

Open edX for Helmholtz

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HZDR / HIFIS

TEACH V
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- Introduction
- About Open edX
- LMS-Interface
- CMS-Interface
- Administration desk
- Plugin concept and basic functionalities
- Launching walkthrough
- Documentation and sources
- Project timeline and tests invitation

Introduction

- Integral part of CMS,
- A little obsolete UI,
- Learning materials as:
 - web objects,
 - SCORM-modules.
- Integral qualification tests.

**Not recommended anymore,
however still supported.**

Slide 12 of 14

Movement and breaks

- keep moving and regularly interrupt sitting in the same position: Dynamic sitting (alternating between front, middle and rear sitting positions).
- unlocking the seat back of the office chair
- standing up regularly or working in a standing position
- consciously plan and use short breaks for stretching and stretching
- relieving eye strain
- you can prevent eye fatigue by regularly looking out into the distance.

Ideal division:

- 60 % sitting= ca. 5 hours
- 30 % standing= ca. 2½ hours
- 10 % going= ca. 50 minutes

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this user Spyra, Norbert (FWCA)
[report error](#)



Introduction

Latest E-Learning tool at HZDR: *ILIAS*

- **Open source PHP-based** platform,
- **Extendable** with plugins,
- Learning materials as:
 - **HTML,**
 - **SCORM,**
 - **ILIAS.**
- Oriented mostly to user-management and self-learning.
- Active documentation, support, and community.



Introduction

E-learning tool for HIFIS - criteria

- **Extendable open source** tool,
- Learning materials as:
 - **SCORM**,
 - Further **universal formats**.
- Focus:
 - **Programming**,
 - **Data science**,
 - **Interactivity**,
 - **Scalability**,
 - **Blended-learning methods**.



About Open edX

About Open edX

Technical aspect

- **Open source Python-based** tool,
- **Extendable** with 3rd-party software,
- REST API,
- Compatible with numerous technologies (e.g. storage systems),
- Easily **scalable (MOOS-applications)**,
- Active support, documentation, community,
- Multiple users around the world,
- Many advantages from the HIFIS/HIDA/Helmholtz standpoint.



About Open edX

Assignment around the world – a few examples

- Massachusetts Institute of Technology,
- Harvard University,
- Stanford University,
- XuetangX – initiated by Tsinghua University,
- France université numérique - national French MOOC platform,
- Zurich University of Applied Sciences,
- Turkish Tourism Promotion and Development Agency,
- Charles III University of Madrid,
- And many others.

About Open edX Sandbox

Provider	Link(s)	Credentials	Comment
EdX	https://sandbox.openedx.org/	Requires registration	Official sandbox
Edly	https://sandbox.openedx.edly.io/	Login: <i>admin</i> Password: <i>admin</i> E-mail: <i>admin@overhang.io</i> Login: <i>student</i> Password: <i>student</i> E-mail: <i>student@overhang.io</i>	Restarted daily at 9:00 a.m. CEST
HZDR HIFIS	https://apps.learn-test.helmholtz.cloud/	Reachable via Helmholtz AAI ^[1]	LMS
HZDR HIFIS ^[1]	https://studio.learn-test.helmholtz.cloud	Reachable via Helmholtz AAI ^[1]	CMS

About Open edX

Availability of the HIFIS-sandbox

[1] - As per 12.09.2025, HIFIS E-Learning Platform's test instance is set up to be accessible without restrictions only temporarily! Access to the studio requires manual confirmation from administrators.

As a production instance appears, it is about to be announced among the **stakeholders**. Its adress has been selected in a survey:

learn.helmholtz.cloud/

studio.learn.helmholtz.cloud/

Feel free to register and log in. Contact n.spyra@hzdr.de for educator rights.

LMS-Interface

- 1) How does the UI look like?
- 2) How can I sign up for a course?
- 3) What details are visible?
- 4) How does the course structure look like?

CMS-Interface

- 1) What does the tutor/superuser see?
- 2) How can I create new course?
- 3) What structure do the courses have?
- 4) How can I add e.g. SCORM-Module into the course?

Administration desk

1) Accessible via studio for superusers (administrators) only.

Plugin concept and basic functionalities

Plugin concept and basic functionalities

Basic functionalities: integrated editor

- Integrated course editor allows creation of learning materials in the Open edX environment,
- Courses are exportable and thus also importable,
- Multiple universal formats are supported (SCORM, cmi5, LTI, HTML),
- Many ways to customize the interface and page elements,
- More about the editor in the section about CMS – live demo.

Plugin concept and basic functionalities

Basic functionalities: assessment methods

Single select problem



Single select problem

0 points possible (ungraded)

Who commanded the Austrian troops in the battle of Königgratz (1866)?

