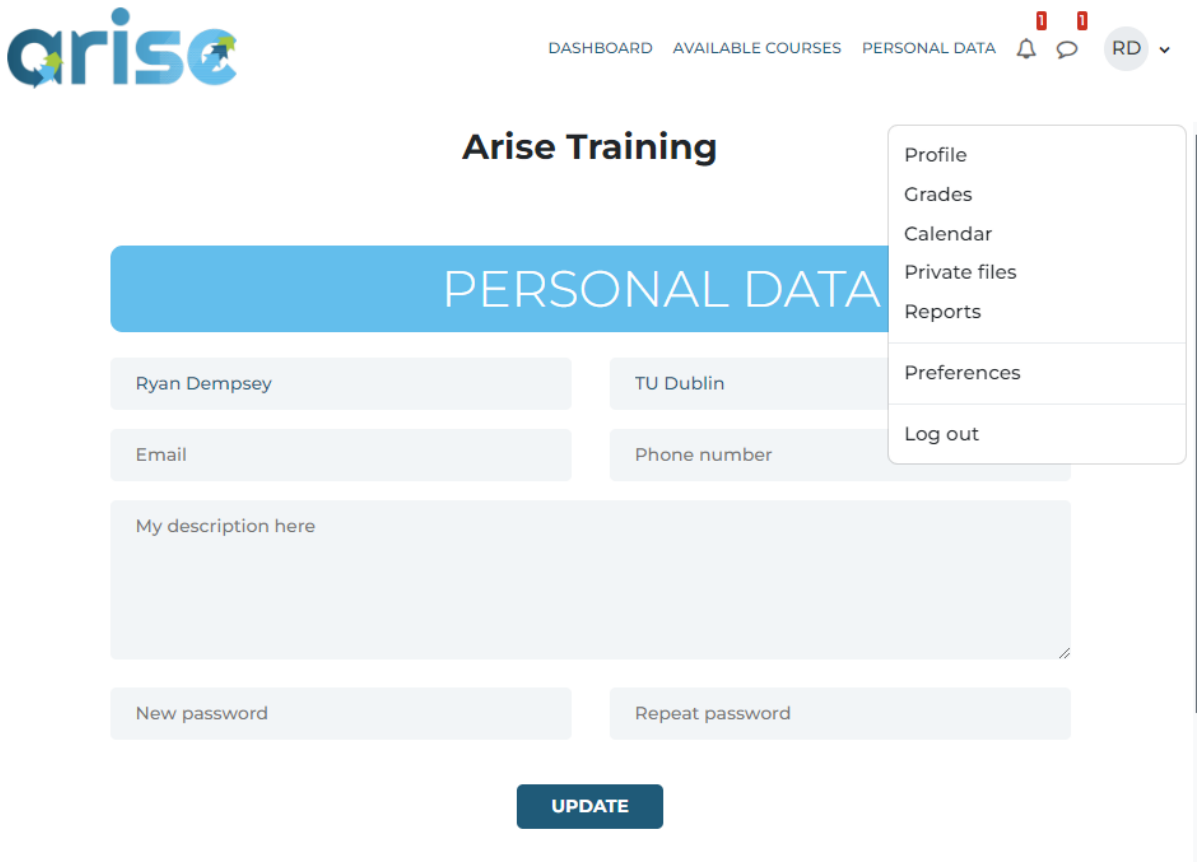
Please refer to Appendix 1 and 2 for a list of modules and training plans.



(Figure 16, Available Courses on ARISE Platform)

iii) Personal Data

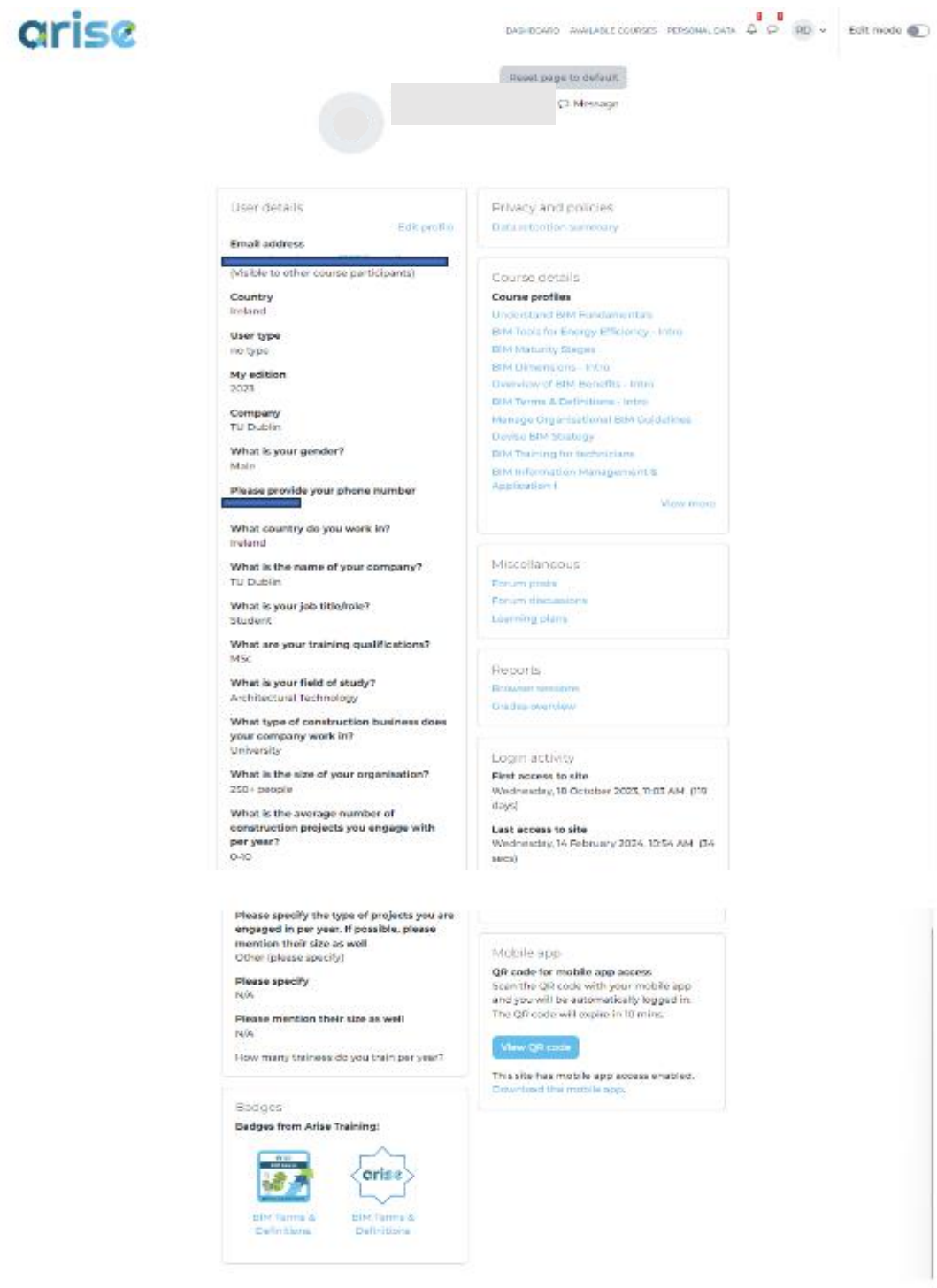
Personal data can be inputted or updated using the *PERSONAL DATA* tab or by clicking *PROFILE*, *which is* found by dropping down the additional options next to the initials on the user interface. Further to the *PROFILE*, users can also review their *GRADES*, *CALENDAR*, *PRIVATE FILES*, *REPORTS*, and *PREFERENCES*. You can log out from here once users have finished their learning session.



(Figure 17, Personal Data)

iv) User Initial Icon - Profile

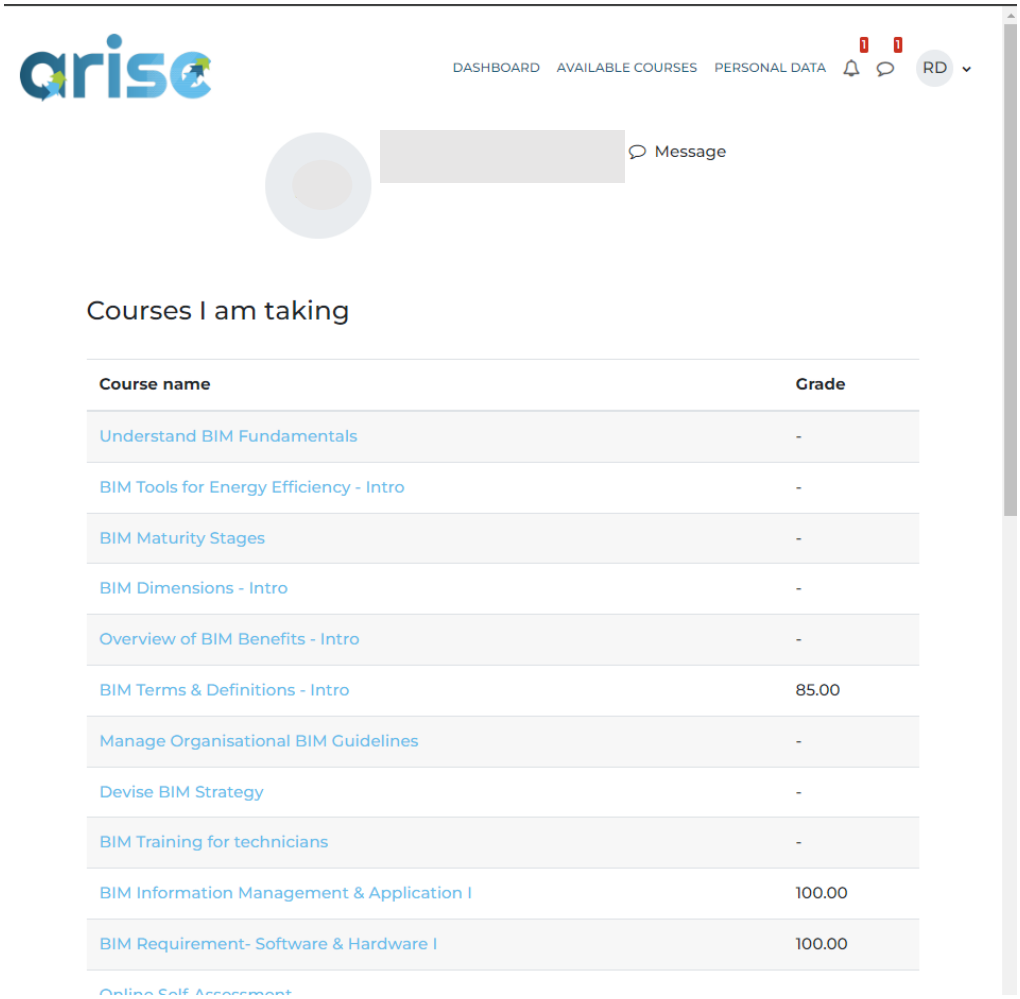
The profile section gives users the opportunity to review and update their user details, if necessary. Additional areas that can be reviewed include *privacy and policies, course details, reports, login activity, badges, and miscellaneous items.* Instructions are available for users who wish to automatically log in to the platform via their mobile device by scanning a QR code. Note that this code expires after 30 minutes.



(Figure 18, User Profile Overview)

v) User Initial Icon - Grades

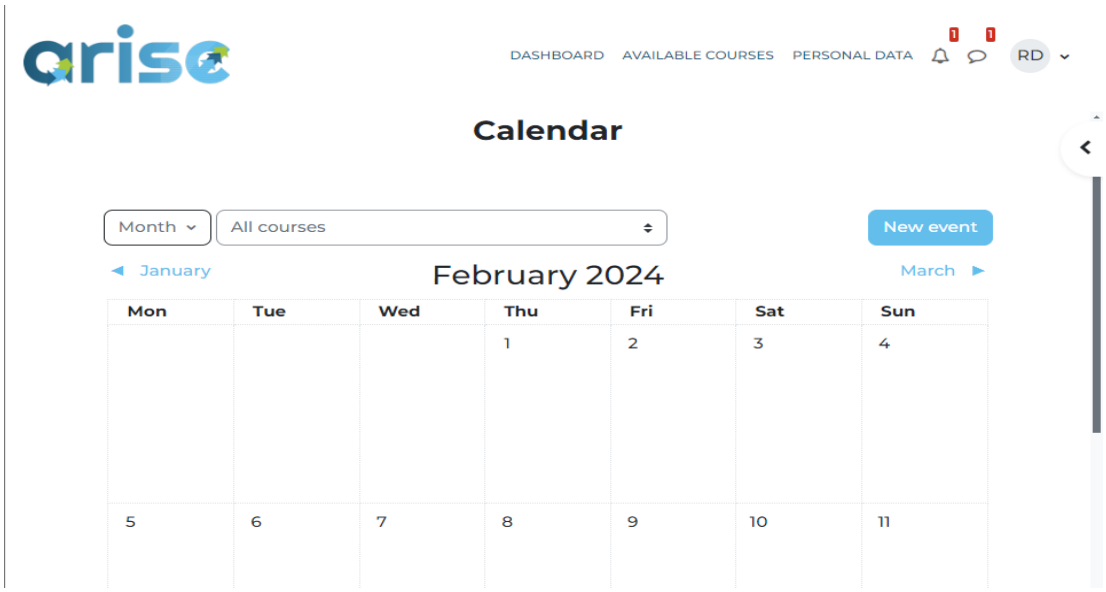
Users can review a summary of the courses they are enrolled in and any grades associated with the completed courses (Figure 19).



(Figure 19, Summary of Courses and Grades)

vi) User Initial Icon - Calendar

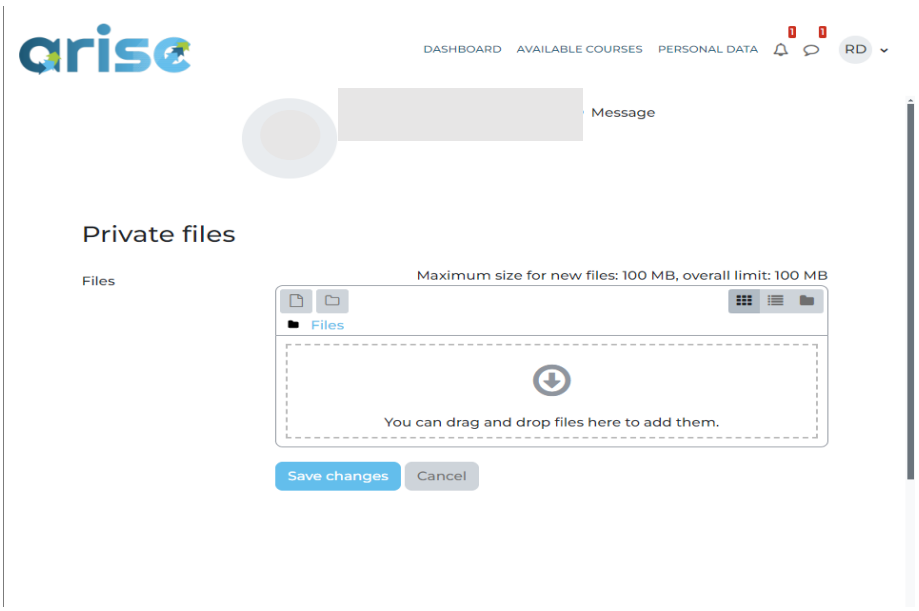
Should users enrol in lecture-led micro-modules, they can be scheduled on the calendar ahead of time. In addition, users may wish to use the calendar functionality to customise their learning plan (Figure 20).



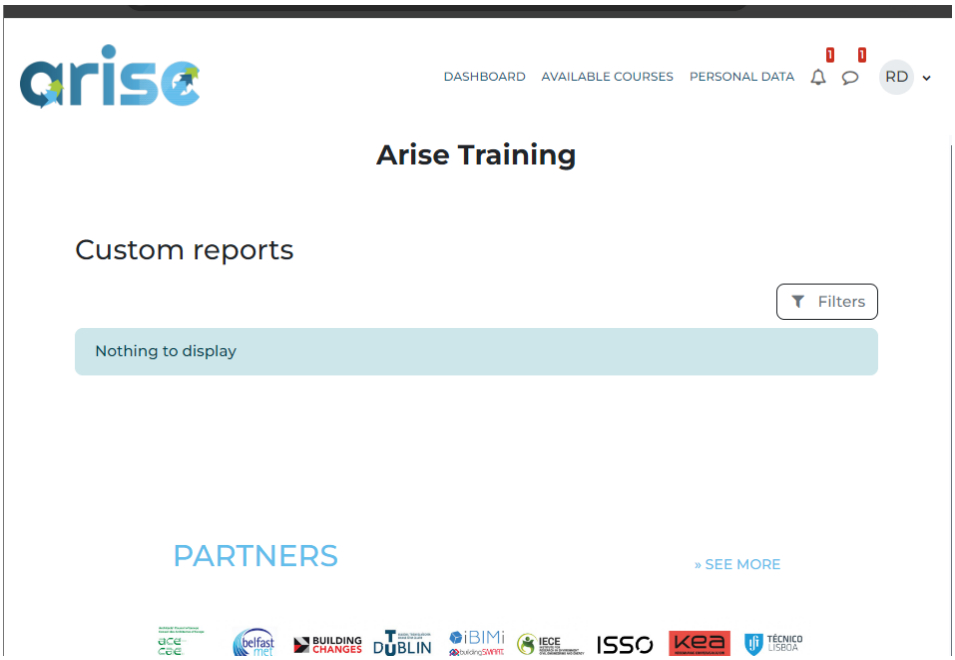
(Figure 20, User Calendar)

vi) User Initial Icon - Private Files and Reports

Private files and custom reports can also be added and reviewed (Figures 21 and 22).



