KIIC

International seminar "Developing an inclusive educational environment based on a student-centred approach in emergencies"

SMART online information and diagnostic platform for teachers and students

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SMART PL

Co-funded by the Erasmus+ Programme of the European Union

Content

1   SMART-PL platform

2   Principle of the project

3   Content

4   Assessments and tests
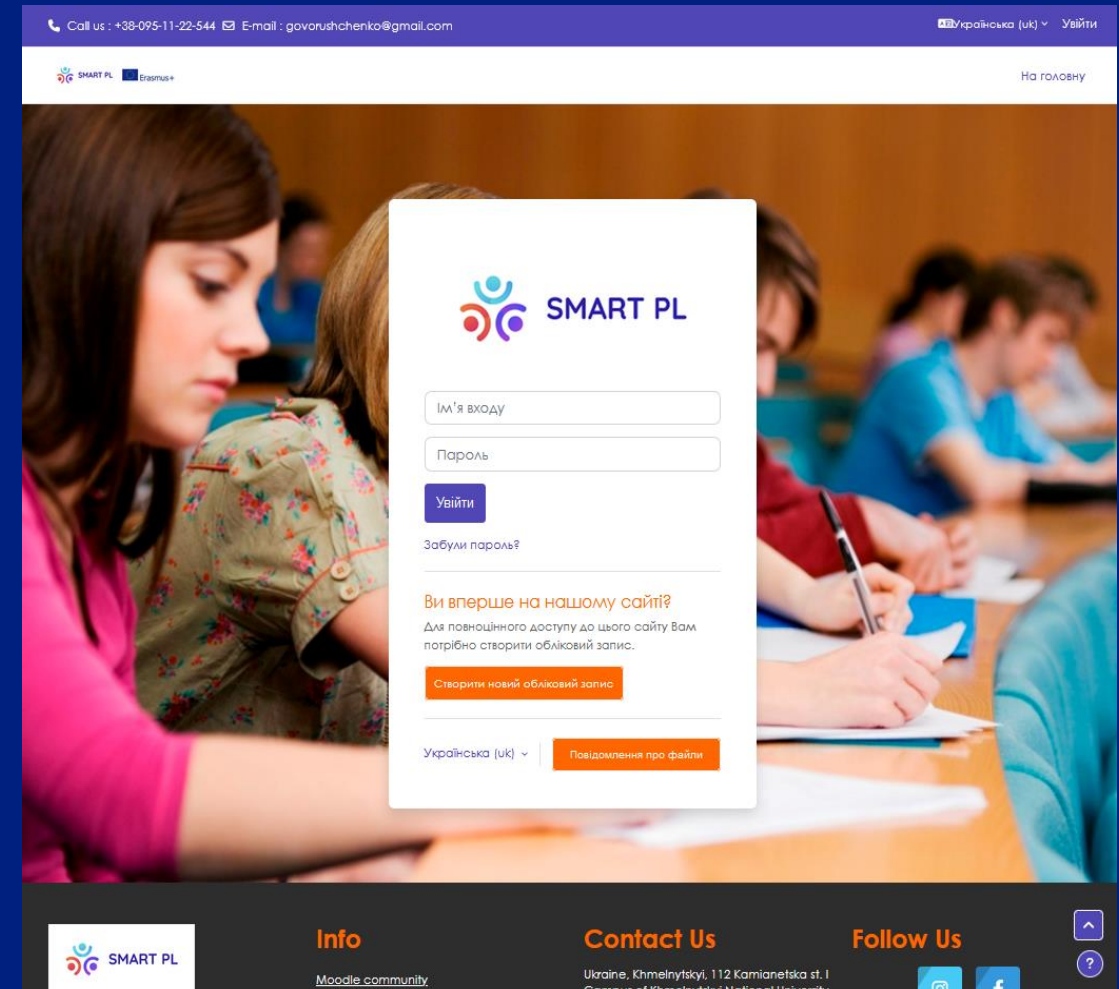
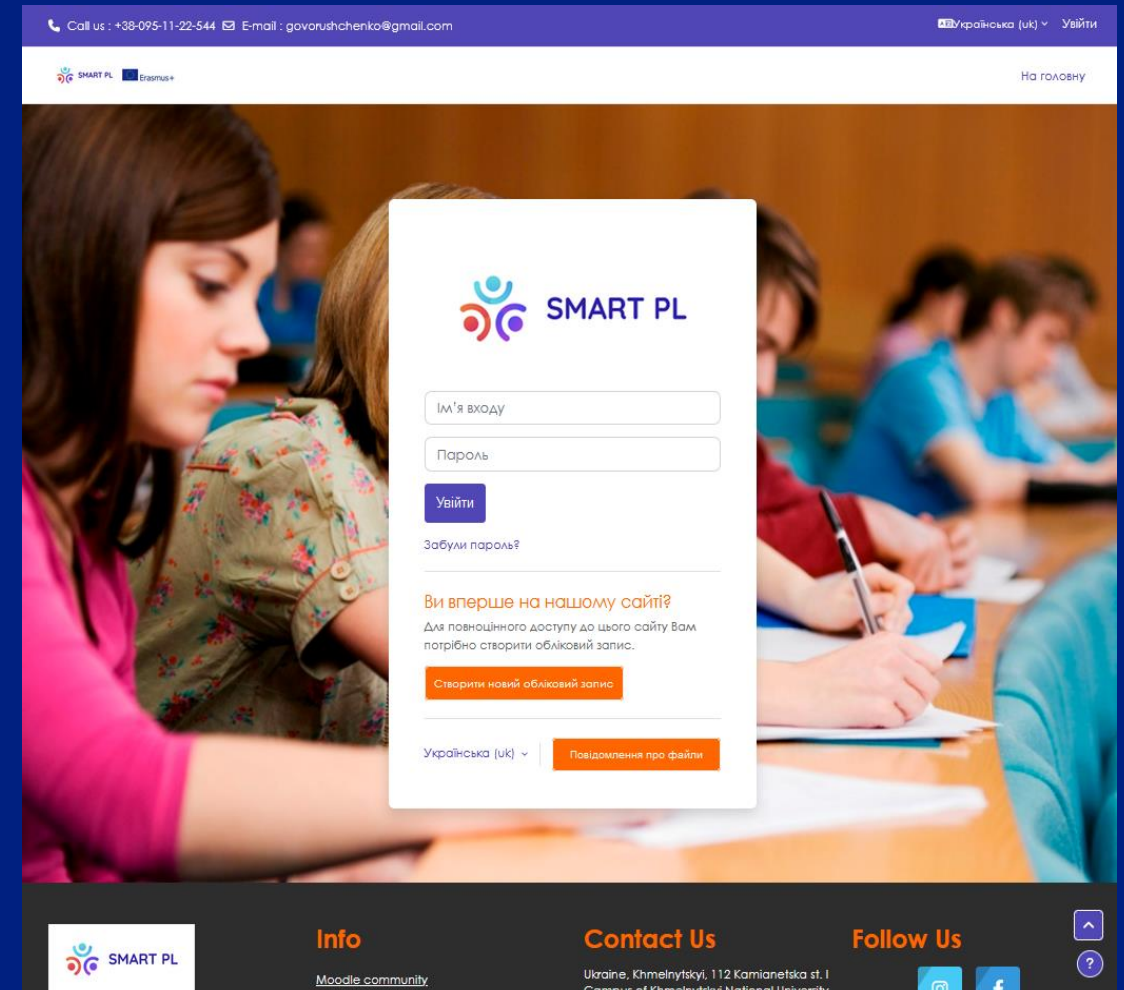SMART PL

SMART-PL platform

SMART-PL is a 3-year project, focused on introducing a model of personalised learning, based on the virtual learning environment of Intellectual Tutoring "Learning with No Limits".

SMART-PL objectives

❑ Enhance students' motivation to learning through applying the by-the-learner approach and create conditions to meet students' individual needs associated with differentiation and personalization of academic trajectories.

❑ Increase transparency and comprehensibility of education and assessment for students (including the results of non-formal education), reducing students' anxiety as for their own professional expertise and forming their confidence to achieve efficient results.

❑ Create extra opportunities to get a higher education for people with disabilities and specific academic needs through inclusive education and the implemented model of personalized learning and hybrid technologies.