☐ Helmuth von Moltke

☐ Otto von Bismarck

☐ Crownprinz Albert of Saxony

☐ Manfred von Richthofen

? Hint (1 of 3):

Manfred von Richthofen was born many years after this battle.

[Next Hint](#)

[Hint](#)

[Show answer](#)

[Submit](#)

Länder-Herrscher



Länder-Herrscher

9/9 point (ungraded)

Keyboard Help

Bitte die Herrscher den von ihnen regierten Staaten zuordnen.

Ludwig XIV.

Albert
Friedrich August III
Königreich Sachsen

Franz I.
Kaisertum Österreich

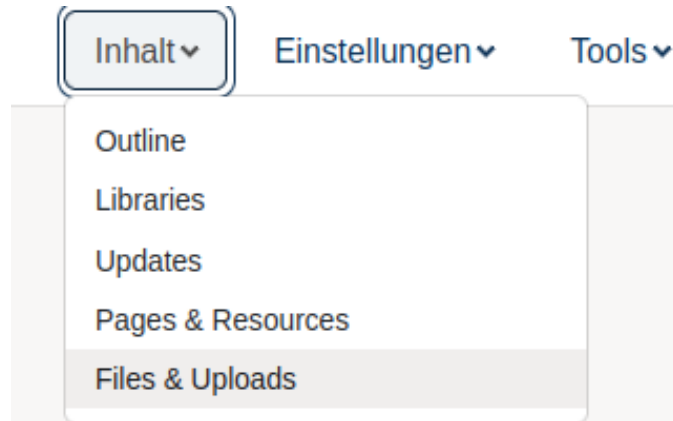
[Reset](#)

Feedback

i Klasse!

Plugin concept and basic functionalities

Basic functionalities: attachments and object banks (libraries)













Files

Search file name

Sort and filter Actions + Add files

Showing 50 of 126

<input type="checkbox"/>	File name	File size	Type	Active	Access	
<input type="checkbox"/>	 select_library.png	51.45 KB	image	✓		...
<input type="checkbox"/>	 sahara_desert_pexels.jpeg	261.76 KB	image	✓		...
<input type="checkbox"/>	 images_logic_gate_image.png	14.80 KB	image	✓		...
<input type="checkbox"/>	 Library Content graphic-100.png	93.86 KB	image	✓		...
<input type="checkbox"/>	 prism.css	4.18 KB	code			...

Plugin concept and basic functionalities

Basic functionalities: learn-sequence control

- Course A
 - Section(s)
 - Subsection(s)
 - Unit(s)
- Course B with prerequisite Course A
 - Section(s)
 - Subsection(s)
 - Unit(s)

Prerequisite course

None

Course that students must complete before beginning this course

Plugin concept and basic functionalities

Basic functionalities: blended learning methods – video calls

Configure Live

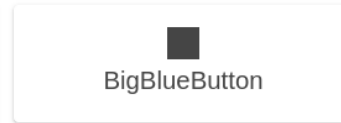
Live **zugelassen**



Schedule meetings and conduct live course sessions with learners.

Learn more about live [↗](#)

Select a video conferencing tool



This configuration will require sharing usernames and emails of learners and the course team with Zoom. To access the LTI configuration for Zoom, please request your edX project coordinator to get PII sharing enabled for this course.

Abbrechen

Speichern

Educators can create a variety of assessment methods with preferable criteria.


Examples:

- Homework,
- Lab,
- Midterm exams,
- Final tests,
- ...and so on

Plugin concept and basic functionalities

Basic functionalities: blended learning methods – assessment

There are various advanced evaluation techniques available:

 **Advanced problems**

<input checked="" type="radio"/> Blank problem	
<input type="radio"/> Circuit schematic builder	Not supported
<input type="radio"/> Custom JavaScript display and grading	
<input type="radio"/> Custom Python-evaluated input	Provisional
<input type="radio"/> Image mapped input	Not supported
<input type="radio"/> Math expression input	
<input type="radio"/> Problem with adaptive hint	Not supported

[Learn more about advanced problem types](#) 

Plugin concept and basic functionalities

Basic functionalities: blended learning methods – miscellaneous

- Courses can be hosted as events,
- Course enrollment and dates are settable and manageable,
- Communication with students succeeds via e-mails and announcements,
- Forum can be attached to each course,
- Attendees can be organised in **cohorts** to face particular tasks,
- There are many asynchronous assessment and learning tools available,
- Progress measurement allows visible advancement tracking,
- ...and many, many more.

Plugin concept and basic functionalities

Plugins

The instance is just kind of frame, which is extendable with **plugins**.


Plugins are stored in repositories. There are **official**, **community** and **commercial** plugins. **Internal development** is also possible.




Desired plugin combinations are adjustable both **global** and **per each course separately**.

