



**IoT Green Transformation for Academic Society
and Business Oriented Ecosystem in Western Balkans**

<https://iot-eco.eu/>



IoT Green Transformation for Academic Society and Business Oriented Ecosystem in Western Balkans

Project number: 101083018 - IoT-ECO - ERASMUS-EDU-2022-CBHE-STRAND-2



UNIVERSITY OF
PATRAS
ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΑΤΡΩΝ

On-line training for sharing content via IoT-ECO Hub (part of D4.2)

UPAT Team

25 June 2024

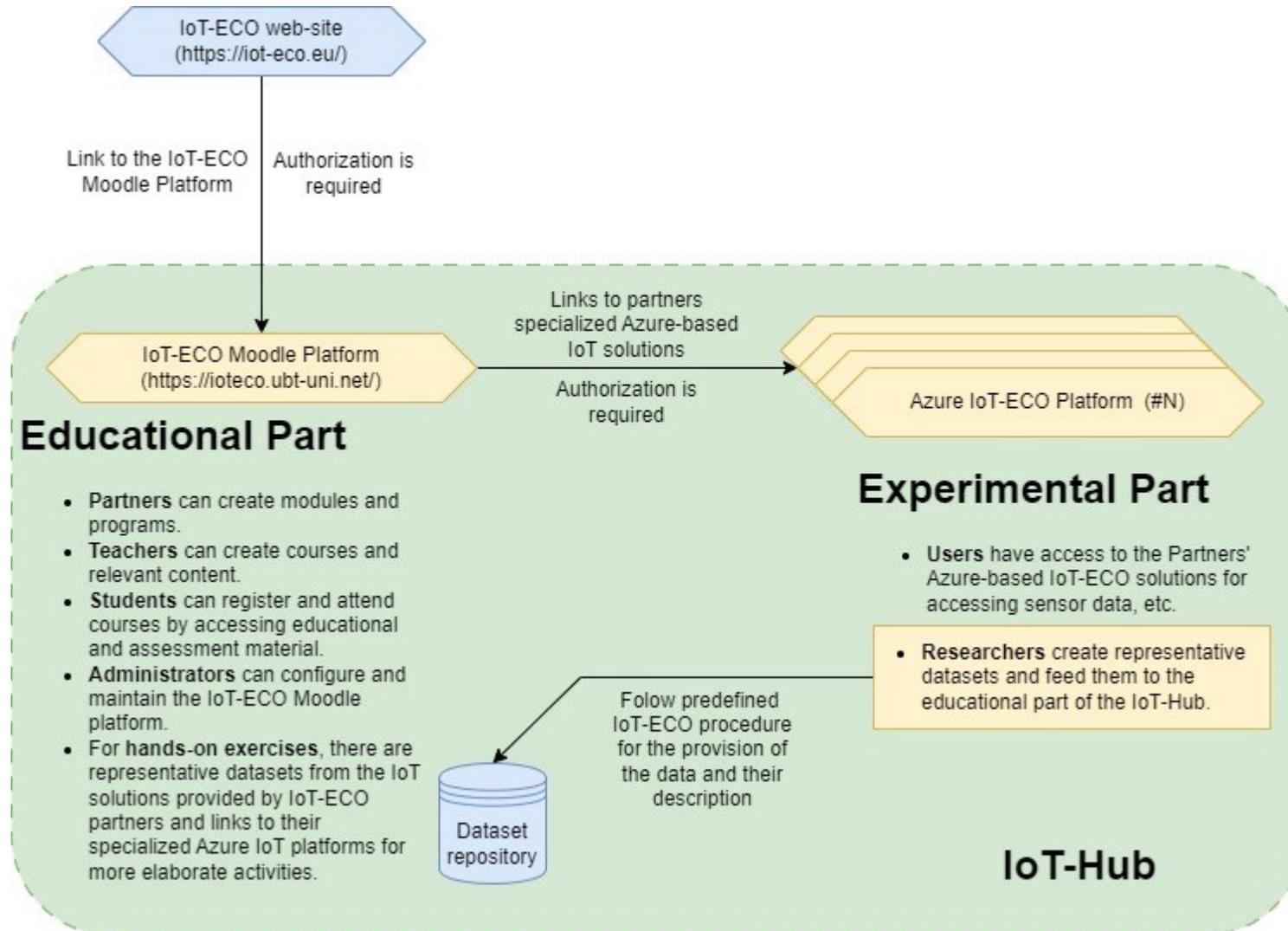
Outline

- ▶ General concept of the IoT-ECO hub
- ▶ Structure of the educational part
- ▶ Services to the students
- ▶ Examples
- ▶ Administration and guides

General concept of the IoT-ECO hub (1 / 2)