SMART-PL objectives

❑ Improve educational programs of universities by updating the process of formation of competencies and the distribution of program results of student learning between educational components; to improve the quality of teaching materials.

❑ Facilitate students' mobility, including in virtual mode, on a university/country scale, inter-university/country levels, between academic sectors and forms of education (formal/informal/correspondence) by acknowledging and swapping grades/credits.

❑ Ensure feedback on students', teachers and administration's efficiency.

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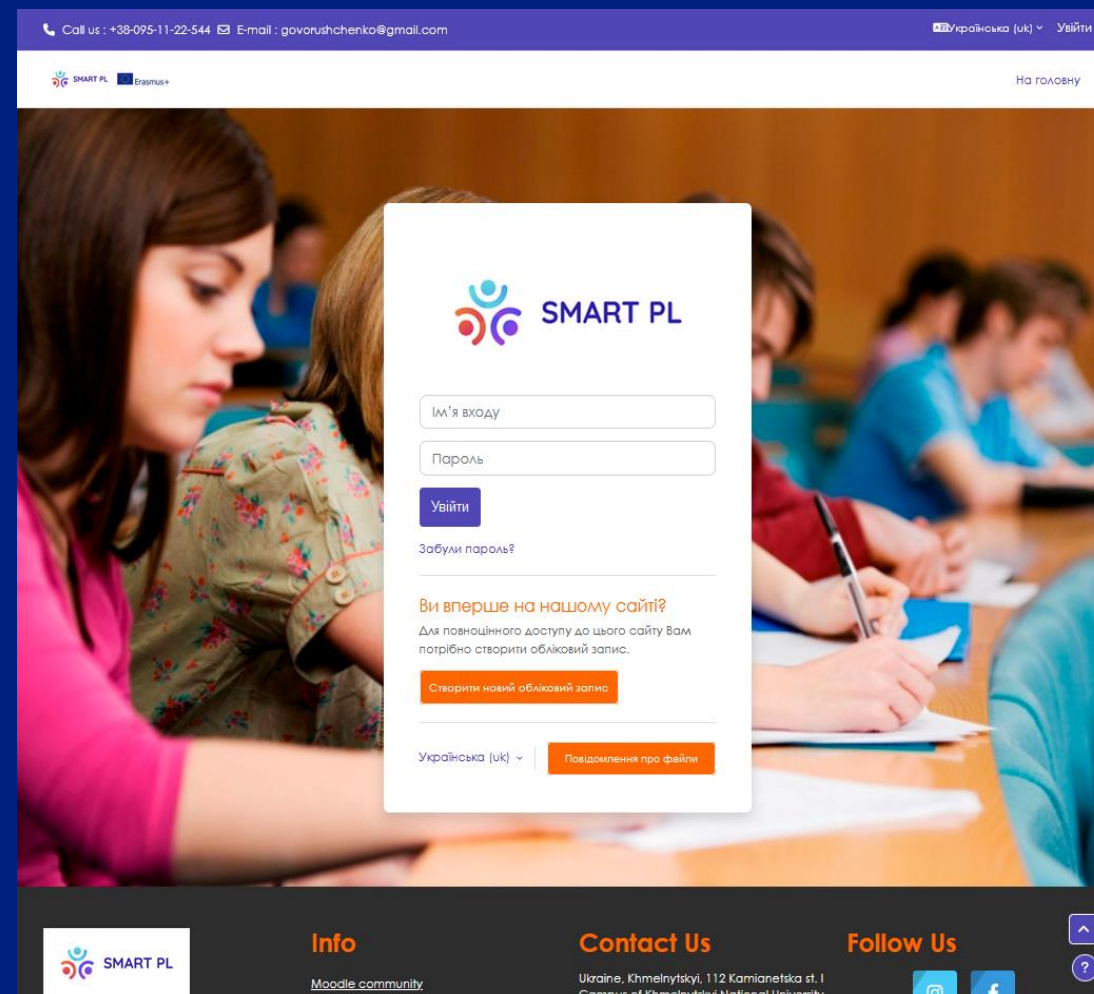
SMART PL

SMART-PL platform

Intellectual tutoring is a set of learning tools:

❑ **SMART online platform** for virtual personalised learning and formative student assessment;

❑ **co-working centre** with equipment for organising hybrid learning, which increases the educational process's efficiency and gives both teachers and students more opportunities.