(Figure 21, Private Files)

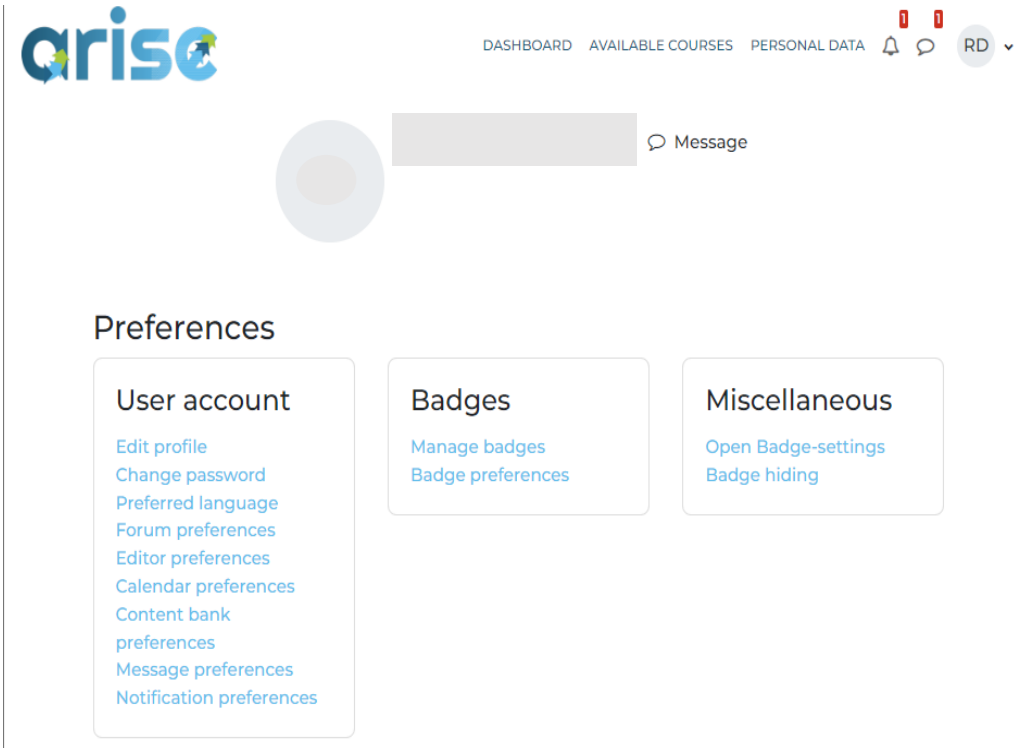


(Figure 22, Custom Reports)

viii) User Initial Icon - Preferences

Preferences open a range of options for users to customise their experience (Figure 23). There will be further buttons to edit the profile and change the password. As the ARISE project is operational in several EU Countries, we have included a preferred language option for the user interface and navigation bars. Currently, there are options for English (Default), Portuguese, and Italian. Not all modules have been translated. Only a sample has been translated. The use of the language filter in the front end will help find the appropriate ones.

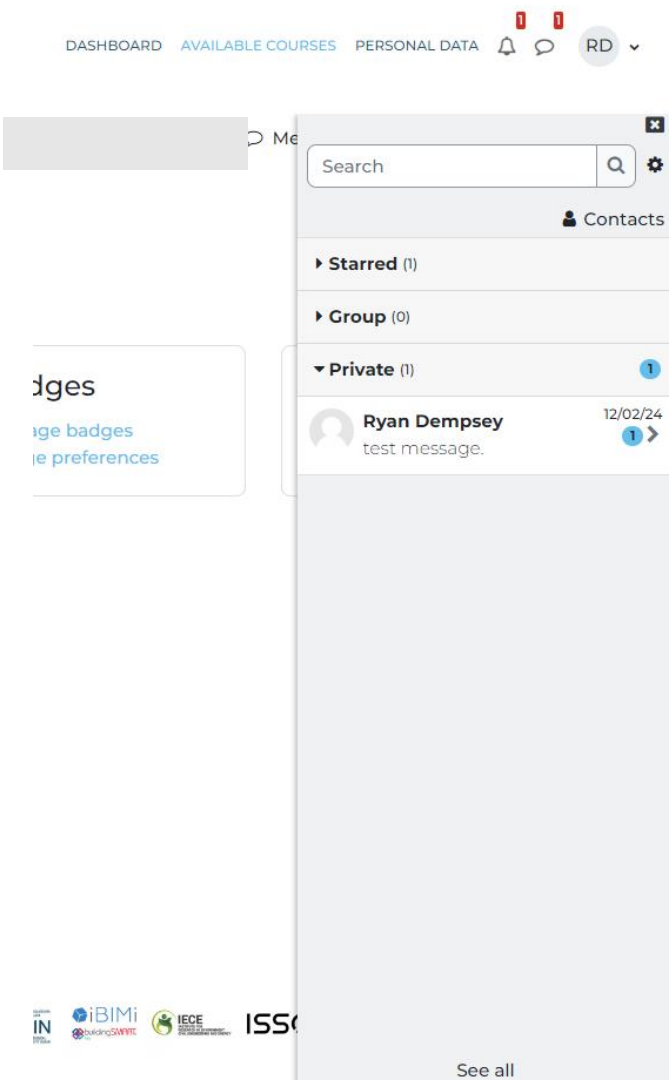
In addition to languages, preferences can also be set for forums, editors, calendars, messages, and notifications. Badges can also be referenced and managed within this area.



(Figure 23, User Preferences)

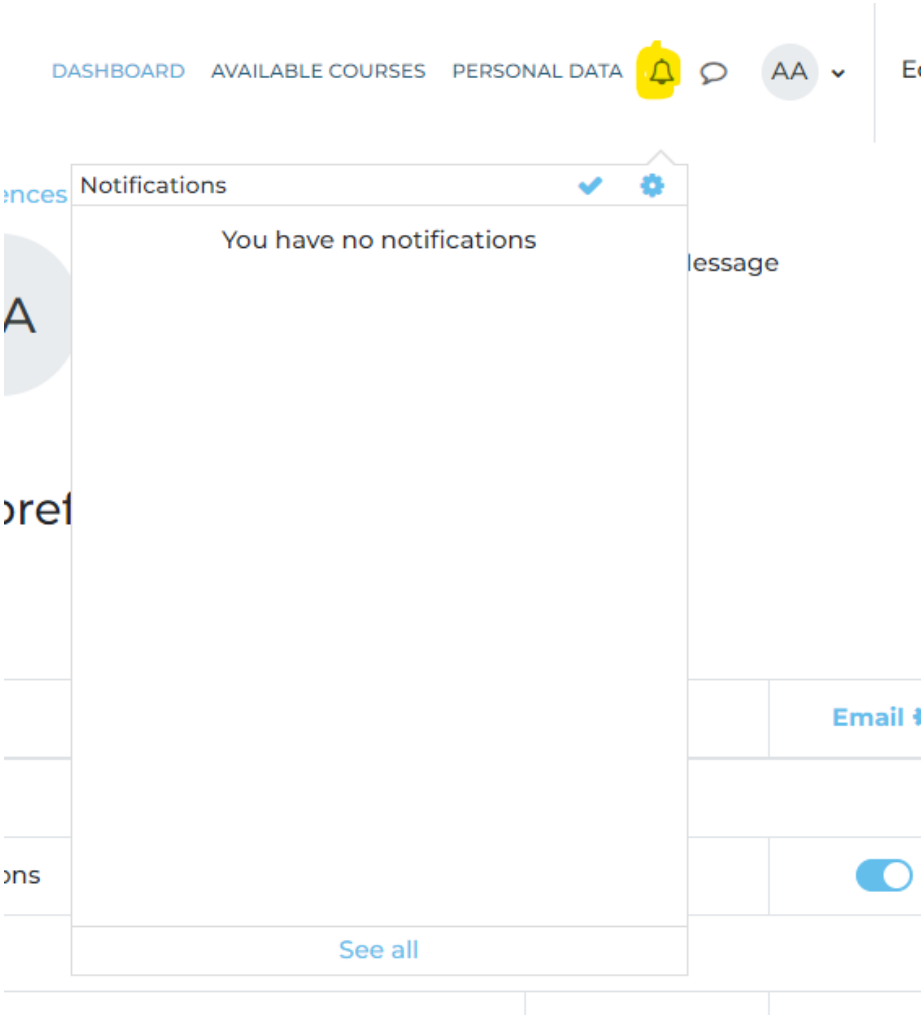
ix) Messaging and Notifications

The messaging functionality provides the opportunity for all to communicate within the platform (Figure 24). This may be from ARISE Project Members to Trainees/Trainers or trainees amongst themselves. Groups may be set up as well should there be any group sessions or learning content that involves group work. As part of the Site Administration, the messaging tool has been utilised to inform trainees of updates to course content and when extra material becomes available to use. Users will need to be logged in to send messages, although if a message should be sent out, you will receive it via email. This can be turned off in the preferences tab if required.



(Figure 24, Messaging Tool)

Users will be notified of any updates or changes through notifications (Figure 25). This will also be the method to notify users if they have been successfully enrolled in a course or have earned a badge. These will also be issued via email.



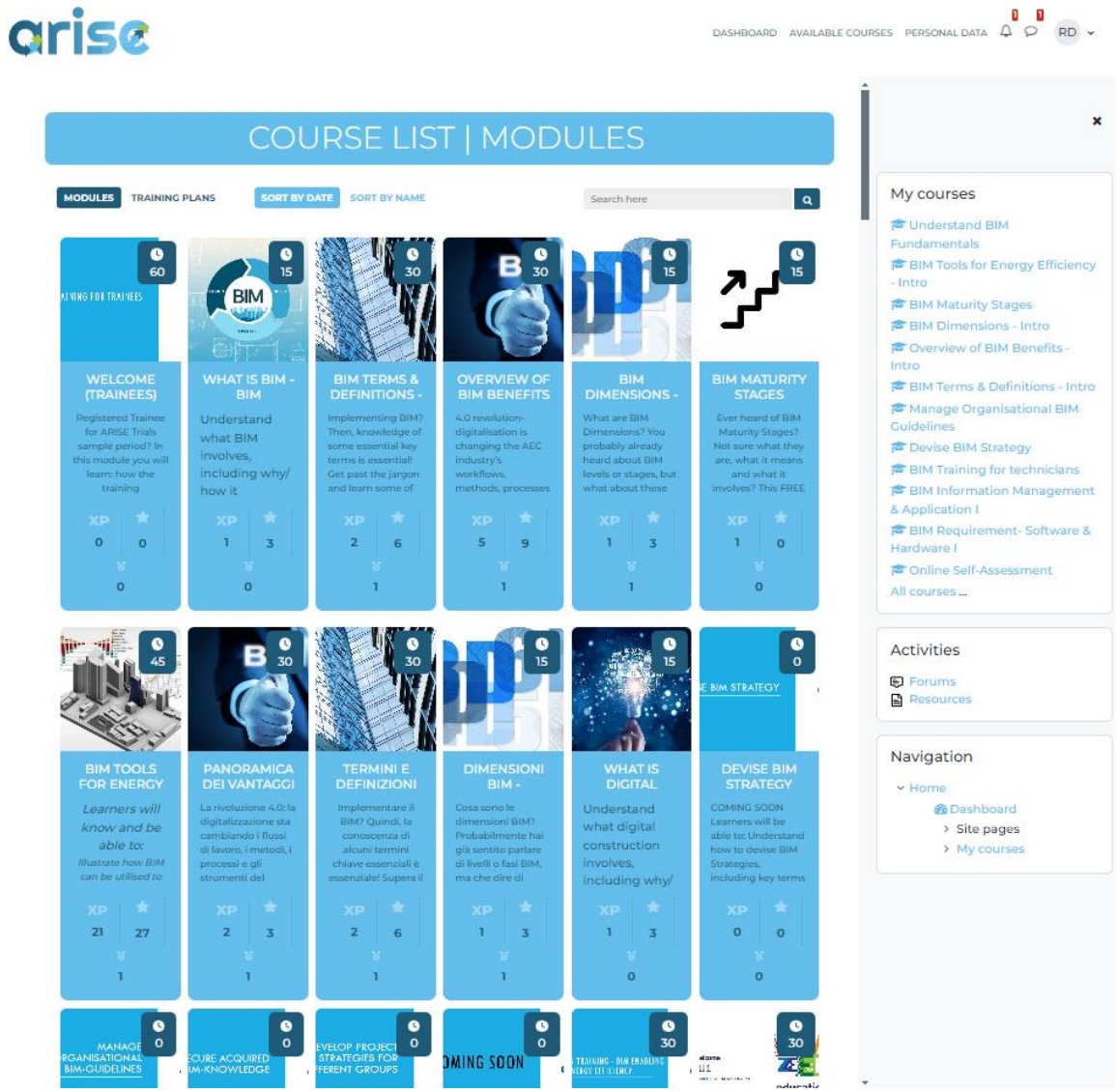
(Figure 25, Notifications)

5. Trainees

5.1 -Getting Familiar with the Working Space

This section will present an example of a trainee's journey from enrolment to completing a module and receiving a digital badge linked to the ARISE qualification framework and Open Badge Factory.

Once signed in, users will be able to navigate through the available courses and choose what Module they wish to enrol in. All courses that the user enrols in will be listed in the sidebar on the right-hand side of the user interface (Figure 26).



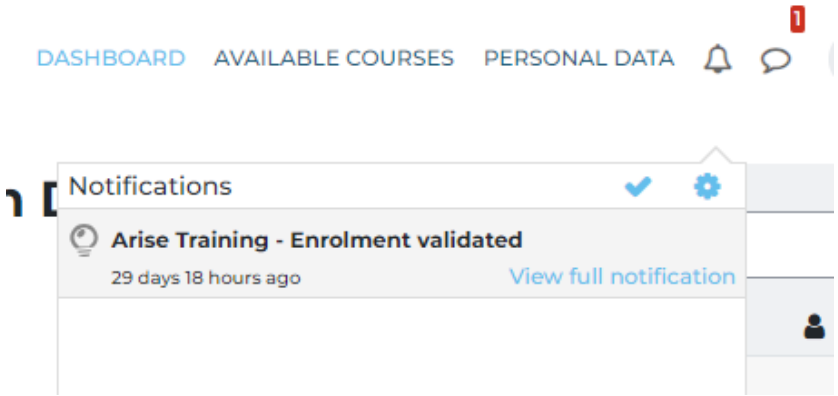
(Figure 26, Messaging Tool)

5.2 Enrolling in the micro modules

To demonstrate the process of enrolling on a module, an example using *BIM Terms & Definitions – Intro* will be used. To enrol, click on *"Enrol on Module"* on the module

preview page (Figure 27). Users will be notified through notifications and email when their enrolment has been validated (Figure 28).

(Figure 27, Module Enrolment)



(Figure 28, Notification of Enrolment)

Any modules that the user has been enrolled in will also appear in the dashboard under 'My Module List' which displays the gamification elements and progress for

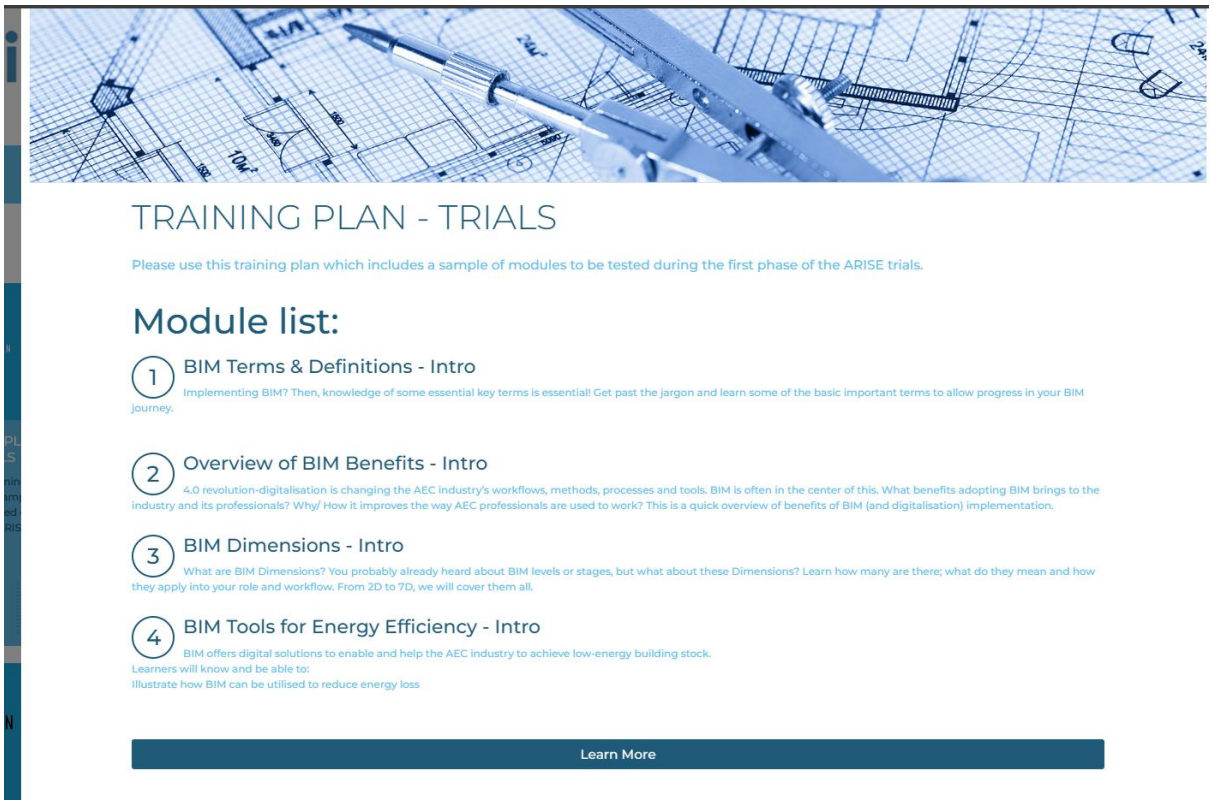
each Module (Figure 29). This will also be displayed at the top of each Module (Figure 30).