- ▶ The general concept for the hub relies on the principles of modularity to allow each partner to develop and deploy their respective courses as they see fit.
- ▶ The IoT-ECO hub consists of the educational and experimental parts.
- ▶ In the **educational part**, the users will have access to the educational content produced in the frame of the IoT-ECO project.
 - ▶ Centralized, deployed at the premises of UBT.
- ▶ In the **experimental part**, the users will have access to the Azure-based IoT solutions provided by the IoT-ECO partners.
 - ▶ Decentralized, provided via the partners that develop the digital twins
- ▶ These choices made for a sustainable IoT-ECO hub solution, remaining operational after the completion of the project

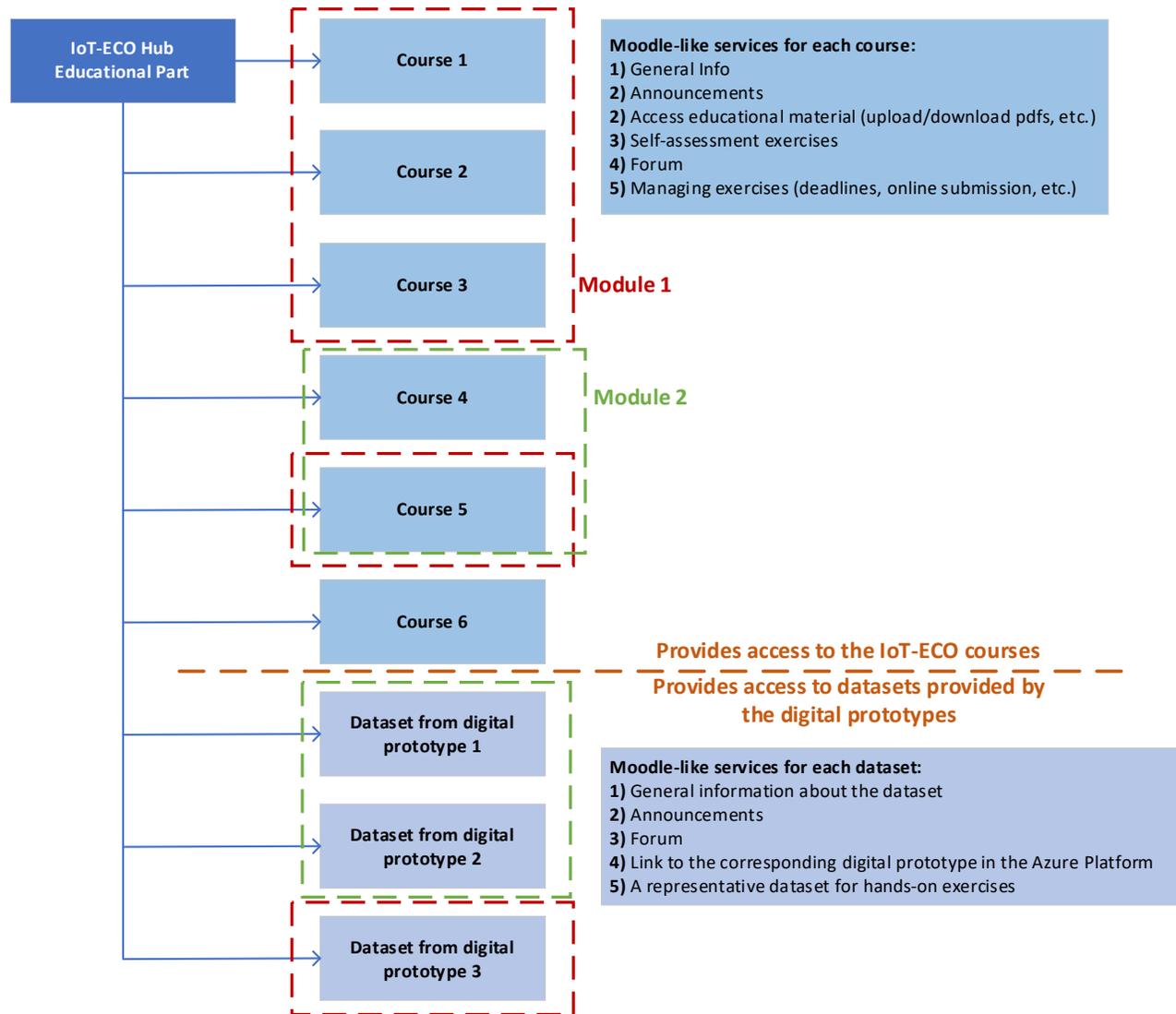
General concept of the IoT-ECO hub (2/2)



Structure of the Educational Part (1/2)

- ▶ The structure of the educational part aims at:
 - ▶ Accommodate several courses (it has been discussed that **6 courses** will be created in the frame of IoT-Hub).
 - ▶ For each digital twin developed within IoT-Hub , there will be also a **laboratory course**, providing a representative dataset as well as links to the actual digital prototypes to enable students to elaborate further in data collection and analysis depending on their interests.
 - ▶ **Access to students** will be granted by teachers in a per course/dataset fashion. This way, each teacher will have the flexibility to allow a student to attend and use a specific number of courses and datasets, thus, **defining a module**.
 - ▶ A **module** is defined as a **collection of courses/datasets** that cover a particular thematic area. For example, a module on “Signal processing over IoT” may consist of three courses on “Fundamentals of Signal Processing”, “Statistical Signal Processing” and “Distributed Estimation & Learning over an IoT network” plus any of the available datasets for supporting laboratory exercises.