Principle of the project

PERSONALIZED EDUCATION FOR ALL
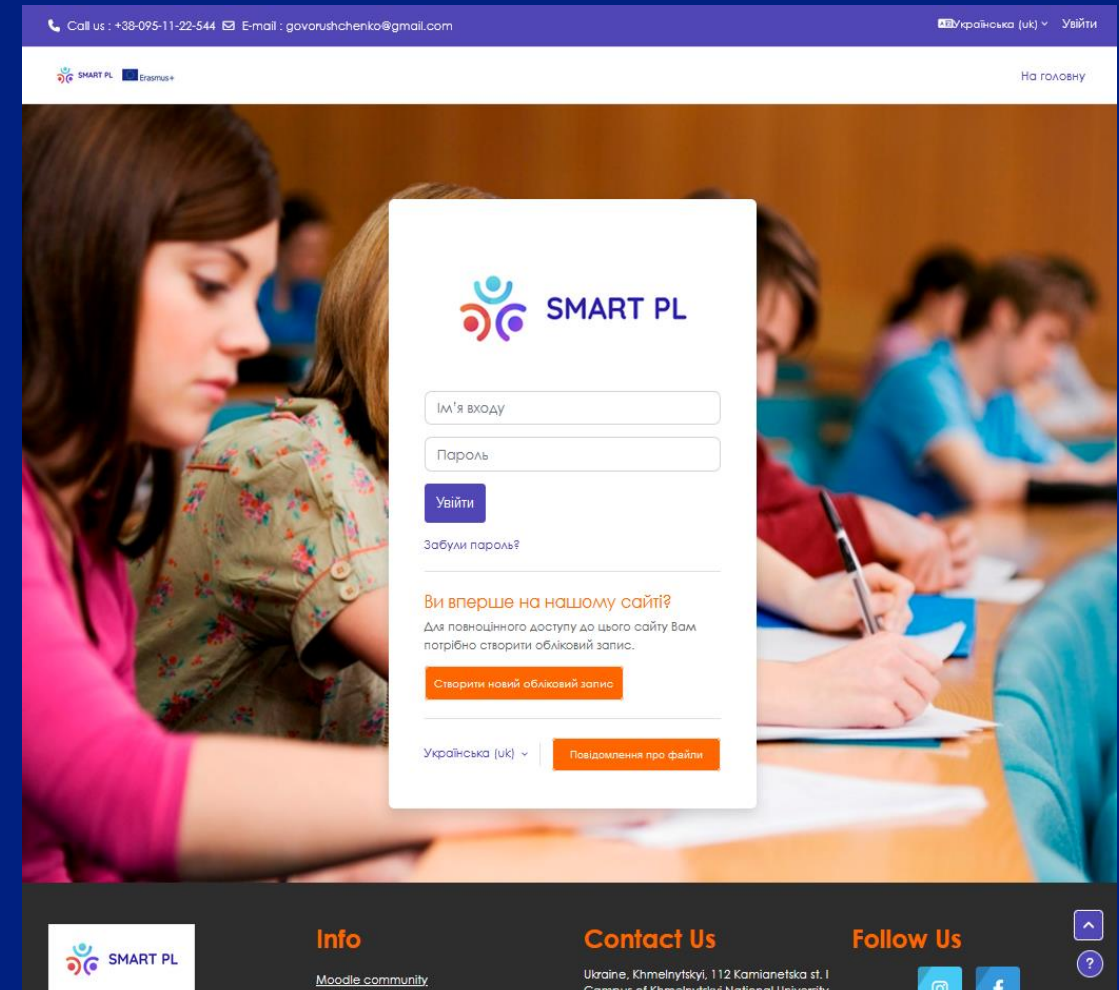
The fundamental principle of the project is a personalised approach aimed at forming a highly qualified competitive specialist who can conduct innovative activities and has the skills of continuous professional development.

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Principle of the project

The personalised approach is characterised by innovative teaching methods, designed to encourage collaboration between students and teachers, emphasising the central role of students in controlling their learning.