Plugin concept and basic functionalities

Exemplary plugins: Indigo (theme)

 Kursübersicht

Hilfe  adm ▾

Viewing 1 course

Introduction 1

MEHR ERFAHREN

HZDR
1

Introduction

Startet: Jan 1, 2030

Suche nach einem Kurs 

Suche filtern

language

en 1

modes

audit 1

org

HZDR 1

Über Blog Kontakt Spende



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[Nutzungsbedingungen & Verhaltenskodex](#) - [Datenschutzbestimmungen](#) - [Belegen Sie kostenlose online Kurse auf edX.org](#)


<http://local.openedx.io/courses/course-v1:HZDR+1+1/about>




Plugin concept and basic functionalities


Exemplary plugins: Indigo (theme)


 Kurse Discover New

 spyra09 ▾

 View as: [Einreichen](#)


Meine Kurse

 Refine



Looking for a new challenge?
Explore our courses to add them to your dashboard.

[Kursangebot erkunden](#)



Looking for a new challenge?
[Find a course →](#)

Plugin concept and basic functionalities

Exemplatory plugins: Jupyter (installation example)

Add advanced component ×

- ☒ Scorm module
- ☐ Google Calendar
- ☐ Google Document
- ☐ LTI Consumer
- ☐ Poll
- ☐ Content Experiment
- ☐ Survey
- ☐ Word cloud

Cancel

Select

Add advanced component ×

- ☐ Scorm module
- ☒ Jupyter notebook
- ☐ Google Calendar
- ☐ Google Document
- ☐ LTI Consumer
- ☐ Poll
- ☐ Content Experiment
- ☐ Survey
- ☐ Word cloud

Cancel

Select

(tutor-venv) `openedx@ubuntu2204:~$` tutor plugins install jupyter

...and a few more steps apart from that

Plugin concept and basic functionalities

Exemplatory plugins: Jupyter (applying plugin locally in the course)

Optional modules might be activated locally (in settings), as they're needed.

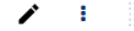
Advanced module list ⓘ

```
[  
  "scorm",  
  "jupyter"  
]
```

Plugin concept and basic functionalities

Exemplary plugins: Jupyter (element on development instance)

Jupyter notebook



JUPYTER NOTEBOOK (EXTERNAL RESOURCE)

The screenshot displays the Jupyter Notebook interface. On the left is a sidebar with a file browser showing a directory structure with a file named 'Example.ipynb' listed. The main area shows a code cell for 'Example.ipynb' using the 'Python 3 (ipykernel)' environment. The code defines a function 'greet_user' with a type hint and a docstring, then calls it with the argument 'Cinderella'. The output of the cell is 'Hallo, Cinderella' and the return value 'True'.

```
[11]: def greet_user(first_name: str = "User") -> bool:
      """
      :param first_name: the first name of the user to greet
      :type first_name: str

      :return: bool
      """

      if isinstance(first_name, str):
          print("Hallo, {}".format(first_name))
          return True
      raise TypeError("Parameter type was expected to be str. "
                      "Received {} instead!".format(type(first_name)))
      return False

      greet_user("Cinderella")

      Hallo, Cinderella

      [11]: True
```


Launching walkthrough

Launching walkthrough Installation with Tutor

Please refer to attachment with a prefix *002*.

The instruction contains:

- Sequence of steps to start a local instance up,
- Most useful commands,
- References to important configuration files,
- References to documentation.



Documentation and sources

Documentation and sources

Official documentation

1) Open edX Documentation:

<https://docs.openedx.org/en/latest/>

2) Community forum:

<https://discuss.openedx.org/>

3) Tutor (edly distribution):

<https://docs.tutor.edly.io/>

4) Open edX YouTube channel (conferences, tutorials, updates):

<https://www.youtube.com/@OpenedX>

1) **Staging (test) instance:**

<https://learn-test.helmholtz.cloud/>

2) **Production instance (...is about to be accessible via):**

<https://learn.helmholtz.cloud/>

<https://studio.learn.helmholtz.cloud/>

3) Official sandbox (requires registration):

<https://sandbox.openedx.org/>

4) Edly sandbox (restarted daily, credentials as follows):

<https://sandbox.openedx.edly.io/>

login: *admin* password: *admin* e-mail: *admin@overhang.io*

login: *student* password: *student* e-mail: *student@overhang.io*

1) **Build a course :**

https://docs.openedx.org/en/latest/educators/quickstarts/build_a_course.html

2) **Educators guide:**

<https://docs.openedx.org/en/latest/educators/index.html>

3) SCORM Overview:

https://docs.openedx.org/en/latest/educators/references/course_development/exercise_tools/SCORM_overview.html

4) Jupyter (just a repository, nothing helpful for educators, but just FYI):

<https://github.com/overhangio/tutor-jupyter>

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