Structure of the Educational Part (2/2)



Services to the students - Courses

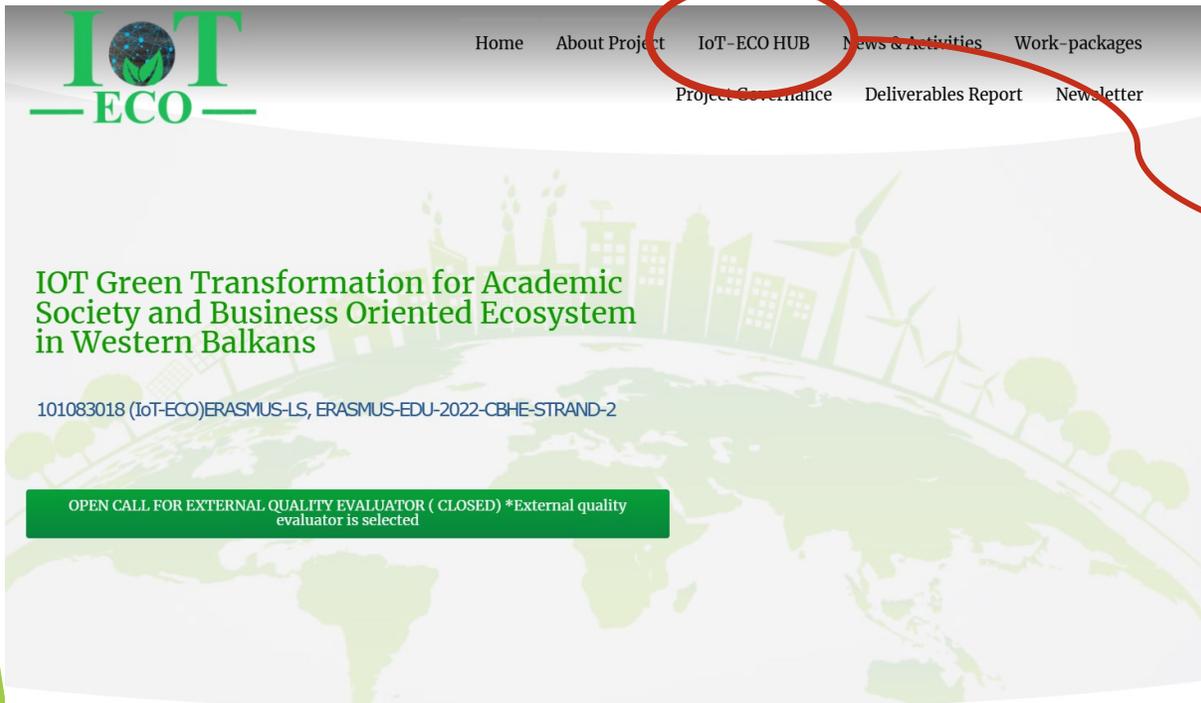
- ▶ Course outline: objectives, learning outcomes, syllabus, teaching and evaluation methods, etc.
- ▶ Course announcements.
- ▶ Educational material (e.g., pdfs, docx or relevant, ppt or relevant, etc.).
- ▶ Projects and assignments.
- ▶ Self-assessment mechanisms.
- ▶ Forum for enabling interactions among involved parties.
- ▶ A mechanism for managing exercise assignments.
- ▶ Experimental data: representative datasets

Services to the students - Lab courses

- ▶ General description of the dataset, its structure, usage-related information, etc.
- ▶ Announcements.
- ▶ Forum for enabling interactions between involved partners.
- ▶ The **link to any of the available digital prototypes** for further experimentation
 - ▶ Access to the digital prototype - being part of the Experimental Part of the IoT-ECO hub - is expected to be managed independently by corresponding partner.
- ▶ Access to representative datasets for allowing teachers devise **laboratory exercises** and students to gain experience by studying the datasets and developing data processing and analysis techniques.