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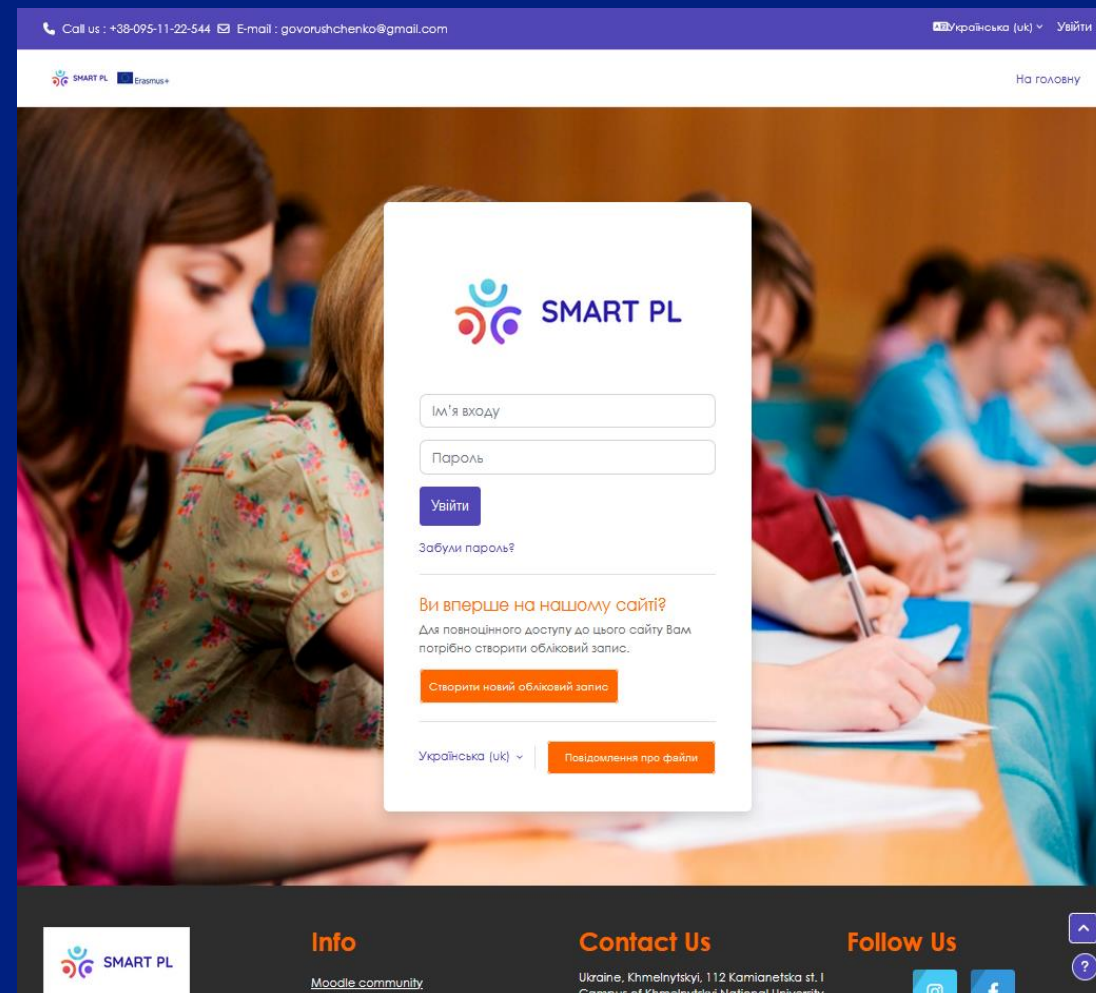
Essential skills and competences

Essential skills and competences by ESCO (European Skills, Competences, Qualifications and Occupations):