(Figure 29, Dashboard of Module List)

(Figure 30, Gamification and Course Progress)

5.3 -Enrolling in the training plans

To enroll in training plans, select the specific training plan and click *Learn More* (Figure 31). On the following page, you will be able to enrol using the same function as module enrolment (Figure 27).



(Figure 31, Gamification and Course Progress)

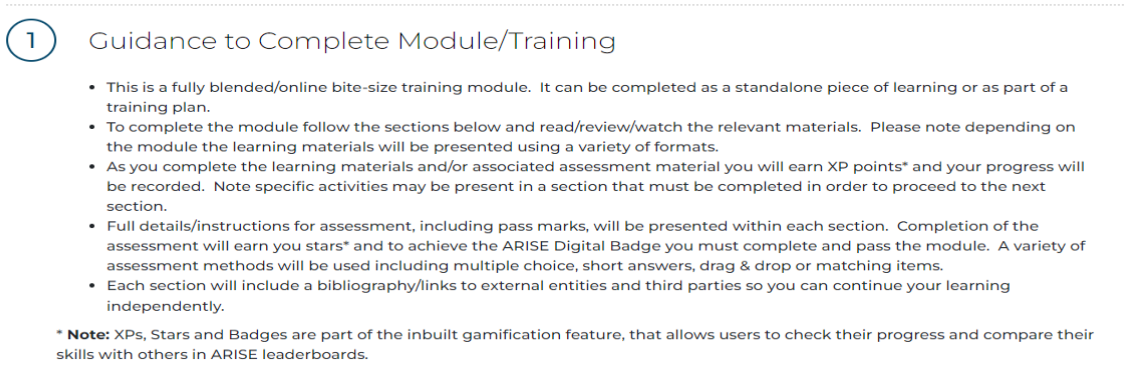
5.4 -Earning Badges

This section will demonstrate how users can earn badges by completing courses. First, the breakdown and structure of course content will be described. To set up each course, a template has been implemented to display the following at a minimum:

- Guidance to Complete Module/Training
- Intro & Description
- Coursework
- Bibliography
- Assessment

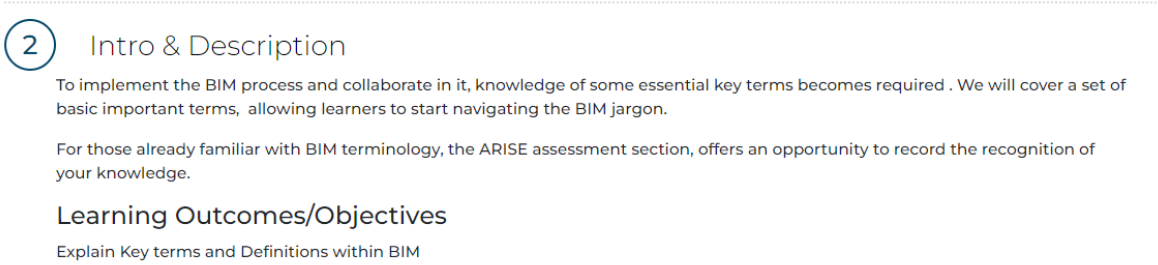
Guidance to Complete Module/Training breaks down how to complete the learning content and describes how users will earn stars, XP points, and digital

badges. The methodology and the context within the platform are also highlighted (Figure 32).



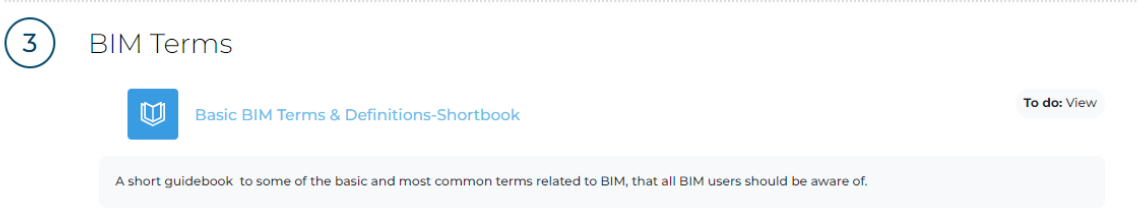
(Figure 32, Guidance to Complete Module/Training)

Intro & description will introduce the specific Module and outline the learning outcomes and objectives for the Module (Figure 33).



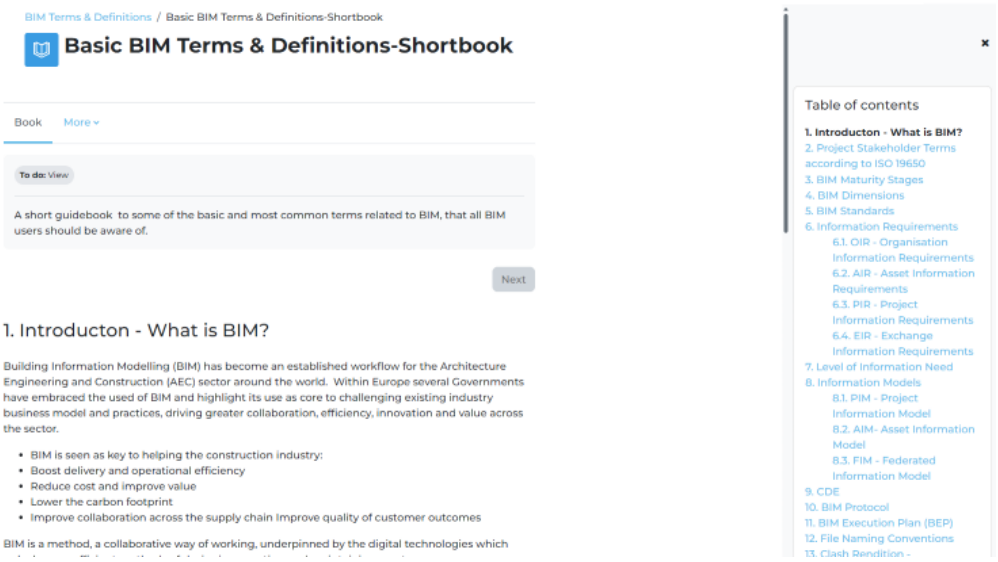
(Figure 33, Intro & Description)

The coursework will be developed using the activities function of Moodle. In this context for *BIM Terms & Definitions*, a book was used to describe the most common terms related to BIM (Figure 34).



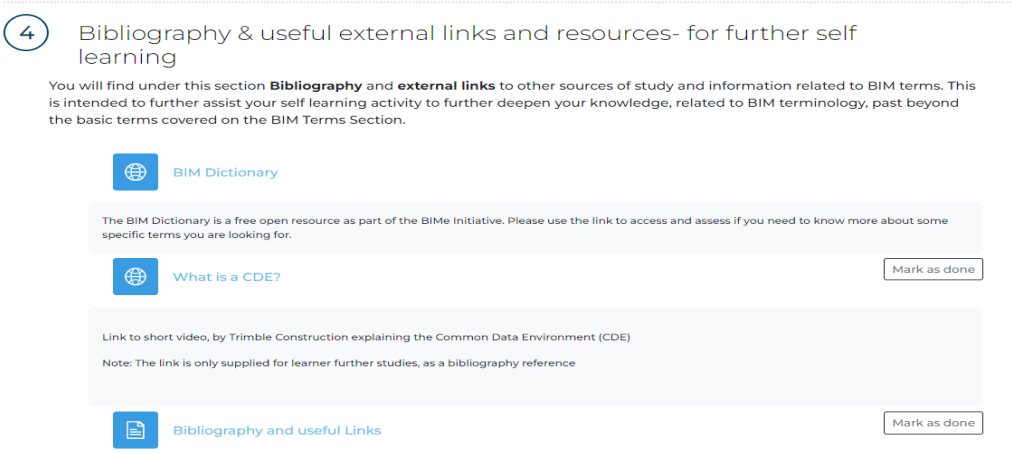
(Figure 34, Course Content - Book)

Within the book, the contents will introduce the subject and follow with specific chapters relating to the content. Sub-chapters may also be used where necessary for example, within *Information Requirements,* there are four sub-chapters (Figure 35).



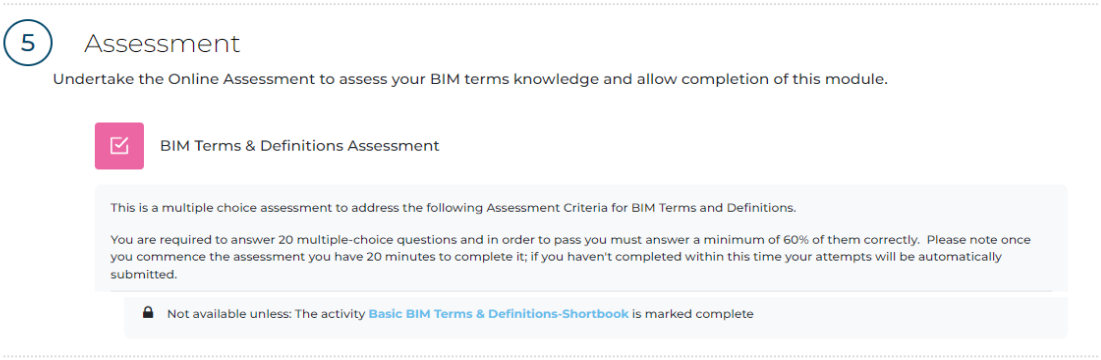
(Figure 35, Book structure)

Bibliographies offer the potential for users to explore additional resources and facilities for further self-learning. Each of the links provided will highlight the subject and include a link for the source (Figure 36).



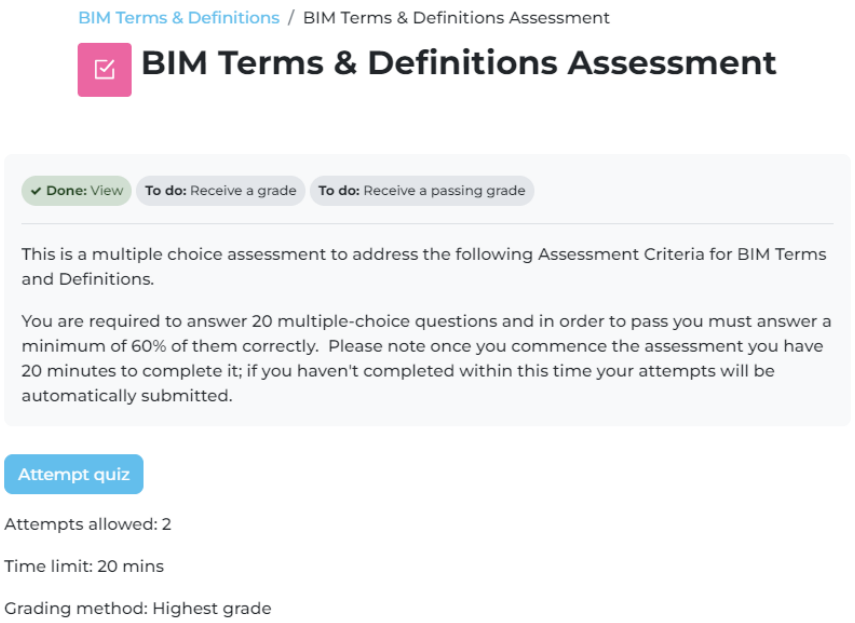
(Figure 36, Bibliography)

To ensure that users are reviewing the learning content and not missing required/advisory material, a rule can be set up that certain course content needs to be completed before moving on to the assessment. In Figure 37, the assessment method is shown as locked as the short book has not been completed.



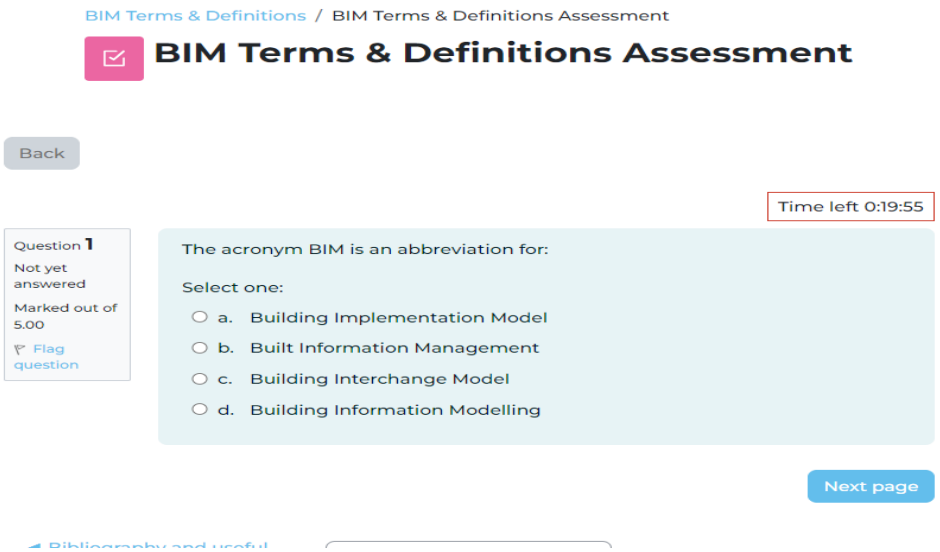
(Figure 37, Unlocking Assessment Method)

Once available, users will now be able to access the assessment method, which highlights the description and criteria for passing.

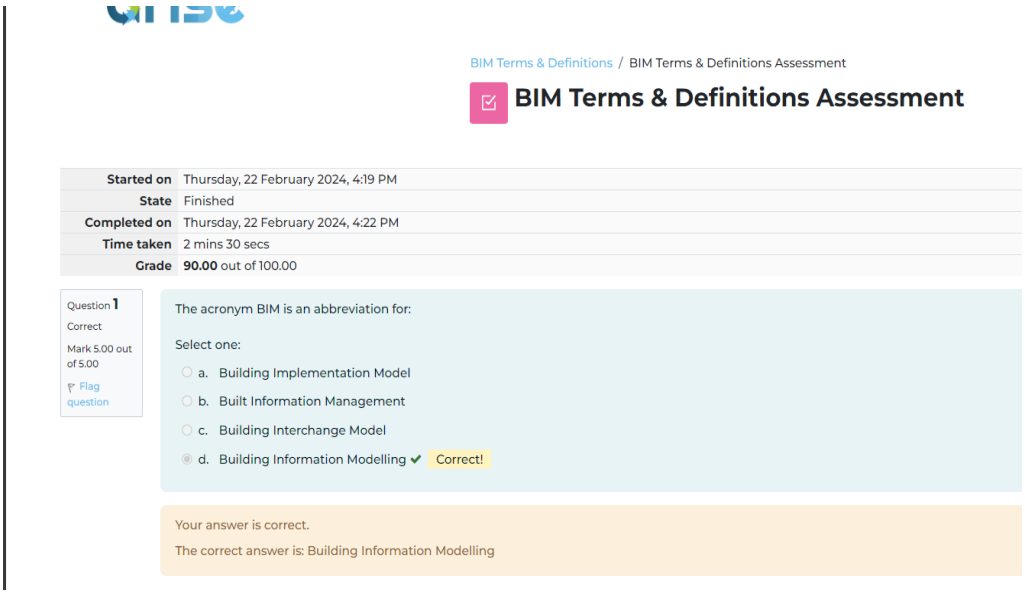


(Figure 37, Assessment Method Criteria)

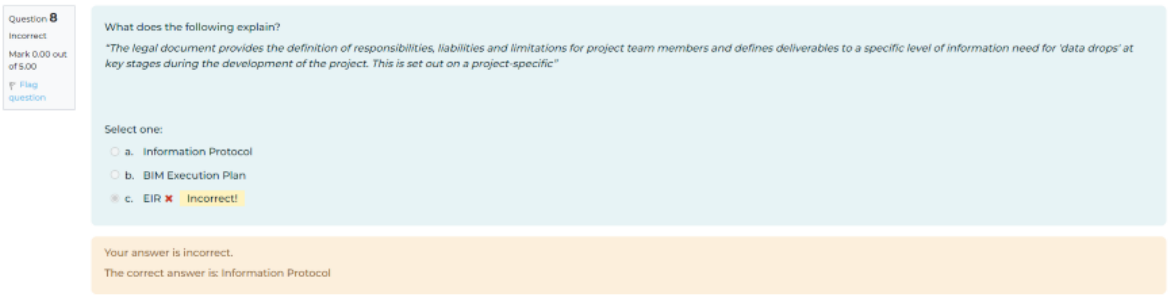
In this Module, a multiple-choice quiz was selected as the best assessment method for *BIM Terms & Definitions* (Figure 38). Feedback will be provided on questions that are answered both correctly and incorrectly (Figures 39 & 40)..