Examples

Access to the IoT-ECO hub



Log in to IoT - ECO Moodle Platform

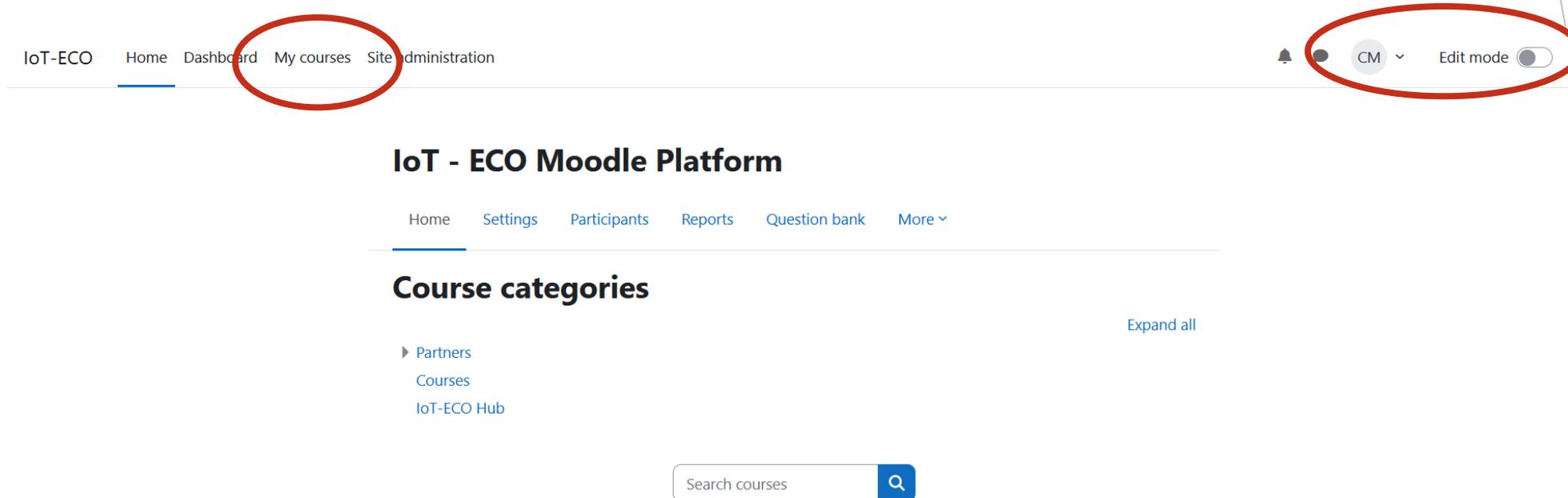
Username

Password

[Lost password?](#)

- ▶ IoT-ECO hub can be accessed via the IoT-ECO web-site
- ▶ Access to teachers can be granted via site administrators (UPAT, UBT)

Home page when logged in



- ▶ Via the home page, a user can perform various actions (profile settings, new courses, edit mode, etc.)
- ▶ “My courses” is particularly relevant in our context

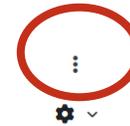
Create a new course (1/4)

IoT-ECO Home Dashboard My courses Site administration

🔔 🗨 CM Edit mode

My courses

Course overview



Create your first course

Need help getting started? Check out the [Moodle documentation](#) or take your first steps with our Quickstart guide.

[View Quickstart guide](#)

[Create course](#)

- ▶ Via the “My courses” category, one can create a new course or edit existing courses

Create a new course (2/4)

Add a new course

Expand all

> **General**

> **Description**

> **Course format**

> **Appearance**

> **Files and uploads**

> **Completion tracking**

> **Groups**

> **Tags**

Save and display

Cancel

- ▶ Several menus for filling in information

Create a new course (3/4)

Add a new course

[Expand all](#)

General

Course full name

Course short name

Course category **Partners**

Course visibility

Course start date

Course end date Enable

Course ID number

- ▶ Provide name, dates, etc.

Create a new course (4/4)

Course format

Format

Custom sections ▾

Number of sections

4 ▾

Hidden sections



Hidden sections are completely invisible ▾

Course layout



Show all sections on one page ▾

Appearance

Force language

Do not force ▾

Number of announcements



5 ▾

Show gradebook to students



Yes ▾

Show activity reports



No ▾

Show activity dates



Yes ▾

Files and uploads

Maximum upload size



Site upload limit (2 MB) ▾

- ▶ Course format for defining sections
- ▶ Show various info like “number of announcements”, etc.
- ▶ File sizes

Structure of a course (1/2)