25 Information and communications technology professionals

https://esco.ec.europa.eu/en/classification/occupation_main

Occupations

Call us : +38-095-11-22-544 E-mail : govorushchenko@gmail.com

SMART PL Erasmus+

- ❑ Databases / 2521.3 database developer
- ❑ Algorithmization and programming / 2512.4 software developer
- ❑ UI design / 2513.3 user interface designer
- ❑ Cybersecurity / 2529.7 ICT security engineer
- ❑ Automation technology / 2514.4 numerical tool and process control programmer
- ❑ Embedded systems / 2514.2.1 embedded systems software developer
- ❑ IT project management / 1219.6 project manager
- ❑ Computer systems and networks / 2522.1.1 ICT network administrator
- ❑ Data analysis / 2511.3 data analyst
- ❑ Web development / 2513.5 web developer
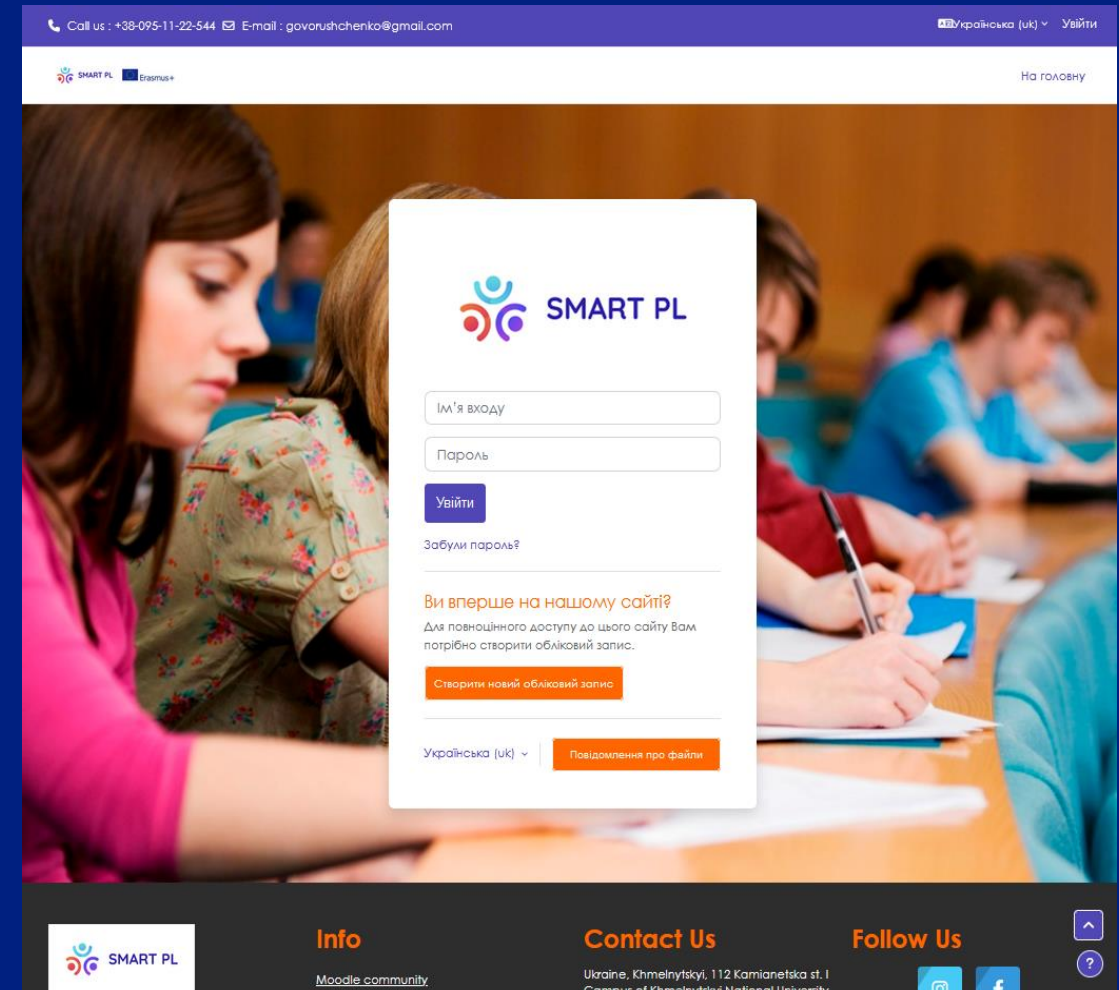- ❑ System software / 2511.15 ICT system developer

SMART-PL platform

SMART-PL information-diagnostic online Platform is an online platform that serves as a diagnostic tool for educational purposes. Such a platform has features and functionalities:
- to assess,
- to analyze,
- to provide information related to education skill testing.