(Figure 38, Example Question)

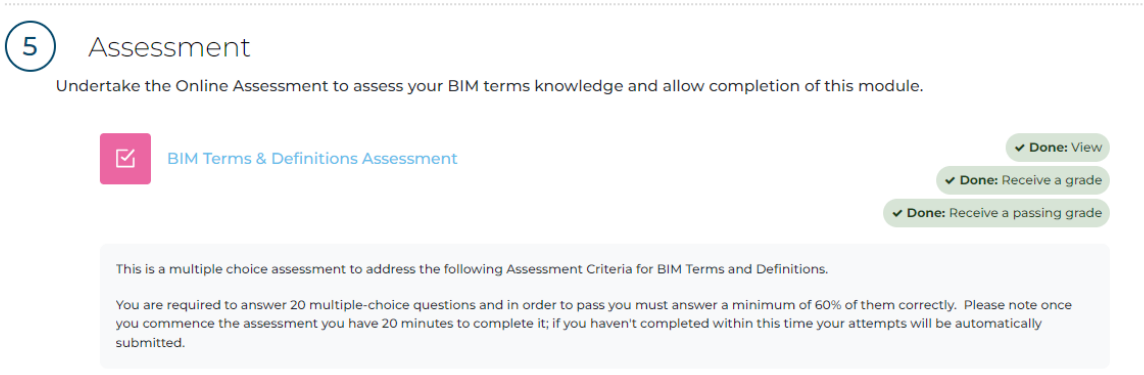


(Figure 39, Example Correct Answer)

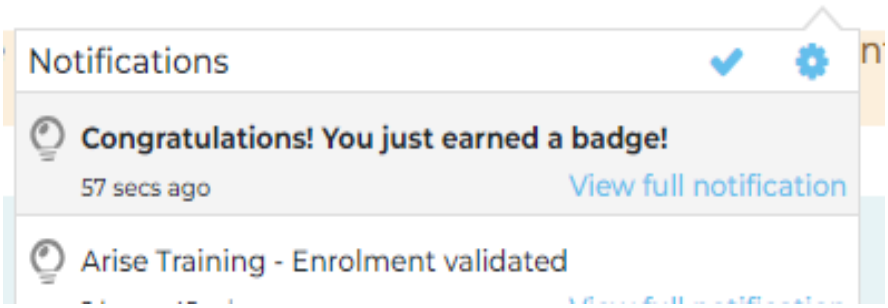


(Figure 40, Example Incorrect Answer)

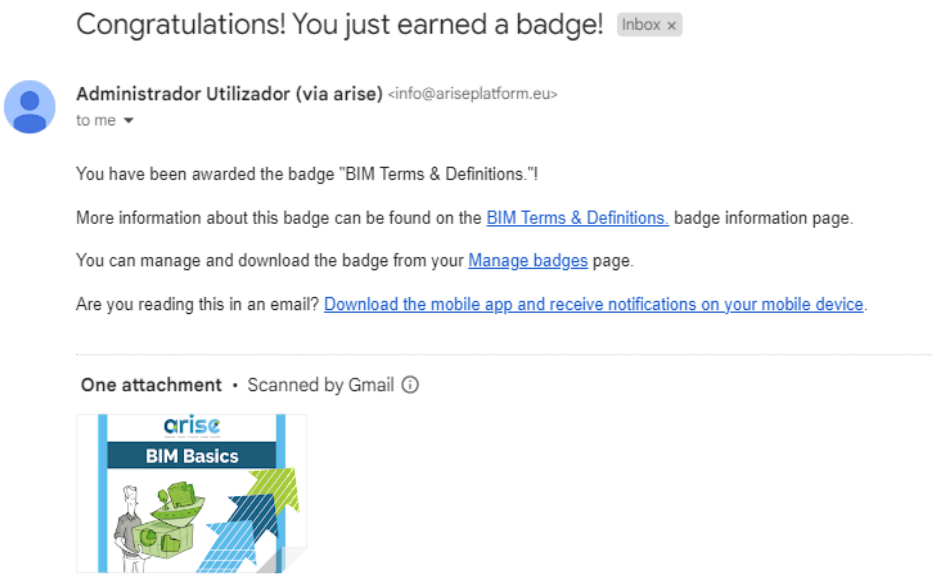
Following a successful attempt at the assessment, the course page will display that the assessment has been viewed, received a grade, and received a passing grade (Figure 41). This will trigger the awarding of the badge, which will be notified via email and notifications on the platform (Figures 42 & 43).



(Figure 41, Successful Assessment Method Attempt)



(Figure 42, Notification on ARISE Platform of Badge Awarding)

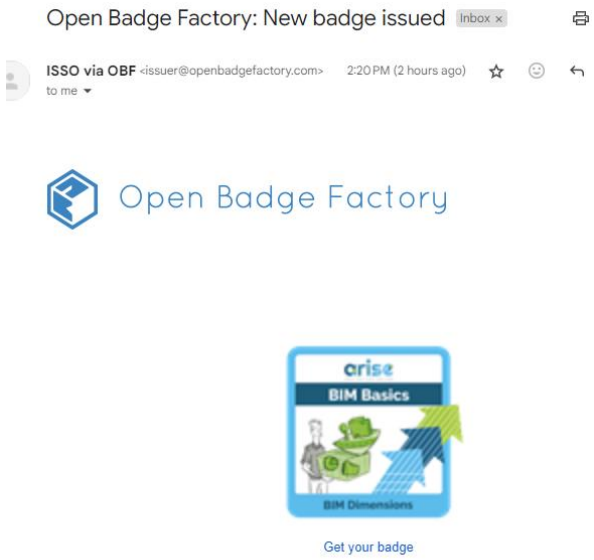


(Figure 43, Email Notification of Badge Awarding)

Upon completion of a course, the gamification features will be updated to reflect the user's results. In the case of Figure 44, 2 XP points, 6 Stars, and 1 Badge were issued for completing the activities in this "course" micro module. This will automatically display on the user's dashboard, and the leaderboard will be updated to reflect the rewards.

(Figure 44, Updated dashboard following course completion)

Lastly, an email will be generated from the Open Badge Factory to award the user with a digital badge that has links to the qualification framework (Figure 45).

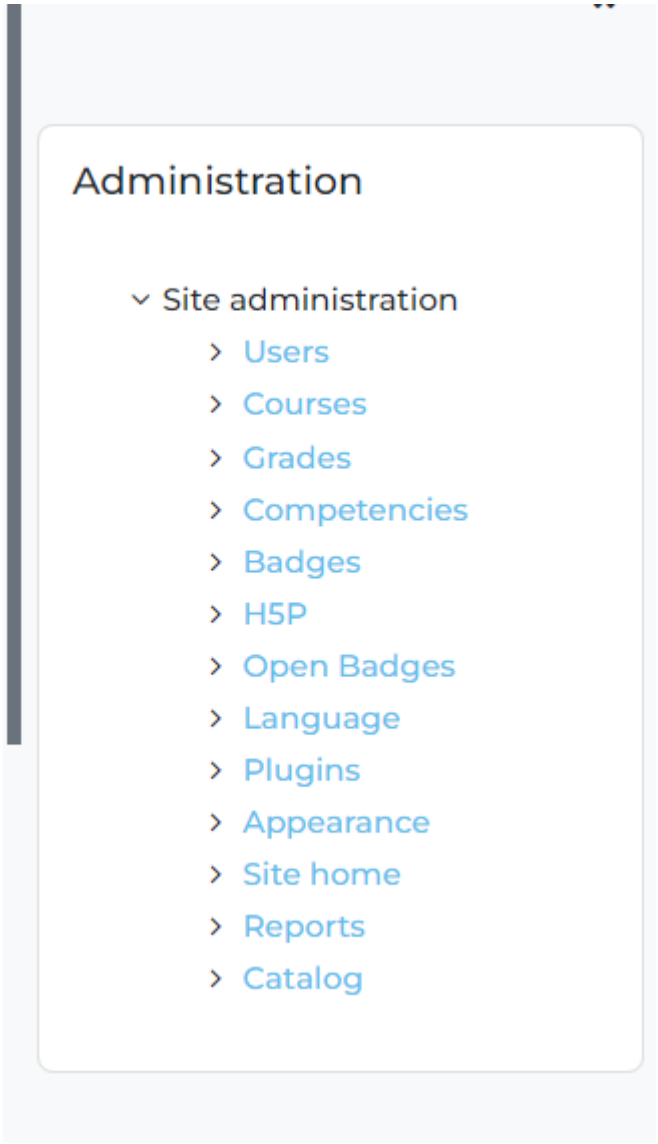


(Figure 45, Issuing of Open Badge)

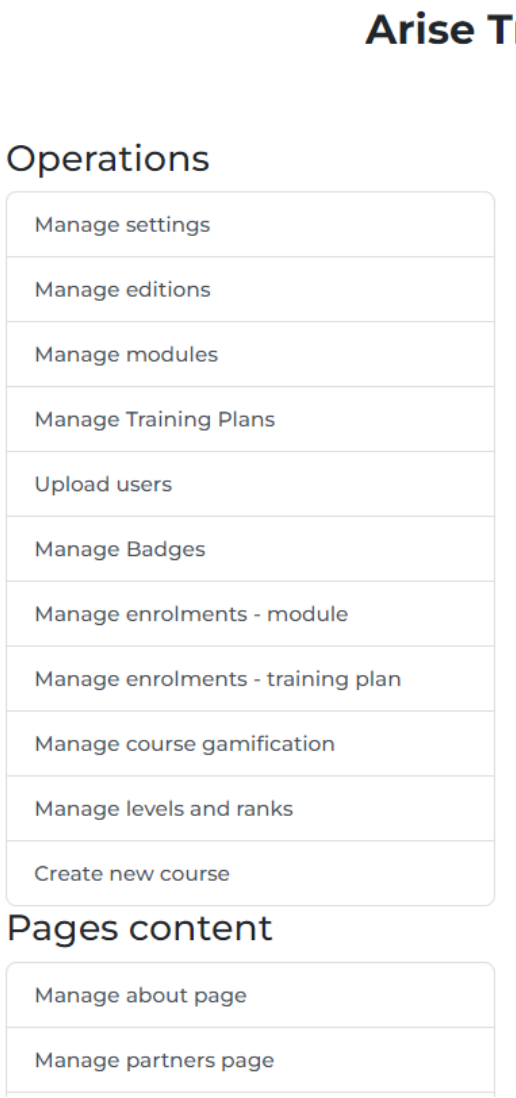
6. Trainer

6.1 -Getting familiar with the working space

As trainers, the process for engaging with the platform and user interface will differ slightly from that of the trainee. Firstly, the sidebar will open up several pages to manage the site (Figure 46). From *Catalogue,* trainers will have access to manage courses, modules, badges, gamification, and training plans (Figure 47).



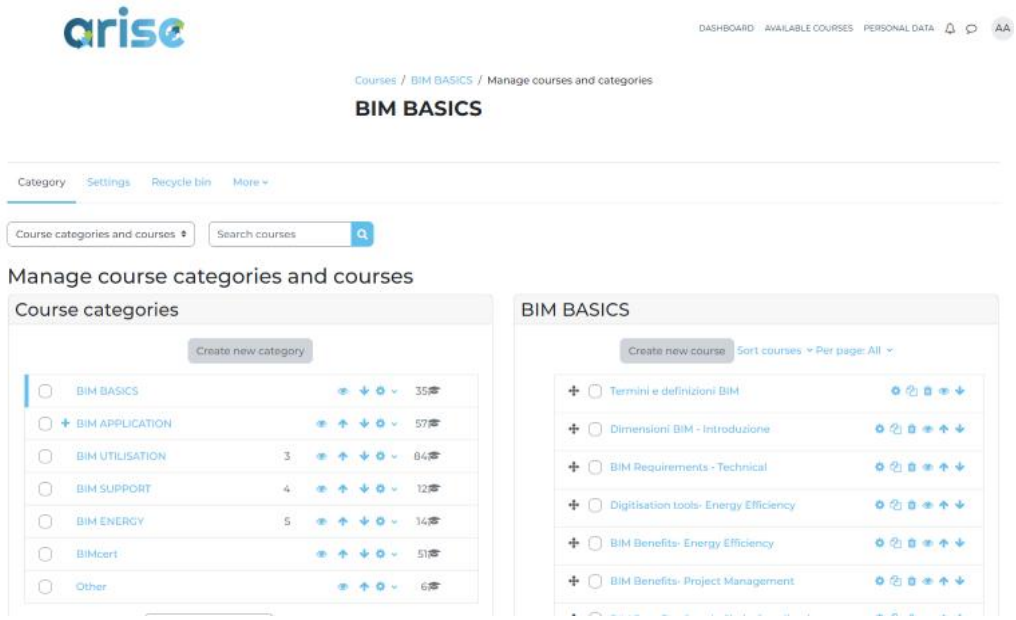
(Figure 46, Site Admin Settings)



(Figure 46, Managing Site Operations)

i) Manage courses

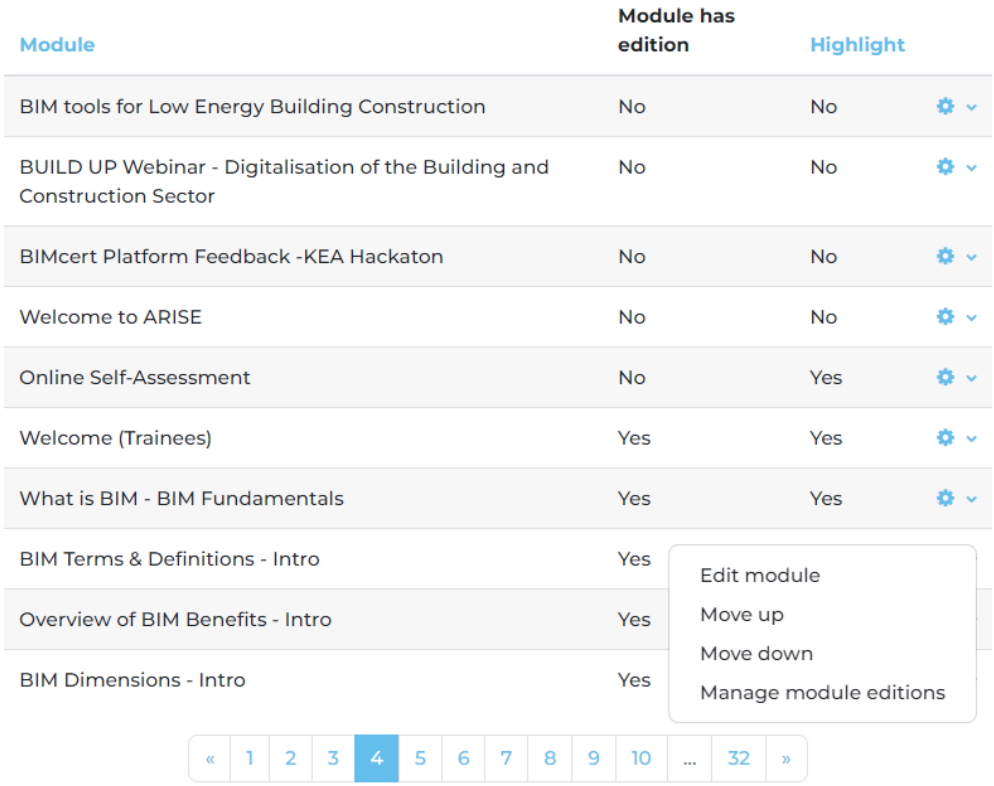
Starting with courses, trainers will have access to all of the course content created throughout the project and will have the opportunity to add their own. The course categories have been organised as per the QF and are as follows: *BIM Basics, BIM Application, BIM Utilisation, BIM Support,* and *BIM Energy* (Figure 47).