My courses

Course overview

All Search Sort by course name Card



signal processing for iot
Courses

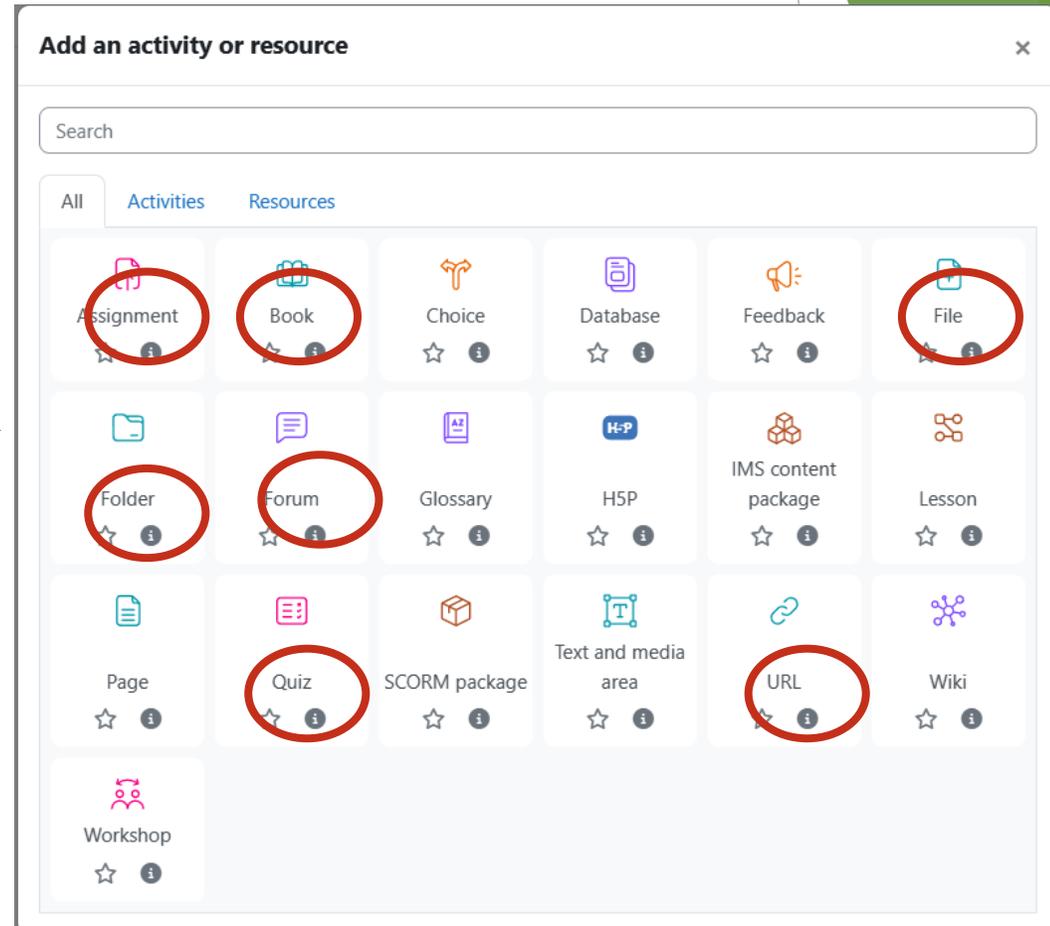
- ▶ When a course is selected, it is shown in “My courses” page

Structure of a course (2/2)

The screenshot displays a course management interface for a course titled "signal processing for iot". On the left, a sidebar menu is visible with a "General" section highlighted in blue, and four "New section" options below it. The main content area shows the course details, including a "Bulk actions" link and a navigation menu with "Course", "Settings", "Participants", "Grades", "Reports", and "More". The course content is organized into four sections: "General", "New section", "New section", and "New section". Each section has a "Collapse all" link and a "More" menu icon. The "General" section contains an "Announcements" link and a "+ Add an activity or resource" button. Each "New section" also has a "+ Add an activity or resource" button.

- ▶ A course has a general section and other four sections as determined during the creation of the course.

Adding activities



- ▶ Many choices for adding activities (forums, quizzes, files, etc.)

Adding a quiz (1/4)

signal processing for iot

[Course](#) [Settings](#) [Participants](#) [Grades](#) [Reports](#) [More](#) ▾

New Quiz

[Expand all](#)

- > **General**
- > **Timing**
- > **Grade**
- > **Layout**
- > **Question behaviour**
- > **Review options** ⚙
- > **Appearance**
- > **Safe Exam Browser**
- > **Extra restrictions on attempts**
- > **Overall feedback** ⚙
- > **Common module settings**
- > **Restrict access**

- ▶ Description
- ▶ Timing
- ▶ Layout
- ▶ Etc.

Adding a quiz (2/4)

General

Name



Description

Edit View Insert Format Tools Table Help

↶ ↷ B I

P 0 words

Display description on course page

Timing

Open the quiz



Enable 24 June 2024 15 26

Close the quiz



Enable 24 June 2024 15 26

Time limit



0 minutes Enable

When time expires



Open attempts are submitted automatically

Grade

Grade category



Uncategorised

Grade to pass



Attempts allowed

Unlimited

Grading method



Highest grade

- ▶ Provide a description
- ▶ Open and close day, etc.
- ▶ Grading
- ▶ Etc.