SMART-PL platform

SMART-PL information-diagnostic online Platform is an online platform that serves as a diagnostic tool for educational purposes. Such a platform has features and functionalities to assess, analyze, and provide information related to educational skill testing.

https://smart-pl.khmnu.edu.ua/
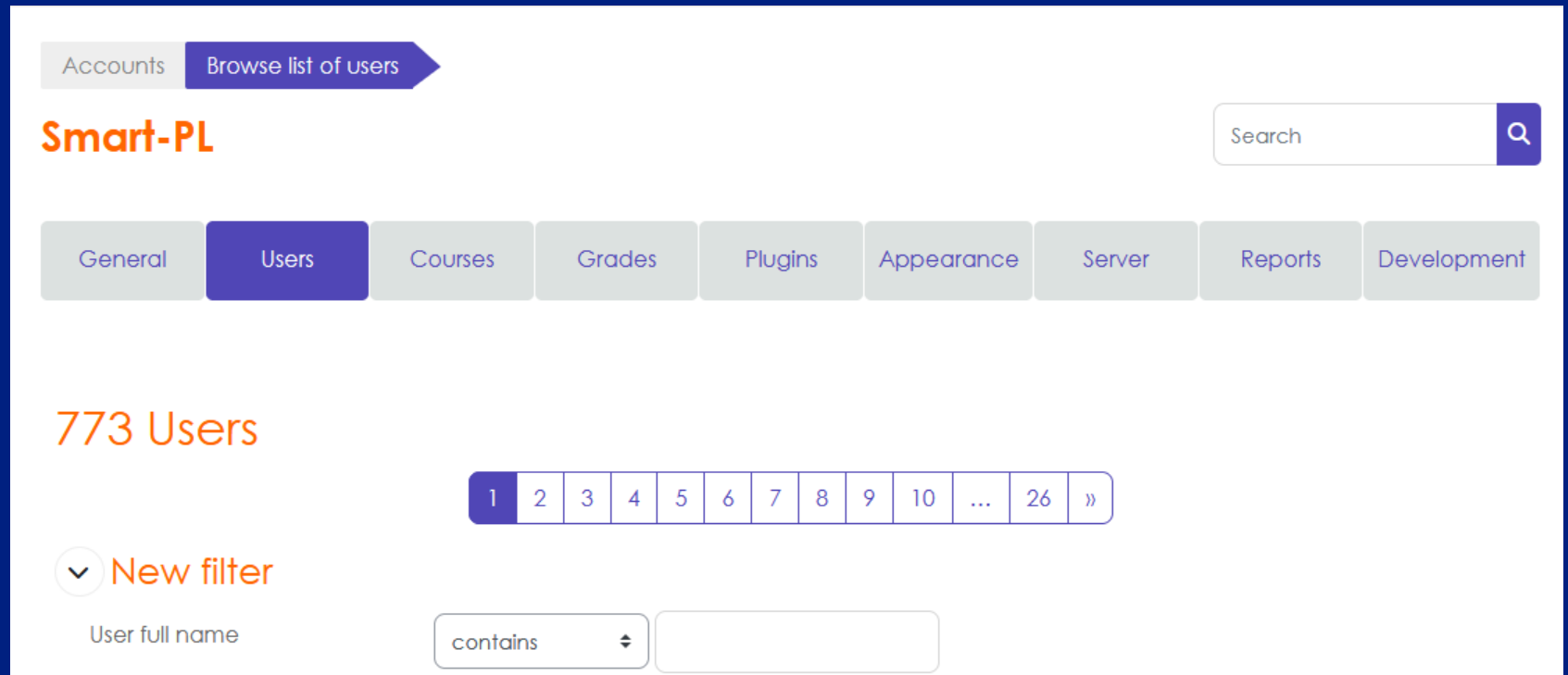
SMART-PL

SMART-PL platform

Platform serves 773 users

SMART-PL

SMART-PL platform

Number of tested students

№	University-partner	Number of tested students
1	KKNU (V.N. Karazin Kharkiv National University)	168
2	KhNU (Khmelnytskyi National University)	205
3	IFNUL (Ivan Franko National University of Lviv)	54
4	ONPU (Odessa National Polytechnic University)	131
5	KNU (Kryvyi Rih National University)	4
6	KSU (Kherson State University)	62
	Разом	624