(Figure 47, Issuing of Open Badge)

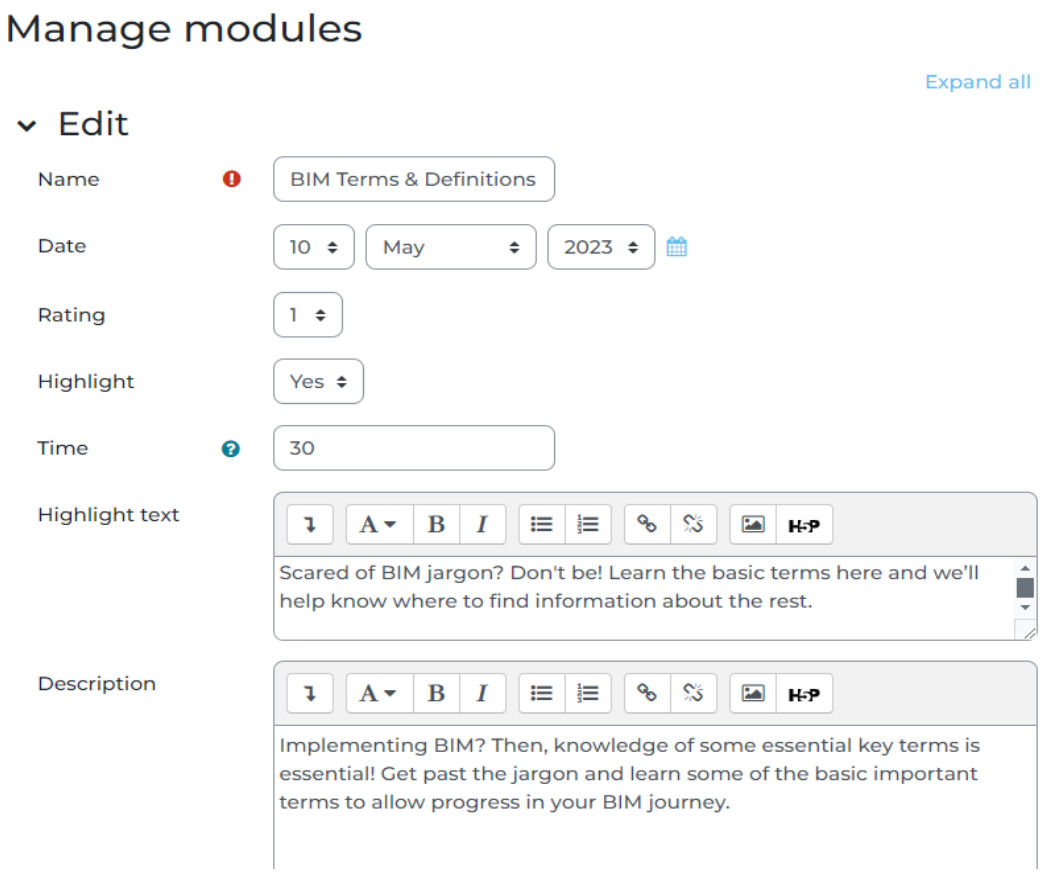
ii) Modules

To ensure that course content is visible in the front end and selectable for trainees, modules and module editions will need to be applied and mapped to specific "*courses*" (ARISE modules). This can be set up through the platform's site admin settings. New modules can be added and will require Information that will be displayed on the homepage, such as the description, time, highlight text, XP points, and badges. To edit a module, once set up, click the cog symbol on the right-hand side to open up the options for *Edit Module, Move Up, Move Down,* and *Manage Module Edition* (Figure 48).



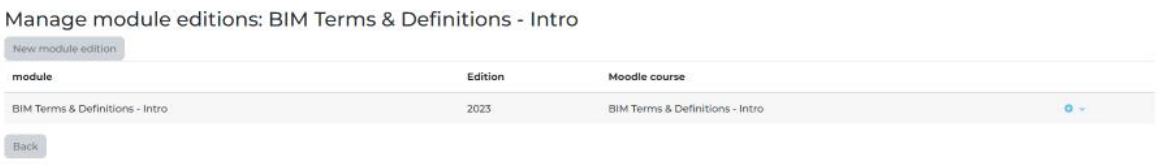
(Figure 48, Module Selection)

Once you are in the edit module section, you can edit any information related to that Module, such as the time or description (Figure 49). XP Points can also be updated at any stage. This is the Information that users will see on the home page and course list before enrolling, so it is crucial to have this set up properly.



(Figure 49, Edit Modules)

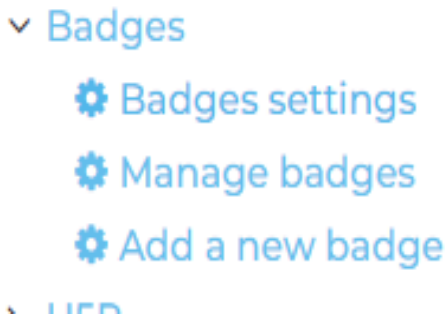
The final step before making a module "live" is to set up a module edition. Without a module edition, the course won't be visible to users on the course list. All module editions will have a year (2023) and Moodle Course (BIM Terms & Definitions – Intro) associated with them. It is here that the learning content of the courses is paired with the modules (Figure 50).



(Figure 50, Module Editions)

iii) Badges

ARISE uses a combination of Internal Badges and Open Badge Factory (Refer to deliverable 4.8 for open badge platform integration) for the awarding of badges. Internal badges are linked to the micro-modules and training plans but are hosted internally and are dependent on the platform's availability. Open badges are also linked to the modules and training plans and contain metadata that indicates the unit of learning outcomes and the associated sub-tasks and tasks of the qualification framework. The settings for internal badges can be found in the site administration toolbar, where they can be managed (Figure 51).



(Figure 50, Module Editions)

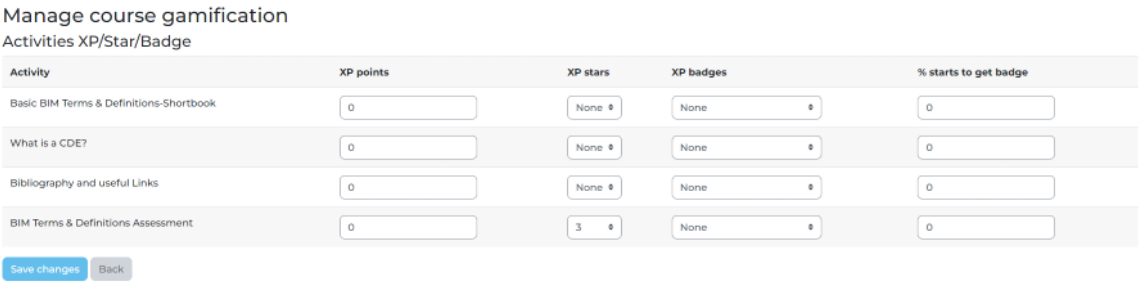
An overview of all badges will be displayed through *Manage Badges*. Here, trainers can see the available badges, the criteria for completion, and how many users have earned the badge (Figure 51). Note that badges that indicate "*Criteria Locked*" have already been earned and cannot be edited. For editing badges that haven't been earned, the cog will allow you to configure the settings. To make a badge visible for users to begin earning, ensure the eye symbol next to the cog is highlighted.

	BIM Requirements - Technical - Hardware/Software		Available (criteria locked)	• Complete: **"BIM Requirement- Software & Hardware I"**	110
	BIM Requirements- Information Management & Application		Available (criteria locked)	• Complete: **"ARISE_BIM Information Management & Application I"**	92
	BIM Standards I		Available (criteria locked)	• Complete: **"BIM Standards I"**	90
	BIM Terms & Definitions	2023	Archived	• Complete: **"BIM Terms & Definitions - Intro"**	0
	BIM Terms & Definitions.	2023	Available (criteria locked)	• Complete: **"BIM Terms & Definitions - Intro"**	415

(Figure 51, Badges Overview)

iv) Gamification

Further to the XP points and badges, XP stars can be allocated to the activities through *Manage Course Gamification*. This can be found in the Manage settings in Site Administration. As a rule of thumb, 1 XP point is allocated per 15 minutes of the Module, with possibly 3 XP Stars being applied for the same time. As XP Stars can only be applied to activities, this is typically applied to the assessment method at the end of the course (Figure 52).



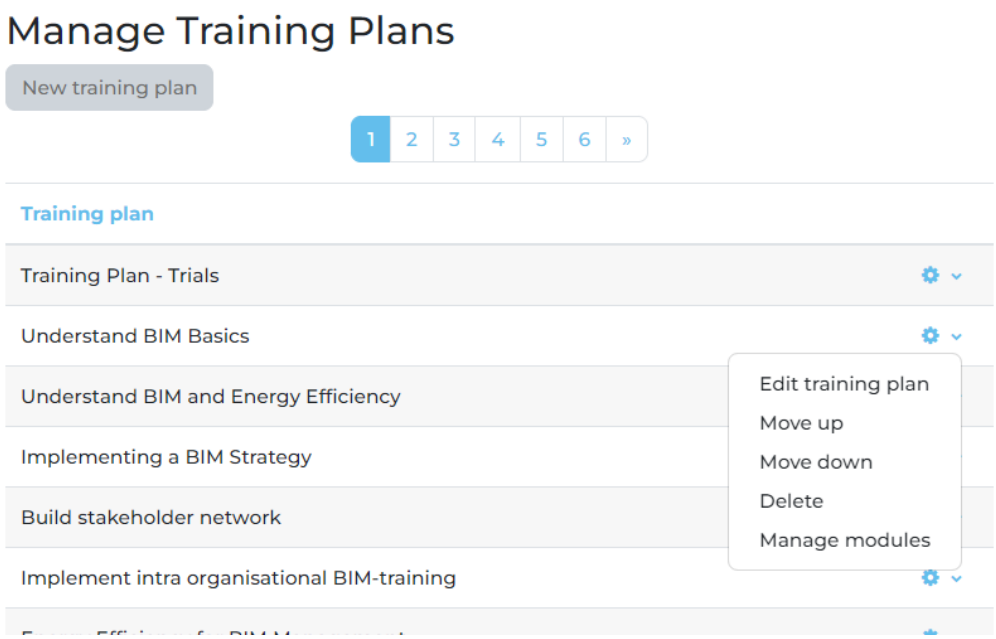
(Figure 52, Gamification Settings)

v) Training Plans

Training plans can be managed and set up through *Manage Training Plans* in site administration.

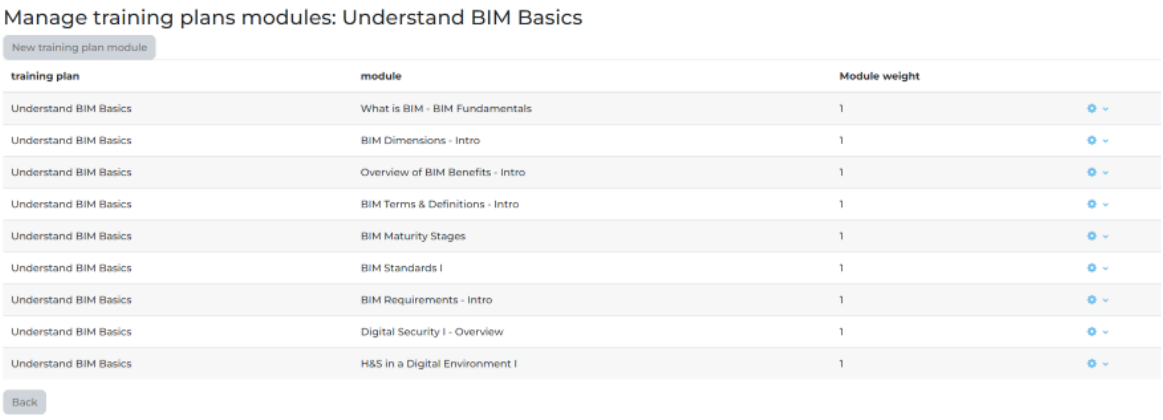
As stated, you can currently see an implementation preview with an extensive set of training plans on the ARISE platform that have been set up to match the tasks of the Qualification Framework literally. These serve as higher milestones that are achieved after completing all the indicative subtasks (lower milestones). These are currently set as placeholders and offer users and trainers the opportunity to see/ or, in the future, organise learning content into a more defined, complex, and complete training pathway.

By clicking on the cog for a specific training plan, you can edit, move, delete, or manage the modules associated with that training plan (Figure 53).



(Figure 53, Manage Training Plans)

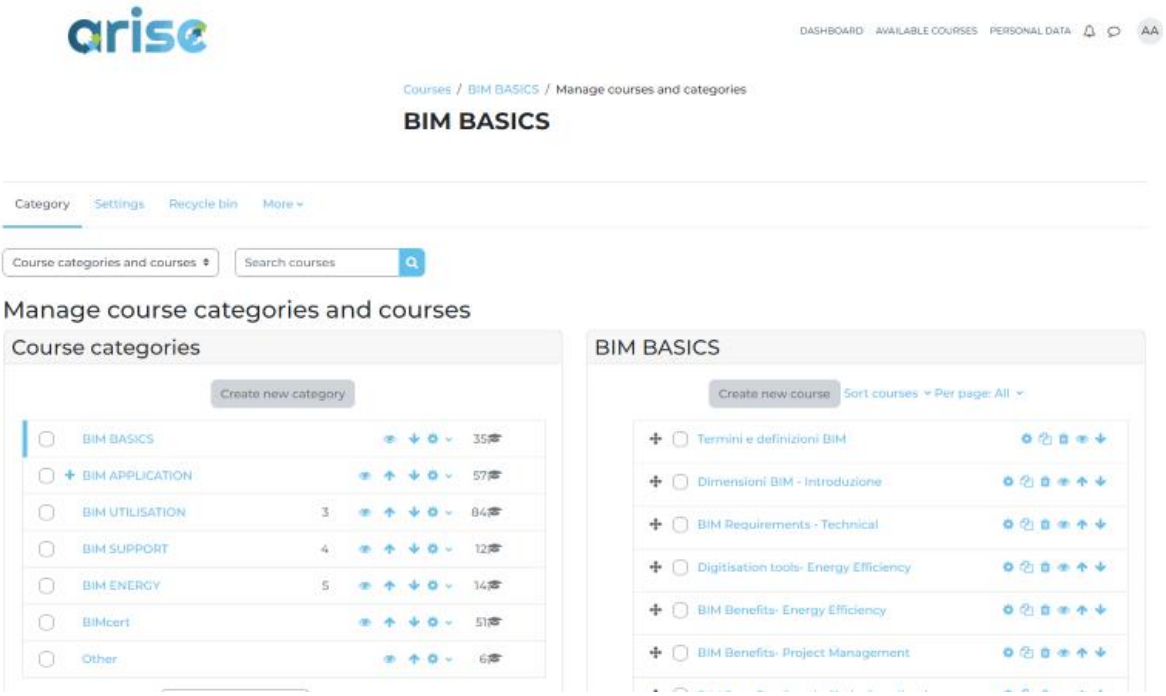
Once you are in a specific training plan, the associated modules can be selected, edited, or removed. The weight of each Module can also be customised (Figure 54).



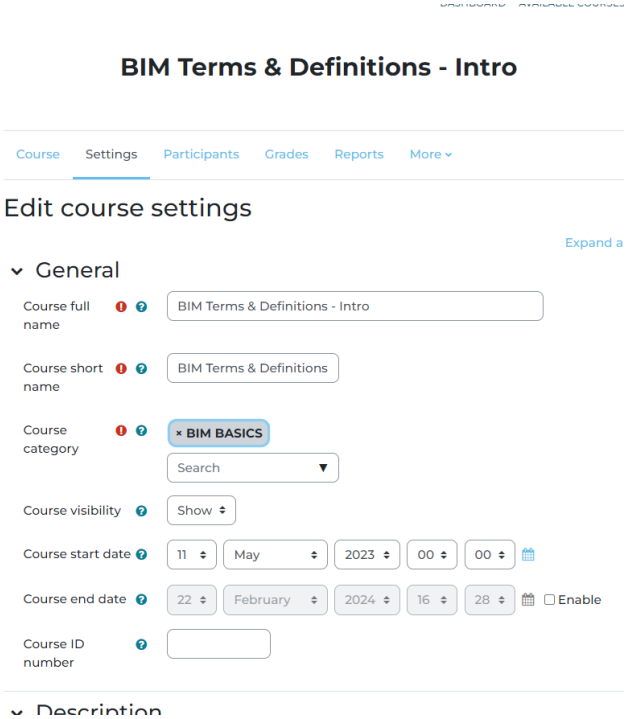
(Figure 54, Manage Training Plan Modules)

6.2 - Creating “courses” (micro modules)

To create “*courses*” (micro modules) or to edit existing courses, select the cog button on a selected course to display the settings (Figure 55). From here, trainers can name or rename the course name and assign the course category, relevant dates, and descriptions. Tags and Keywords can also be applied to assist in filtered searches on the home page (Figure 56).