Adding a quiz (3/4)

SP_IoT / General / quiz

quiz

Quiz Settings Questions Results Question bank More ▾

Add question

Grading method: Highest grade

No questions have been added yet

Back to the course

Questions

Questions: 1 | This quiz is open

Repaginate Select multiple items

What is a signal [✎](#)

Page 1

1 [✎](#) [⚙](#) signal signal Always latest 1.00 [✎](#)

Choose a question type to add

Select a question type to see its description.

QUESTIONS

- Multiple choice
- True/False
- Matching
- Short answer
- Numerical
- Essay
- Calculated
- Calculated multichoice
- Calculated simple
- Drag and drop into text
- Drag and drop markers

Add **Cancel**

- ▶ Add questions
- ▶ Several options concerning the format (e.g., multiple choices)

Adding a quiz (4/4)

SP_IoT / General / quiz / Preview

QUIZ
quiz

Quiz Settings Questions Results Question bank More ▾

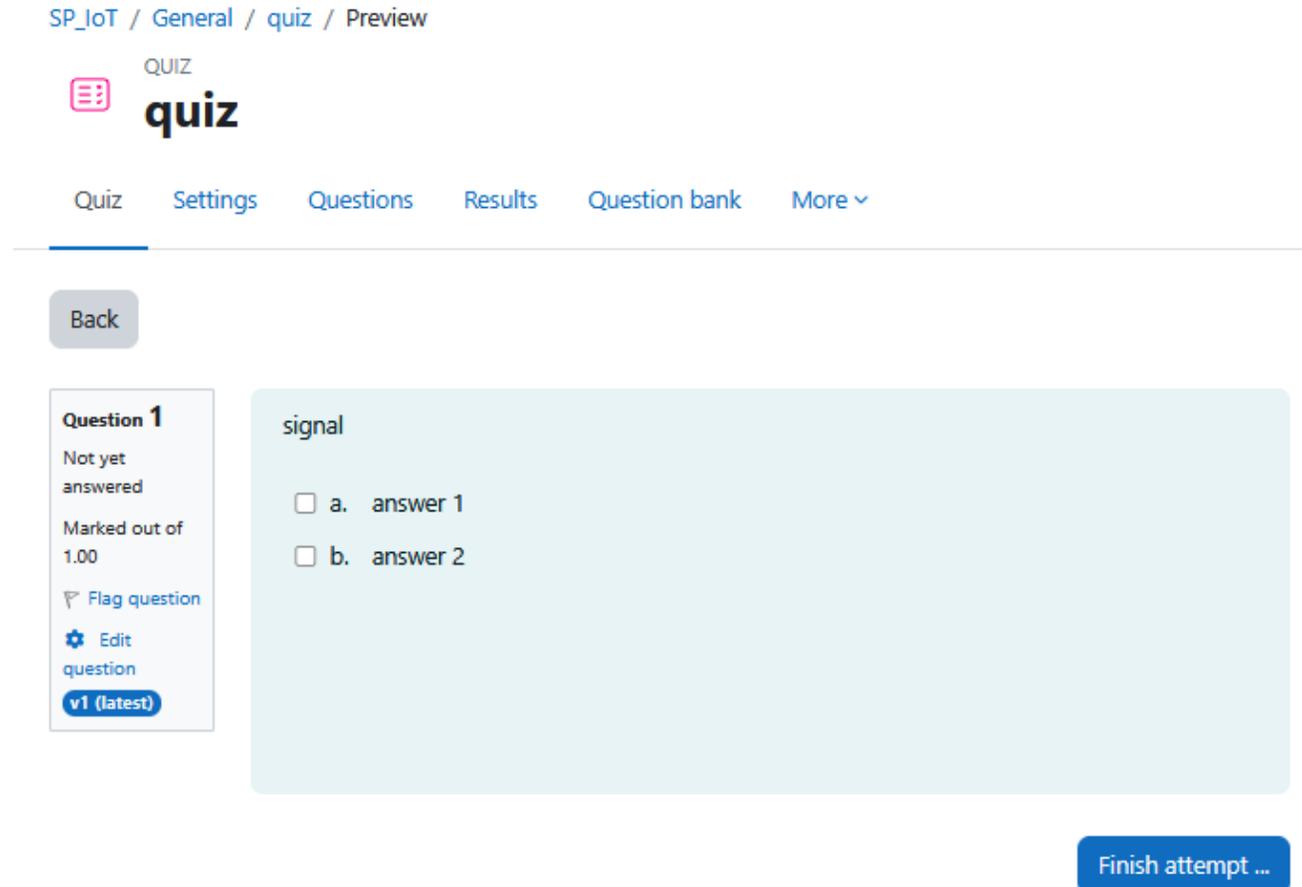
Back

Question 1
Not yet answered
Marked out of 1.00
Flag question
Edit question
v1 (latest)

signal

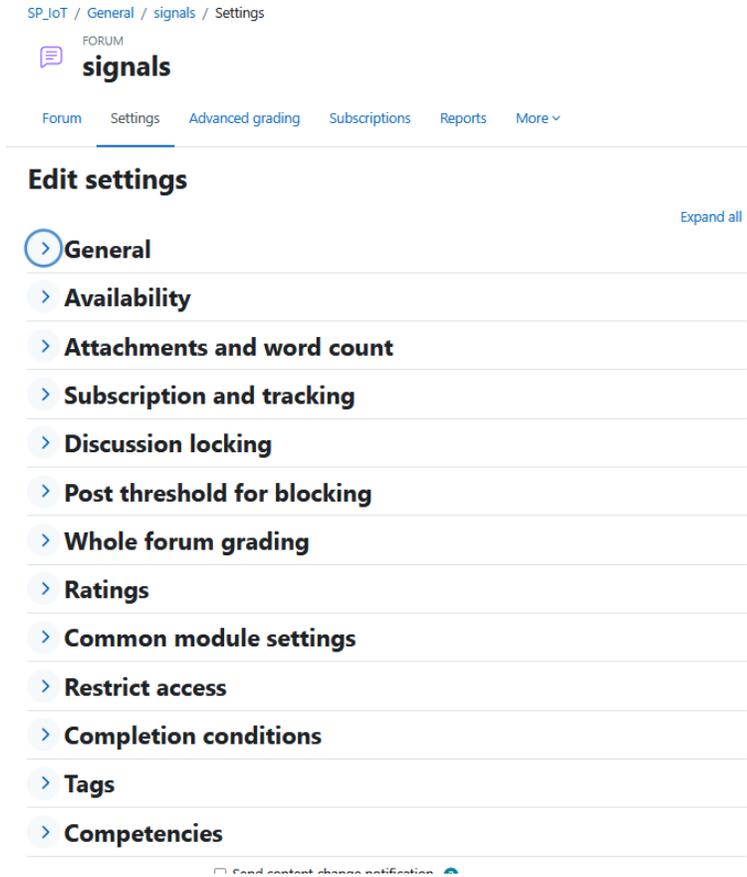
a. answer 1
 b. answer 2

Finish attempt ...

The screenshot shows a web interface for a quiz. At the top, there is a breadcrumb trail: "SP_IoT / General / quiz / Preview". Below this is a header section with a pink icon of a list and the word "QUIZ" in small letters, followed by "quiz" in large bold letters. A navigation menu contains "Quiz", "Settings", "Questions", "Results", "Question bank", and "More ▾". A "Back" button is located below the menu. The main content area is split into two columns. The left column contains a sidebar for "Question 1" with the status "Not yet answered", a score of "Marked out of 1.00", and options to "Flag question", "Edit question", and "v1 (latest)". The right column shows the question text "signal" and two multiple-choice options: "a. answer 1" and "b. answer 2", each with an unchecked checkbox. At the bottom right of the question area is a blue button labeled "Finish attempt ...".

- ▶ A preview of an example when a “multiple-choice” question is defined

Adding a forum (1/2)



The screenshot shows the Moodle interface for editing forum settings. At the top, the breadcrumb path is 'SP_IOT / General / signals / Settings'. Below this is the forum title 'signals' with a 'FORUM' icon. A navigation menu includes 'Forum', 'Settings' (which is underlined), 'Advanced grading', 'Subscriptions', 'Reports', and 'More >'. The main section is titled 'Edit settings' with an 'Expand all' link. A list of settings categories is shown, each with a right-pointing chevron icon: 'General', 'Availability', 'Attachments and word count', 'Subscription and tracking', 'Discussion locking', 'Post threshold for blocking', 'Whole forum grading', 'Ratings', 'Common module settings', 'Restrict access', 'Completion conditions', 'Tags', and 'Competencies'. At the bottom of the list, there is a checkbox for 'Send content change notification' which is currently unchecked.

- ▶ As usual several configuration menus for setting up the forum according to the professor's needs

Adding a forum (2/2)

The screenshot displays a forum page for 'signals' under the 'General' category. A green notification banner at the top states: 'Your post was successfully added. You have 30 mins to edit it if you want to make any changes. You will be notified of new posts in 'analog signals' in the forum 'signals'.' Below the notification is a search bar with the text 'Search forums', a magnifying glass icon, and a blue 'Add discussion topic' button. To the right is a 'Subscribe to forum' button. The main content area shows a table of discussion topics with columns for 'Discussion', 'Started by', 'Last post', 'Replies', and 'Subscribe'. One topic is listed: 'analog signals', started by 'Christos Mavrok...' on '24 June 2024', with 0 replies and a toggle switch for subscription.