(Figure 55, Manage Training Plan Modules)

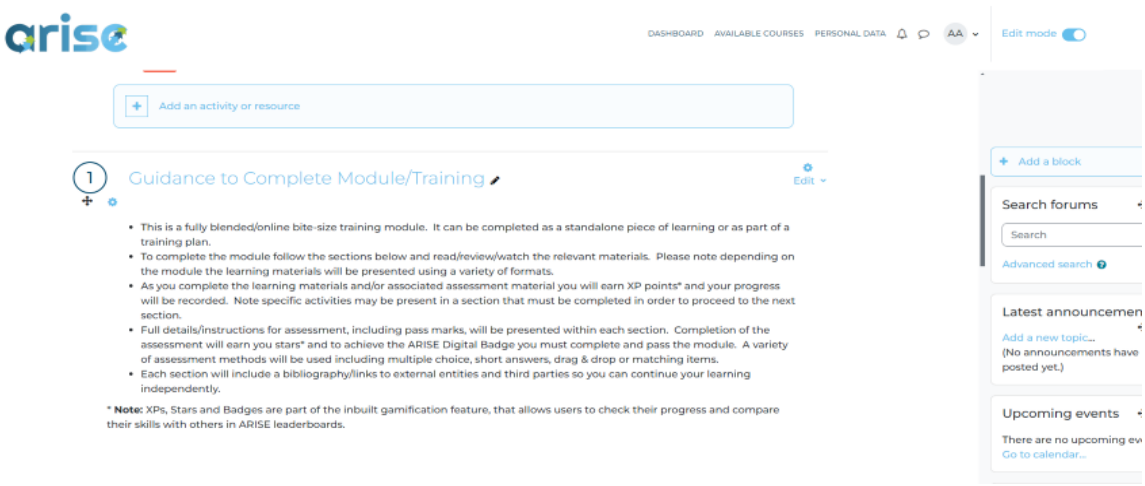


(Figure 56, Manage Training Plan Modules)

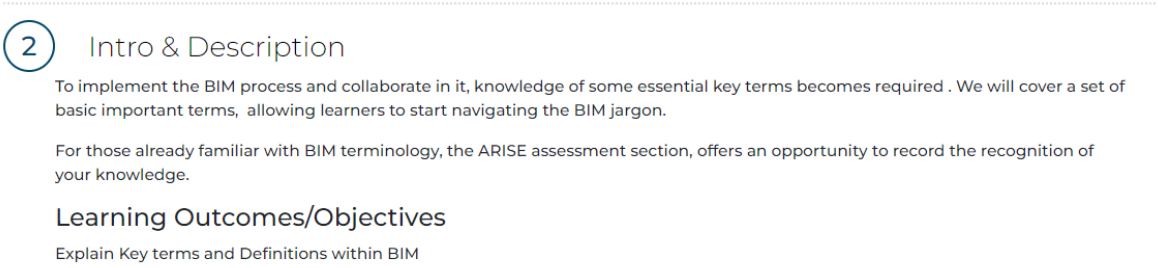
To edit the content within the "*courses*" (micro modules) , ensure the edit mode button is selected in the top right-hand section of the toolbar. This will allow trainers to write the content of the page and assign sections. The standard template, at a minimum, for each of the courses was agreed by the ARISE team, with each course having the following criteria:

- Guidance to complete module/training: An overview of the Module and how to complete it (Figure 57).
- Intro & Description: An explanation of the key learning outcomes the user will gain upon completion of the Module (Figure 58).
- The next section(s) will contain the uploaded material (Figures 59 & 60).
- Bibliography & useful external links and resources- for further self-learning: This section will have links to further areas of study (Figure 61).

- Self-Assessment Review / Module Final Assessment: This is where the student will complete the required assessment to pass the Module (Figure 62).



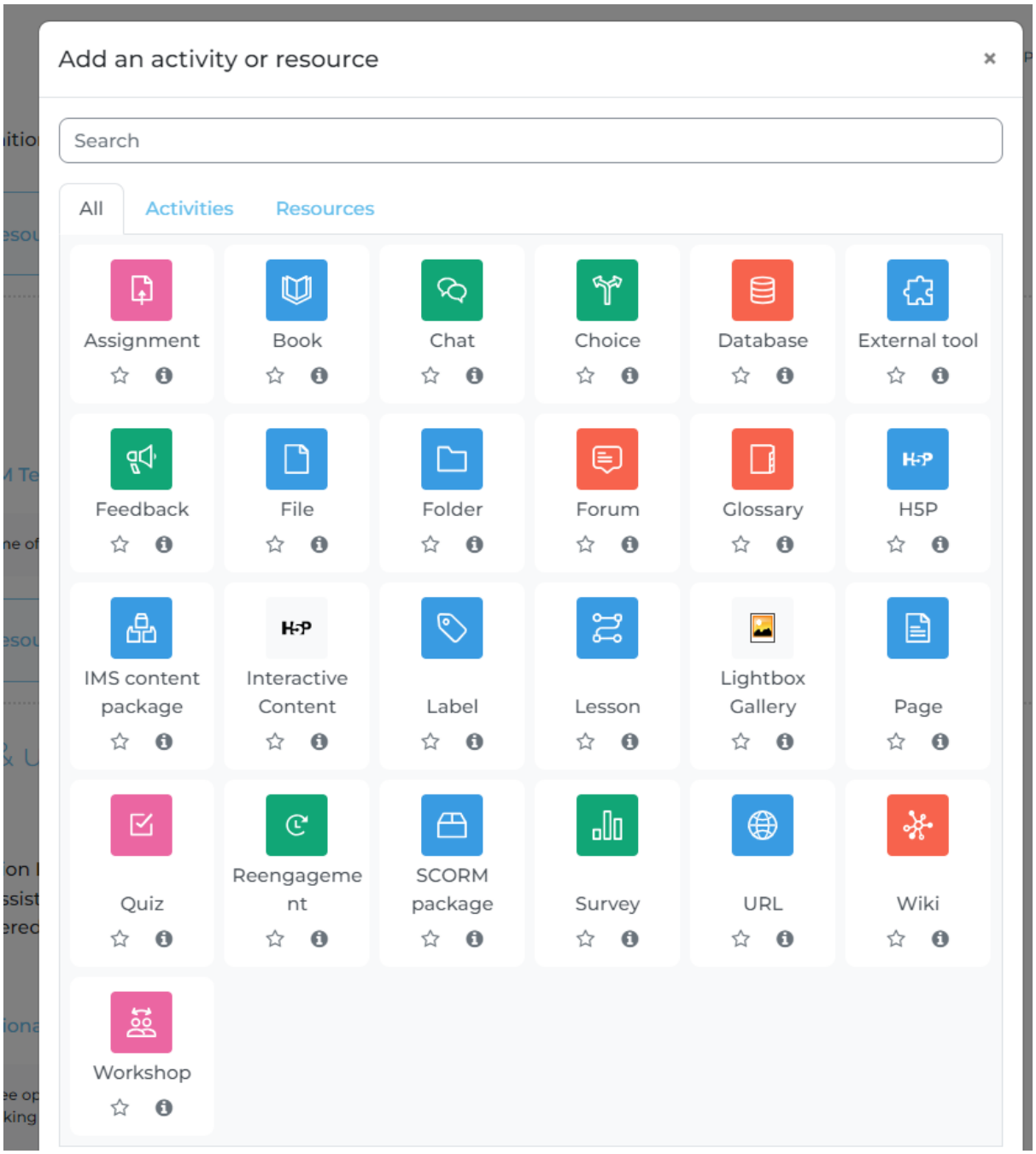
(Figure 57, Guidance to Complete Module/Training)



(Figure 58, Intro & Description)

6.3 -Creating learning material

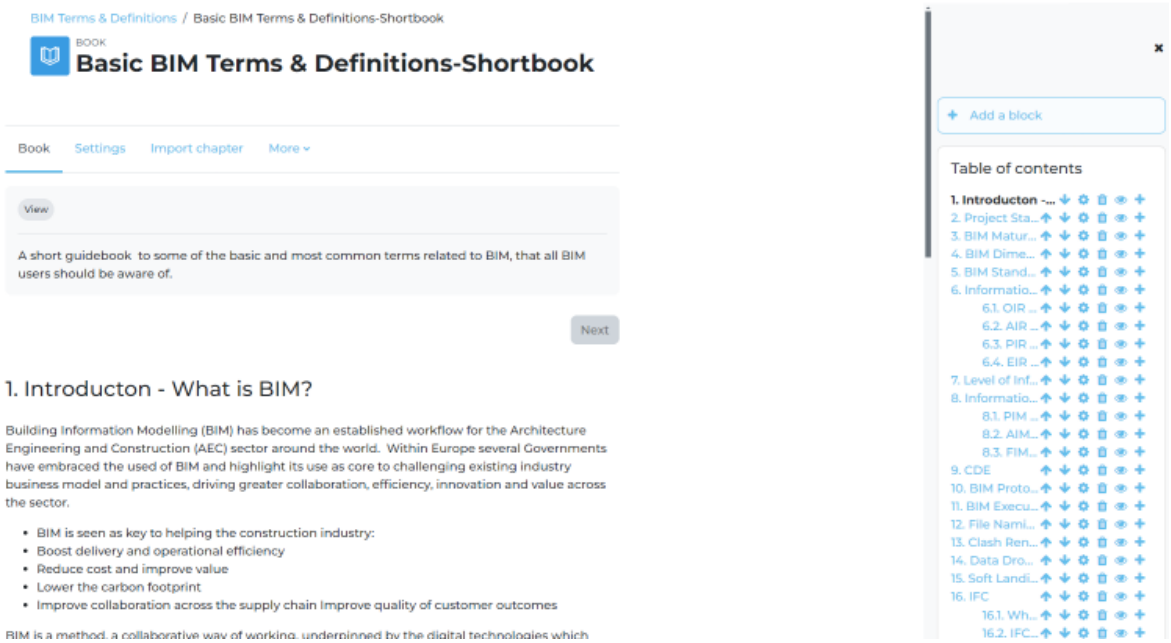
To create the learning material, there are several tools which can be adopted through the activities tool. Here, there will be a selection of tools, including books, pages, lessons, links to documents (e.g. PPS), assignments, URLs, lessons, and quizzes. The most common material delivery methods adopted on the ARISE platform have been a combination of books, page file uploads (PowerPoint and PDFs) and videos. The platform caters for a much larger number of material formats



(Figure 59, Add an activity for learning content)

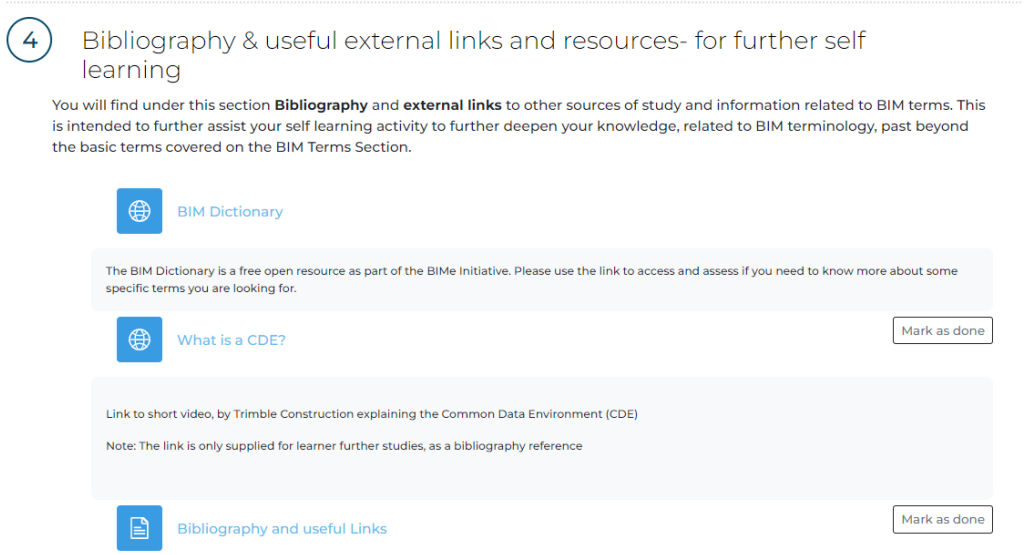
Taking the example of the book for *BIM Terms & Definitions*, most books will follow a sequence of *Introduction*, *Chapter 1*, *Chapter 2*, *etc.*, and *Conclusion/Summary*. Sub-Chapters can also be applied if needed. To set up a book, use the sidebar

containing the settings for creating new chapters, editing existing ones, and adjusting their order.



(Figure 60, Intro & Description)

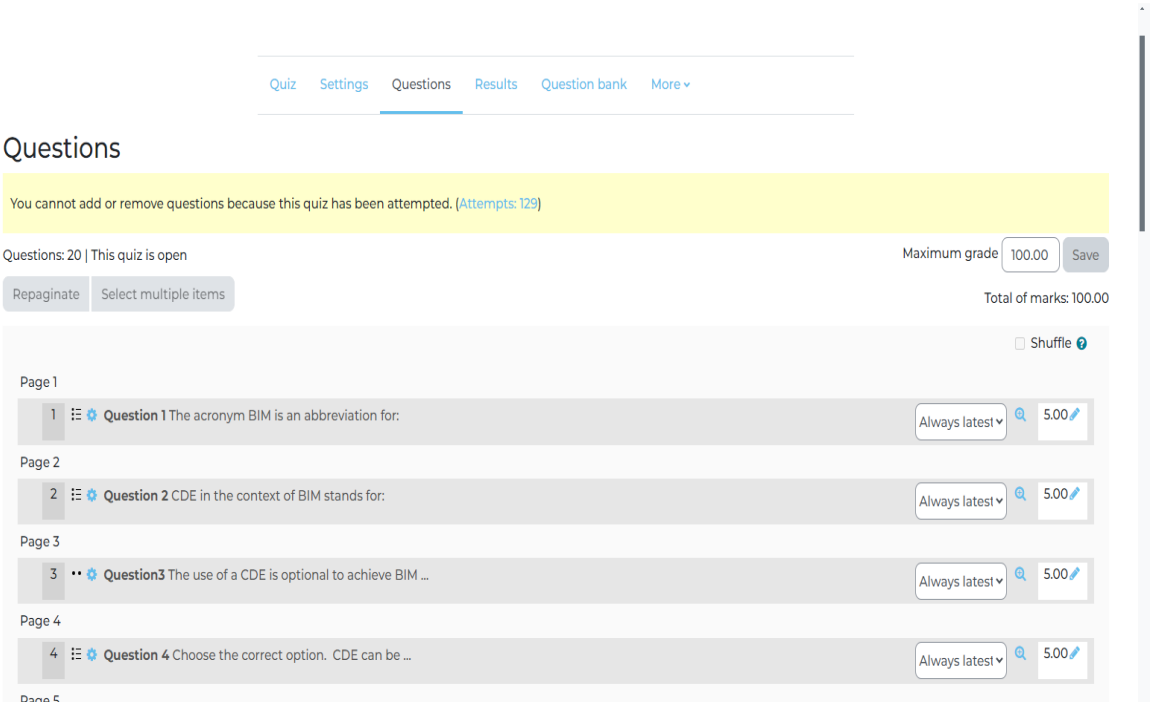
Bibliographies may come in the form of websites, videos, or papers. These can all be accommodated by using the URL activity tool. This will ask for Information such as the name and link. For videos, it is recommended that they are embedded, provided the author allows for embedding on their videos.



(Figure 61, Bibliography)

6.4 -Creating assessments

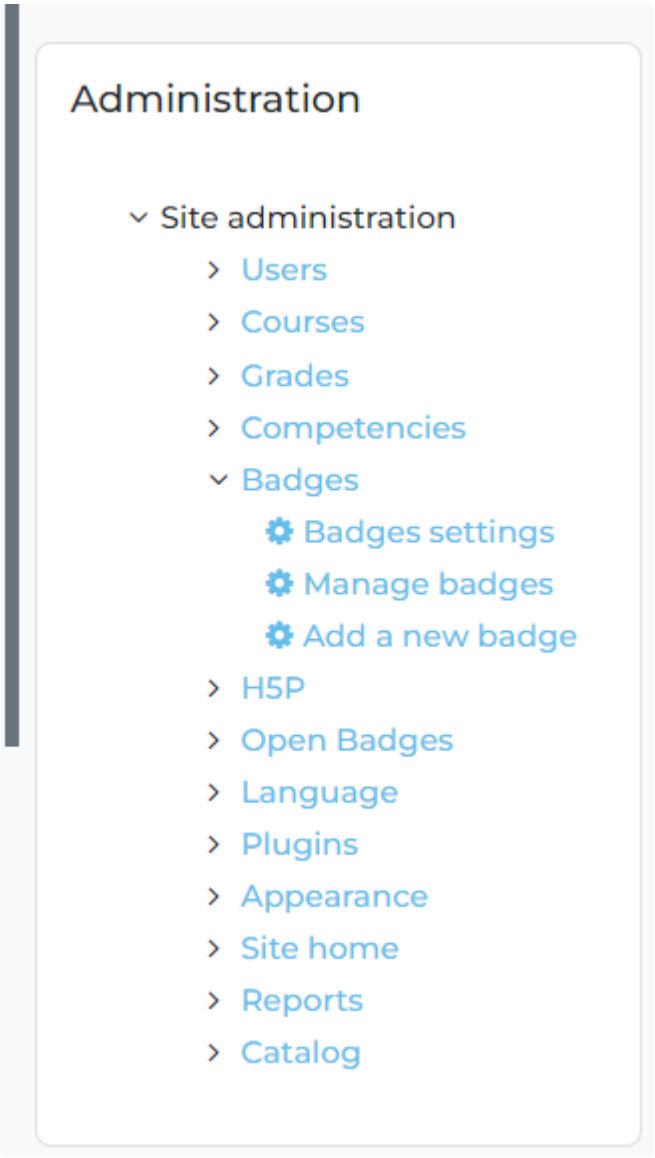
Each Module will have an assessment method, which will primarily be in the form of a quiz, as mentioned previously, to ensure the learner will have accessed and learned from the contents, a rule can be imposed so that "course" content needs to be completed before moving onto the assessment. Quizzes may vary in time and questions, although typically, 20 minutes are allocated for 10-15 questions. The type of questions can vary, including a selection of multiple choice questions or true/false questions. Note that questions can't be added or deleted once a user has taken a quiz.