SP_IoT / General / signals

FORUM
signals

Forum Settings Advanced grading Subscriptions Reports More ▾

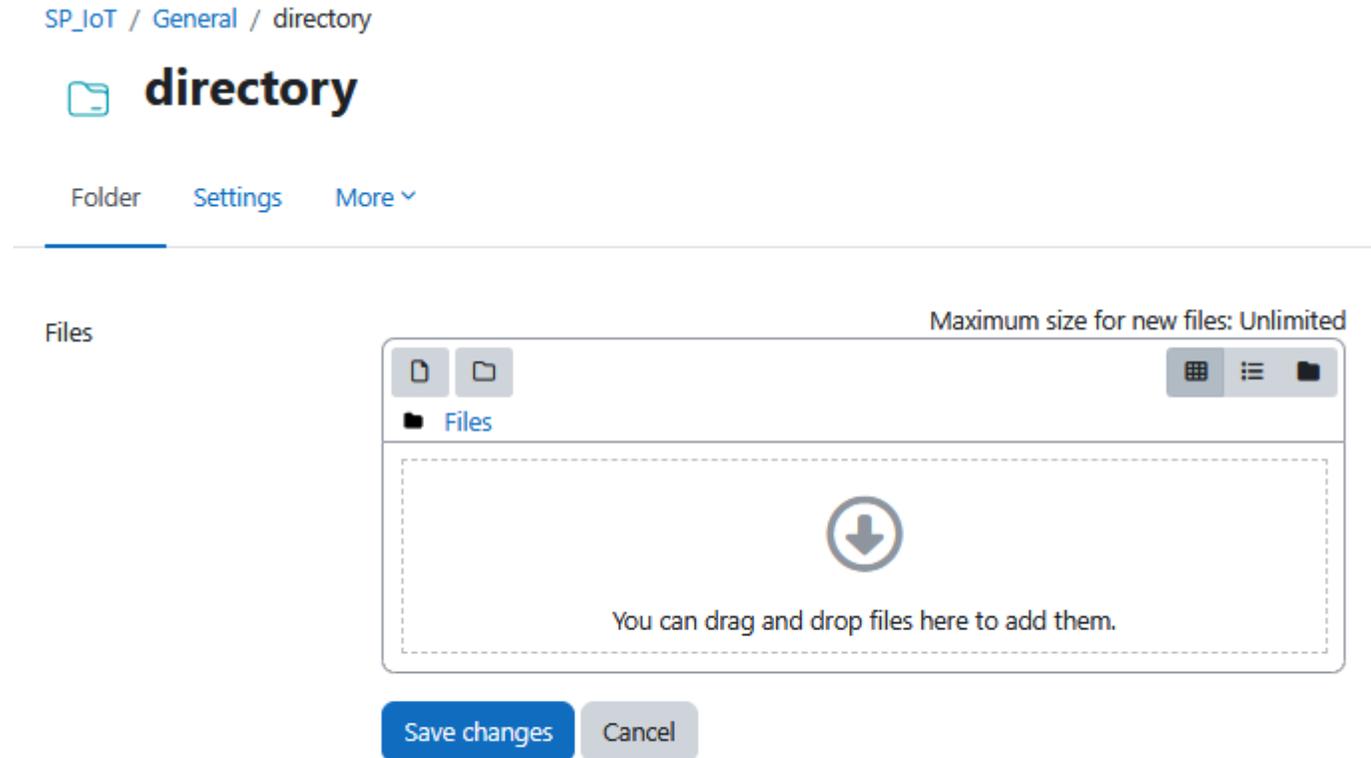
Your post was successfully added.
You have 30 mins to edit it if you want to make any changes.
You will be notified of new posts in 'analog signals' in the forum 'signals'.

Search forums

Discussion	Started by	Last post ↓	Replies	Subscribe
☆ analog signals	Christos Mavrok... 24 June 2024	Christos Mavrok... 24 June 2024	0	<input checked="" type="checkbox"/>

- ▶ Add a topic in the forum and start discussing

Create and use a folder



- ▶ Create a folder to store files with simple “drag and drop”

Administration and guides

- ▶ UPAT (along with UBT) will be the site administrator
- ▶ The IoT-ECO hub supports several user roles:
 - ▶ Managers (administrative privileges)
 - ▶ Content creators (create courses and can manage them)
 - ▶ This will be used for the time being
 - ▶ Teachers (manage courses)
- ▶ Students need to have an account to the platform
 - ▶ Self-registration may give rise to potential security risks (e.g., spammers)
 - ▶ The teachers define whether enrollment to a course can be done by them or by the students themselves
- ▶ More detailed information can be found, e.g., [here](#) (i.e., @moodle.org)

Thanks!!!