(Figure 62, Assessment Methods)

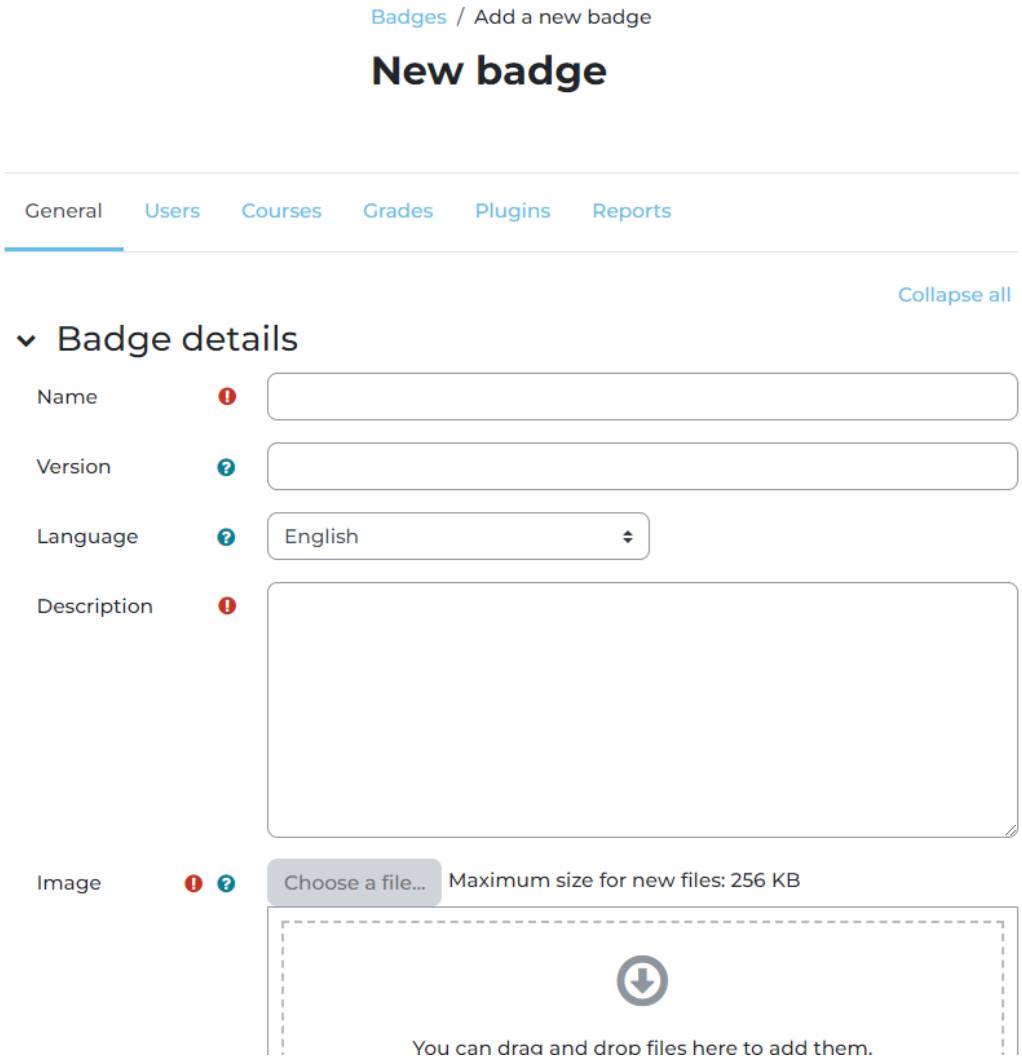
6.5 -Creating badges

ARISE uses a combination of Internal Badges and Open Badge Factory (Refer to Deliverable 4.8 for open bade platform integration) to award badges that are set up differently. To begin with, internal badges can be set up through the *Manage Badge* setting in site administration (Figure 63).



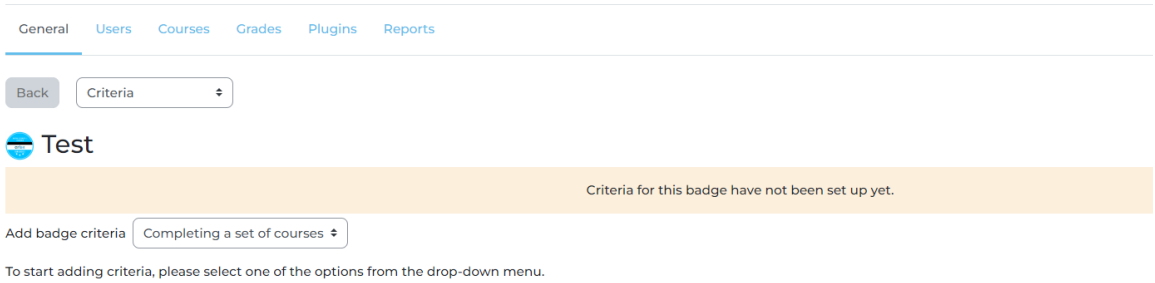
(Figure 63, Manage Badges)

New badges will require Information such as the name, description, and image (Figure 64). To use the standardised ARISE internal badge design, please get in touch with a team member for the template.



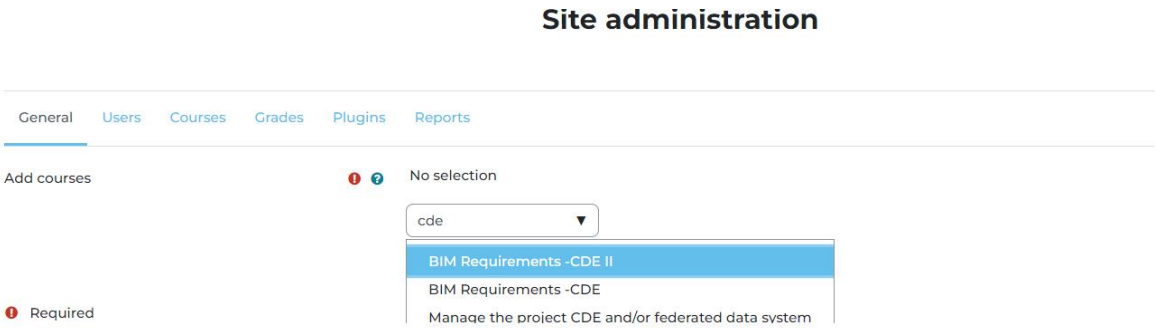
(Figure 64, Setting up a new badge)

The criteria for the awarding badges can be set up in several ways, such as course completion, profile completion, or competencies. Primarily, badges will be awarded by completion of a set of "courses" micro modules (Figure 65).



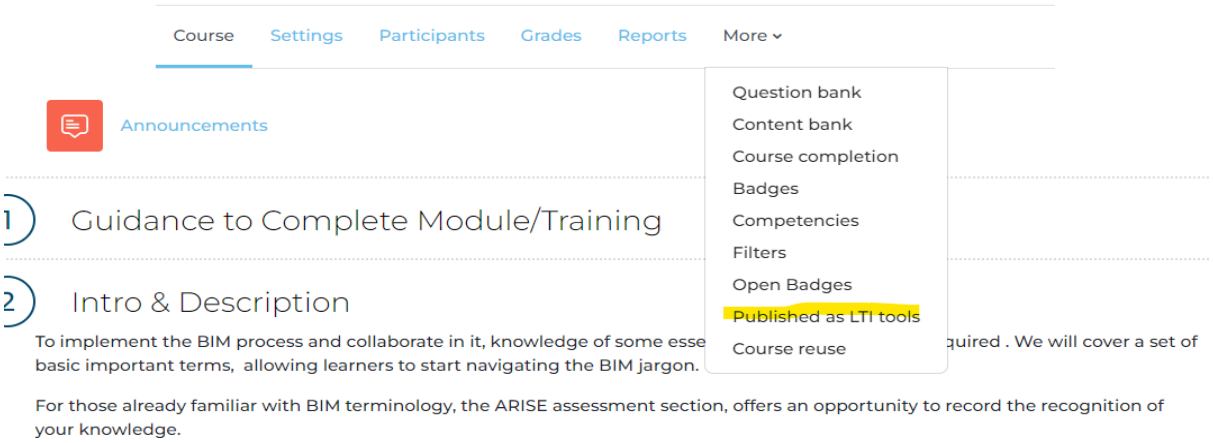
(Figure 65, Setting up a badge criteria)

Next, the modules/courses associated with the criteria can be selected. This may be per module/course or a selection of modules/courses that make up a training plan or milestone (Figure 66).



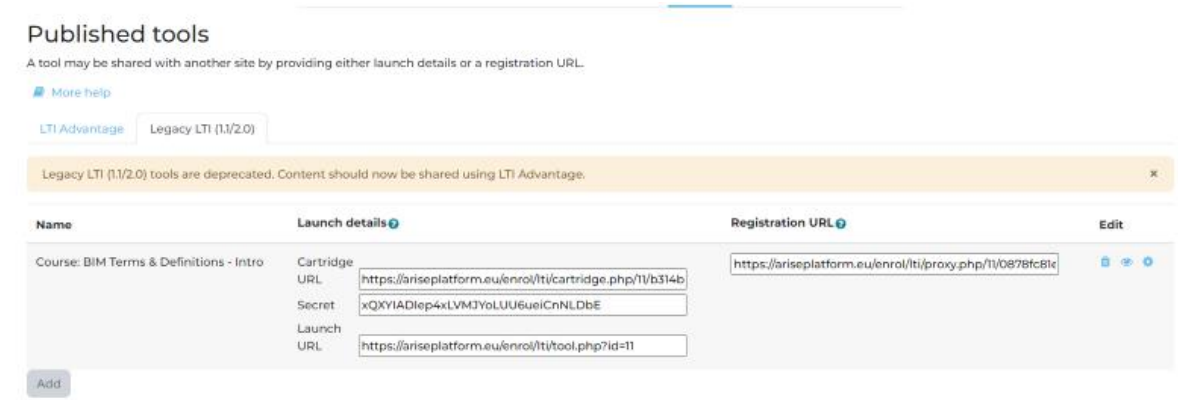
(Figure 66, Adding courses to badge criteria)

To set up the connection with the Open Badge Factory, each course will need to be published using LTI Tools. This can be found in the *More* section on the top bar above Announcements in each course (Figure 67).



(Figure 67, Published as LTI Tools Location)

Once published, the Information will need to be shared with ARISE WP4 partners IST for the Open Badge connection. They require a list of Information per Module describing the module name, link to QF, associated task & subtask and BIM specialism. Further to this, the LTI information required includes the *Cartridge URL, Secret, Launch URL, and Registration URL* (Figure 68). These can be copied from the course settings and emailed to the ARISE team to assist in setting up the open badges.



(Figure 68, LTI Information)

7. Conclusion

This handbook describes the final version of the ARISE platform, including guidelines and instructions for new users, existing users, trainees, and trainers. The platform was broken down with instructions suited for the perspectives of the two types of profile users (trainees and trainers), and it demonstrated how one navigates through the user interface while understanding all of the developed tools and features. The exemplary process described provides context from the moment of registration to the awarding of a digital badge and what this entails. The current and final version of the ARISE e-learning platform and material is built on the feedback provided throughout the trial period that has been captured in previous deliverables in WP5 and WP6.

Appendix A

Sample of List of Available Modules with indicative associated ULOs

Module Name / Specialism / Task / Sub Task	Description	ULO
Understand BIM Terms & Definitions **Specialism** - BIM Basics **Task** BIM Basics **Sub Task** Understand BIM Basics	To implement the BIM process and collaborate on it, knowledge of some essential key terms is required. Basic important terms, allowing learners to start navigating the BIM jargon, are covered. For those familiar with BIM terminology, the ARISE assessment section offers an opportunity to record the recognition of your knowledge. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of what BIM is and explain key terminology* • *Understanding of the key terms and definitions within BIM*	1 2
Understand BIM Benefits **Specialism** - BIM Basics **Task** BIM Basics **Sub Task** Understand BIM Basics	Overall, industry digitalisation, specifically the use of BIM technology and processes, can improve and aid many practices within the AEC industry. The learning materials hosted in this training are intended to provide an overview/ summary presentation of such overall benefits. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of the benefits & values of a BIM process.*	1

	• *Understanding of the context, essentials and benefits of BIM.* • *Understanding of the role of BIM in achieving improved sustainable. construction and design, and energy efficient performance.* • *Understanding of the benefits of BIM*	6 8 118
Understand BIM Dimensions **Specialism** - BIM Basics **Task** BIM Basics **Sub Task** Understand BIM Basics	To implement the BIM process, knowledge of some essential key terms becomes required. This short awareness training will help the user understand what BIM Dimensions are. How many are usually considered? More importantly, how they apply and can be integral to your workflow are discussed. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of what BIM is and explain key* • *Understanding of the key terms and definitions within BIM* • *Explain Key terms and Definitions within BIM, specifically BIM Dimensions.*	1 2 117
Understand BIM Fundamentals **Specialism** - BIM Basics **Task** BIM Basics	This short awareness training will help the user understand the context and essentials of BIM and be able to explain what BIM involves, including why/ how it encompasses all of the construction supply chain and built asset/project lifecycle, how BIM is part of a wider process of revolution in the industry. It will help the user to start to identify their role and responsibilities in the process. In addition, it introduces BIM as a powerful enabling tool to help the AEC industry reduce its waste and	

Sub Task Understand BIM Basics -	move towards a more energy-efficient output to help tackle climate change. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding what BIM is and explaining key terminology* • *Understanding of the benefits & values of a BIM process*	1
Understand BIM Maturity levels. **Specialism** - BIM Basics **Task** BIM Basics **Sub Task** Understand BIM Basics	This unit covers one of the essential concepts when trying to understand the context and essentials of BIM. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Identify the BIM Maturity Levels (also referred to as BIM Stages).*	3
BIM Tools for Energy Efficiency **Specialism** - BIM Basics **Task** BIM Basics **Sub Task** Understand	This Module provides an introduction to the use of BIM tools for energy-efficient design, construction and operation of buildings. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of the role of BIM in achieving improved sustainable construction and energy-efficient performance.*	4

BIM and Energy Efficiency	• *Understanding of the role and importance of energy efficiency optimisation, participants and collaboration by BIM* • *Understanding of the context, essentials and benefits of BIM* • *Understanding of the use of a Building Energy Model (BEM) in the construction industry* • *Understanding how BIM tools can be used for energy efficiency*	6 8 9 119
ARISE_Energy Gains-Losses-Usage-Efficiency: Key Terms **Specialism** - BIM Basics **Task** BIM Basics **Sub Task** Understand BIM and Energy Efficiency	This Module covers basic knowledge and skill sets related to energy design and optimisation using digital tools. It focuses on Key terms of Energy gains, losses, usage and efficiency in buildings. ***Learning Outcomes/Objectives*** • *Understanding of the role of BIM in achieving improved sustainable construction and energy efficient performance (Partial Completion).* • *Understanding of the role and importance of energy efficiency optimisation, participants and collaboration by BIM (Partial Completion).* • *Understanding how BIM tools can be used for energy efficiency (Partial Completion).*	4 4 119
BIM Requirements – EIR **Specialism** - BIM Application – (BIM Management)	This Module aims to describe the Exchange Information Requirements in the context of the BIM process and its relevance to the industry. **Learning Outcomes/Objectives** After completion of the course, learners will be able to:	

Task *Implement BIM strategy* **Sub Task** *Devise BIM strategy*	• Checking the key BIM Maturity Stage 2 documenation and proposing (solutions) in response. • Understanding how to identify stakeholders' needs and objectives. • Understanding how to integrate needs and objectives of stakeholders in organisational processes. • Proposing (basic solutions) a BIM implementation strategy for an organisation (partial completion).	*13* 72 73 5a
BIM Requirements - CDE **Specialism** - BIM Application – (BIM Management) **Task** *Implement BIM strategy* **Sub Task** *Devise BIM strategy*	The following Module aims to describe the Common Data Environment (CDE) in the context of the BIM process and its relevance to the industry. ***Learning Outcomes/Objectives*** • *Understanding of the key terms and definitions within BIM* • *Proposing the implementation of BIM in an organisation (Partial Completion).* • *Proposing (basic solutions) for a CDE, including arrangements for collaborative working and communication.* *Also associated with* **Specialism** - BIM Support (Project Data) **Task** -Manage Project data **Sub Task** *Devise BIM strategy*	2 5a 66a
BIM Information Management & Application	This Module seeks to understand and explain information management and the application of BIM. ***Learning Outcomes/Objectives***	

Specialism - BIM Application (BIM Management) **Task** *Implement BIM strategy* **Sub Task** *Devise BIM strategy*	After completion of the course, learners will be able to: • *Understanding of the benefits & values of a BIM process* • *Understanding BIM Project Collaboration requirements based on the Project Performance Requirements (BIM Uses), and Project Roles and Responsibilities* • *Proposing, developing and defining the Statement of Requirements (SOR) or Statement of Work (SOW) describing the BIM deliverables, essential requirements, and specifications.* • *Understanding of the impact of BIM Maturity Stage 2 requirements for project delivery.* • *Proposing (basic solutions) a BIM implementation strategy for an organisation (Partial Completion).* • *Proposing the implementation of BIM in an organisation (Partial Completion).*	1 10 11 12 5a
BIM Modelling - Title Blocks **Specialism** - BIM Application (BIM Modelling) **Task** *Create (aspect) building model* **Sub Task** *Transform (production)de*	This Module covers how to create and use template files, specifically, Create a Title block. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of the different discipline models and parametric objects used in the industry (Partial).* .	*28*

sign into building model		
ARISE_BIM Modelling UI-Hierarchy & Elements (Revit) **Specialism** - BIM Application (BIM Modelling) **Task** *Create (aspect) building model* **Sub Task** *Transform (production)design into building model*	This Module provides an understanding of how to use BIM modelling software interface (Revit version). More specifically- Hierarchies and Elements that organise the UI ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of the different discipline models and parametric objects used in the industry (Partial).* *Also associated with* ***Specialism*** *- BIM Utilisation (Capturing and Representation).* ***Task*** *- Use model information for visualisation purposes* ***Sub Task*** *- Use model information for 3D detailing.*	*28*
ARISE_BIM Modelling UI Selection (Revit) **Specialism** - BIM Application (BIM Modelling) **Task** *Create (aspect) building model* **Sub Task** *Transform*	This Module is specifically about using selection tools within the Revit platform, ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of the different discipline models and parametric objects used in the industry (Partial).* *Also associated with* ***Specialism*** *- BIM Utilisation (Capturing and Representation).* ***Task*** *- Use model information for visualisation purposes*	28

(production)design into building model	***Sub Task*** *- Use model information for 3D detailing.*	
ARISE_BIM Modelling UI Shortcuts (Revit) **Specialism** - BIM Application (BIM Modelling) **Task** *Create (aspect) building model* **Sub Task** *Transform (production)design into building model*	This Module is specifically about using keyboard shortcuts to increase productivity and efficiency within the Revit platform,. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of the different discipline models and parametric objects used in the industry (Partial).* *Also associated with* ***Specialism*** *- BIM Utilisation (Capturing and Representation).* ***Task*** *- Use model information for visualisation purposes* ***Sub Task*** *- Use model information for 3D detailing.* .	28
ARISE_BIM Modelling Views Intro(Revit) **Specialism** - BIM Application (BIM Modelling) **Task**	This Module will cover navigating and creating views within the Revit platform. ***Learning Outcomes/Objectives*** • *Understanding of the different discipline models and parametric objects used in the industry (Partial).* *Also associated with* **Specialism** - BIM Application (BIM Modelling) **Task** - *Create (aspect) building model* **Sub Task** - Create 3D visualisations and 2D plans and -views	28

Create (aspect) building model **Sub Task** *Transform (production)design into building model*	***Specialism*** *- BIM Utilisation (Capturing and Representation).* ***Task*** *- Use model information for visualisation purposes* ***Sub Task*** *- Use model information for 3D detailing.*	
ARISE_BIM Modelling UI Levels & Plans(Revit) **Specialism** - BIM Application – (BIM Modelling) **Task** *Create (aspect) building model* **Sub Task** *Transform (production)design into building model*	This Module is specifically about using Plan views and Levels and covers the dependency between both: the process of creating and editing levels creating and editing plan views. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of the different discipline models and parametric objects used in the industry (Partial).* *Also associated with* **Specialism** - BIM Application (BIM Modelling) **Task** - *Create (aspect) building model* **Sub Task** - Create 3D visualisations and 2D plans and -views ***Specialism*** *- BIM Utilisation (Capturing and Representation).* ***Task*** *- Use model information for visualisation purposes* ***Sub Task*** *- Use model information for 3D detailing.*	28
ARISE_BIM Modelling UI	This Module provides an understanding of using Elevations and Sections views: The Module will	

Elevations & Sections (Revit) **Specialism** - BIM Application – (BIM Modelling) **Task** *Create (aspect) building model* **Sub Task** *Transform (production)design into building model*	cover the process of creating and editing such views within the Revit platform. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of the different discipline models and parametric objects used in the industry (Partial).* *Also associated with* **Specialism** - BIM Application (BIM Modelling) **Task** - *Create (aspect) building model* **Sub Task** - Create 3D visualisations and 2D plans and -views ***Specialism*** *- BIM Utilisation (Capturing and Representation).* ***Task*** *- Use model information for visualisation purposes* ***Sub Task*** *- Use model information for 3D detailing.*	28
ARISE_BIM Modelling UI Visibility Control(Revit) **Specialism** - BIM Application – (BIM Modelling) **Task**	This Module is specifically about using visibility control tools and techniques within the Revit platform. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of the different discipline models and parametric objects used in the industry (Partial).* *Also associated with*	28

Create (aspect) building model **Sub Task** *Transform (production)design into building model*	**Specialism** - BIM Application (BIM Modelling) **Task** - *Create (aspect) building model* **Sub Task** - Create 3D visualisations and 2D plans and -views ***Specialism*** *- BIM Utilisation (Capturing and Representation).* ***Task*** *- Use model information for visualisation purposes* ***Sub Task*** *- Use model information for 3D detailing.*	
ARISE_BIM Modelling UI Plugins **Specialism** - BIM Application – (BIM Modelling) **Task** *Create (aspect) building model* **Sub Task** *Transform (production)design into building model*	This Module focuses on Identifying Plugins for a BIM authoring software that increases its functionalities. The Module will cover where to find installed add-ins via the UI. It will also indicate where to search for possible Add-ins. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of the different discipline models and parametric objects used in the industry (Partial).* • *Selecting the use of creation and modification tools; including the use of preloaded elements and components (Partial).* *Also associated with* ***Specialism*** *- BIM Utilisation (Capturing and Representation).* ***Task*** *- Use model information for visualisation purposes* ***Sub Task*** *- Use model information for 3D detailing.*	28 29

ARISE_BIM Modelling Walls (Revit) **Specialism** - BIM Application – (BIM Modelling) **Task** *Create (aspect) building model* **Sub Task** *Transform (production)design into building model*	This Module provides instructions on how to use modification tools, such as preloaded elements and components. More specifically- Walls within the Revit platform. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of the different discipline models and parametric objects used in the industry (Partial).* • *Selecting the use of creation and modification tools; including the use of preloaded elements and components (Partial).* *Also associated with* **Specialism** - BIM Application (BIM Modelling) **Task** - *Create (aspect) building model* **Sub Task** - Create 3D visualisations and 2D plans and -views ***Specialism*** *- BIM Utilisation (Capturing and Representation).* ***Task*** *- Use model information for visualisation purposes* ***Sub Task*** *- Use model information for 3D detailing.*	28 29
ARISE_BIM Modelling Floors (Revit) **Specialism** - BIM Application	This Module provides instructions on how to use modification tools, such as preloaded elements and components. More specifically- Floors within the Revit platform.	

– (BIM Modelling) **Task** *Create (aspect) building model* **Sub Task** *Transform (production)design into building model*	***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of the different discipline models and parametric objects used in the industry (Partial).* • *Selecting the use of creation and modification tools; including the use of preloaded elements and components (Partial).* *Also associated with* **Specialism** - BIM Application (BIM Modelling) **Task** - *Create (aspect) building model* **Sub Task** - Create 3D visualisations and 2D plans and -views ***Specialism*** *- BIM Utilisation (Capturing and Representation).* ***Task*** *- Use model information for visualisation purposes* ***Sub Task*** *- Use model information for 3D detailing.*	28 29
ARISE_BIM Modelling Doors (Revit) **Specialism** - BIM Application – (BIM Modelling) **Task** *Create (aspect) building model*	This Module provides instructions on how to use modification tools, such as preloaded elements and components. More specifically- Doors within the Revit platform. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of the different discipline models and parametric objects used in the industry (Partial).* • *Selecting the use of creation and modification tools; including the use of*	28 29

Sub Task *Transform (production)design into building model*	*preloaded elements and components (Partial).* *Also associated with* **Specialism** - BIM Application (BIM Modelling) **Task** - *Create (aspect) building model* **Sub Task** - Create 3D visualisations and 2D plans and -views ***Specialism*** *- BIM Utilisation (Capturing and Representation).* ***Task*** *- Use model information for visualisation purposes* ***Sub Task*** *- Use model information for 3D detailing.*	
ARISE_BIM Modelling Windows (Revit) **Specialism** - BIM Application – (BIM Modelling) **Task** *Create (aspect) building model* **Sub Task** *Transform (production)design into building model*	This Module provides instructions on how to use modification tools, such as preloaded elements and components. More specifically- Windows. within the Revit platform ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of the different discipline models and parametric objects used in the industry (Partial).* • *Selecting the use of creation and modification tools; including the use of preloaded elements and components (Partial).* • *Also associated with* **Specialism** - BIM Application (BIM Modelling) **Task** - *Create (aspect) building model*	28 29

	Sub Task - Create 3D visualisations and 2D plans and -views ***Specialism*** *- BIM Utilisation (Capturing and Representation).* ***Task*** *- Use model information for visualisation purposes* ***Sub Task*** *- Use model information for 3D detailing.* .	
ARISE_BIM Modelling Ceilings (Revit) **Specialism** - BIM Application – (BIM Modelling) **Task** *Create (aspect) building model* **Sub Task** *Transform (production)design into building model*	This Module provides instructions on how to use modification tools, such as preloaded elements and components. More specifically- Ceilings within the Revit platform. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of the different discipline models and parametric objects used in the industry (Partial).* • *Selecting the use of creation and modification tools; including the use of preloaded elements and components (Partial).* *Also associated with* **Specialism** - BIM Application (BIM Modelling) **Task** - *Create (aspect) building model* **Sub Task** - Create 3D visualisations and 2D plans and -views ***Specialism*** *- BIM Utilisation (Capturing and Representation).* ***Task*** *- Use model information for visualisation purposes*	28 29

	Sub Task *- Use model information for 3D detailing.*	
ARISE_BIM Modelling Views Intro (Revit) **Specialism** - BIM Application – (BIM Modelling) **Task** *Create (aspect) building model* **Sub Task** *Transform (production)design into building model*	This Module will cover navigating and creating views within the Revit platform. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of the different discipline models and parametric objects used in the industry (Partial).* • *Selecting the use of creation and modification tools; including the use of preloaded elements and components (Partial).* • *Also associated with* ***Specialism*** *- BIM Utilisation (Capturing and Representation).* ***Task*** *- Use model information for visualisation purposes* ***Sub Task*** *- Use model information for 3D detailing.*	28 29
ARISE_BIM Modelling UI Navigation (Revit) **Specialism** - BIM Application (BIM Modelling)	This Module provides an understanding of the BIM modelling software interface (Revit version). More specifically- Navigating the UI makeup. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Producing documentation to allow exchange within and between the project stages (Partial).*	32b

Task - *Create (aspect) building model* **Sub Task** - Create 3D visualisations and 2D plans and -views	*Also associated with* ***Specialism*** *- BIM Utilisation (Capturing and Representation).* ***Task*** *- Use model information for visualisation purposes* ***Sub Task*** *- Use model information for 3D detailing.*	
ARISE_BIM Modelling & interoperability - Export IF **Specialism** - BIM Application (BIM Modelling) **Task** - *Create (aspect) building model* **Sub Task** - Create 3D visualisations and 2D plans and -views	This Module covers how to export to IFC format from a BIM authoring software (Revit version). ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of what Information and documentation can be produced from models (Partial).* *Also associated with* ***Specialism*** *- BIM Utilisation (Capturing and Representation).* ***Task*** *- Use model information for visualisation purposes* ***Sub Task*** *- Use model information for 3D detailing.*	30
BIM Requirement- Software & Hardware ***Specialism*** *- BIM Support*	This Module provides an understanding of the software and hardware requirements of BIM. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of the use of digital skills and devices in construction (Partial)*	

(Manage project data). ***Task*** *Project Data* ***Sub Task*** *Link user-defined project software- and hardware*		51
ARISE_H&S in a Digital Environment Office Base ***Specialism*** *BIM Support (Manage project data).* ***Task*** *Project Data* ***Sub Task*** *Link user-defined project software- and hardware*	This Module focuses on the use of digital devices in office-based settings. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to: • *Understanding of the use of digital skills and devices in construction (Partial).*	51
ARISE_H&S in a Digital Environment Office Base ***Specialism*** - *BIM Support*	This Module focuses on the use of digital devices in site-based settings. ***Learning Outcomes/Objectives*** After completion of the course, learners will be able to:	

(Manage project data). ***Task*** *Project Data* ***Sub Task*** *Link user-defined project software- and hardware*	• *Understanding of the use of digital skills and devices in construction (Partial).*	51
ARISE_BIM 4D - Understand use of 4D BIM tools ***Specialism*** *BIM Utilisation (Simulating and Quantifying).* ***Task*** *Use model information for analysis purposes* ***Sub Task*** *Use model information for constructabilit y analysis*	This Module's learning content covers a knowledge skill set required in 4D BIM and demonstrates the use of BIM for construction time scheduling. ***Learning Outcomes/Objectives*** • *Understanding of the use of BIM for construction time scheduling and quantification tools (Partial Completion).* *Also associated with* ***Specialism*** *BIM Application (BIM Co-ordination).* ***Task*** *Organise checking of models, protocols, and contracts on BIM and tooling* ***Sub Task*** • *Organise clash control sessions* • *Check (federated) building model based on aspect or discipline models*	25
ARISE_BIM 4D - Timeliner (Navisworks)	This Module specialises in demonstrating how to link project schedules to the BIM model to create a 4D TimeLiner in Navisworks.	

Specialism *BIM Utilisation (Simulating and Quantifying).* ***Task*** *Use model information for analysis purposes* ***Sub Task*** *Use model information for constructability analysis*	***Learning Outcomes/Objectives*** • *Understanding of the use of BIM for construction time scheduling and quantification tools (Partial Completion).* *Also associated with* ***Specialism*** *BIM Application (BIM Co-ordination).* ***Task*** *Organise checking of models, protocols, and contracts on BIM and tooling* ***Sub Task*** *Check (federated) building model based on aspect or discipline models*	25
WORKSHOP CONFERENCE_ implementation of sustainable energy & Digital Skills	This "module" is intended to a support and follow-up for the Conference Event promoted by ARISE on 15th October 2024, "Artificial Intelligence, Sustainability and BIM for Design and Construction upskilling". This presentation focuses on implementation of sustainable energy & Digital Skills	
WORKSHOP CONFERENCE AI Sustainability & BIM for Design and Construction	This "module" is intended to a support and follow-up for the Conference Event promoted by ARISE on 15th October 2024, "Artificial Intelligence, Sustainability and BIM for Design and Construction upskilling". This presentation focuses on AI Sustainability & BIM for Design and Construction	
ARISE_Online Self-Assessment	An introduction module to allow you to gauge you current skills and help you choose Modules that may be useful to raise you digital skills.	

Welcome (Trainees)	This Module will showcase and allow trainees to learn: how the training programme works; how it was developed to meet their needs, in whatever role they have in the AEC industry; to understand the overall curriculum and its breakdown into micro-sized modules; how the e-platform works and how to navigate training materials hosted on it; and about our different blended methods of delivery/ teaching and assessment.	
ARISE_Resources-Software Access	This Module is to support and assist learners, regarding accessing software and resources for the training. Mostly relevant in the context of BIM Modelling Training modules. It will provide some assistance in the processes of creating accounts and accessing software, among other guidance.	

Appendix B Training Plan

Specialism	BIM Speciality	Task	Subtask	Completion
BIM Basic	BIM Basics	Understand BIM Basics	Understand BIM Fundamentals	Full
			Understand BIM Dimensions	Full
			Understand BIM Benefits	Full
			Understand BIM Terms & Definitions	Full
			Understand BIM Maturity	Full
		Understand BIM and Energy	Understand BIM and Energy Efficiency	Full
BIM Application	BIM Management	Implement BIM strategy	Devise BIM-strategy	Partial
	BIM Coordination	Organise checking of models, protocols, and contracts on BIM and tooling.	Organise clash control sessions.	Partial
			Check (federated) building model based on aspect or discipline models	Full
	BIM Modelling	Create (aspect) building model	Transform (production)design into building model	Partial
			Create 3D-visualisations and 2D-plans and -views	Partial
BIM Utilisation	Capturing and representing	Use model information for visualisation purposes	Use model information for 3D detailing.	Partial
	Simulating and Quantifying	Use model information for analysis purposes	Use model information for constructability analysis	Partial
BIM Support	Project Data Management	Manage project data	Manage the project CDE and/or federated data system	Partial