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User registration and authentication

The profile contains several key sections:

- **User Details:** personal information
- **Course Details:** lists the user's enrolled courses, such as "Algorithmization and programming" and "System software."
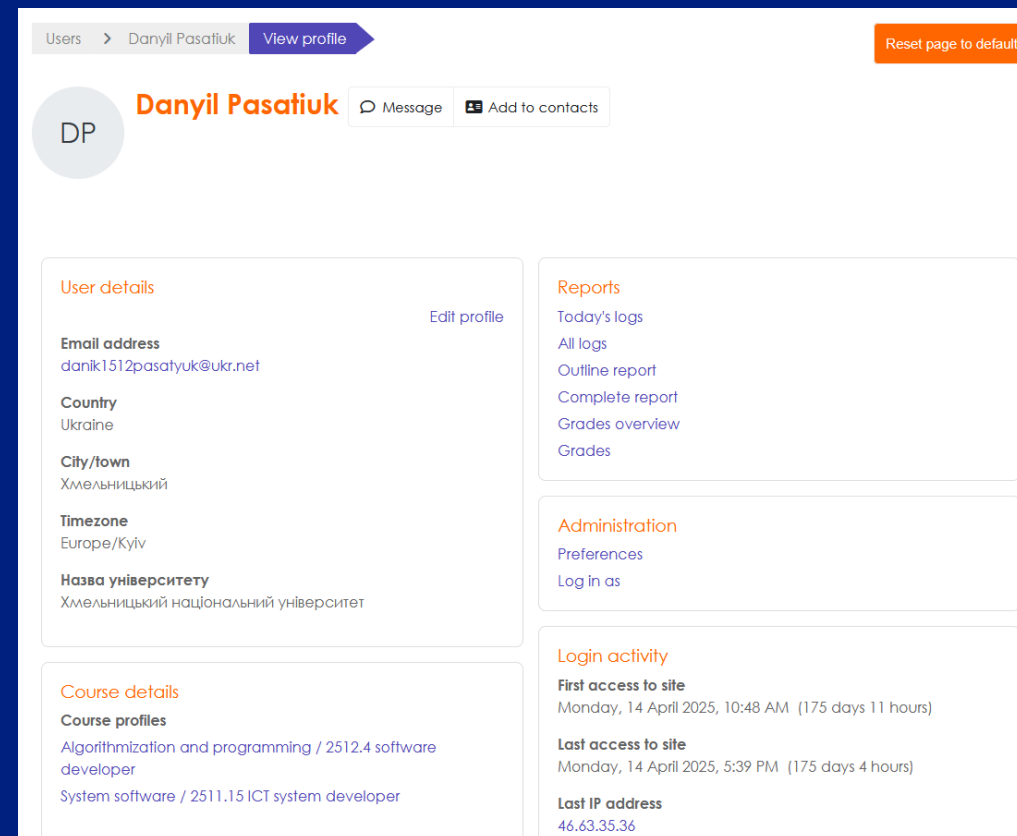- **Login Activity:** the first and last access dates.
- **Reports and Administration:** links for accessing logs, grades, and personal preferences.

SMART-PL platform

Example

- ❑ A detailed list of 16 specific skills that the platform helps to assess.
- ❑ They cover the entire development cycle: from analysing customer requirements to create technical documentation and using specialised tools.

Algorithmization and programming / 2512.4 software developer

Course	Settings	Participants	Grades	Reports	More ⌄
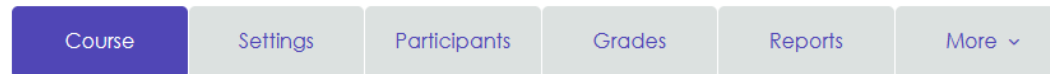
⌄ Мета тестування

Collapse all

Мета платформи, призначена для оцінки рівня таких навичок та компетенцій для розробника програмного забезпечення:

1. Здатність аналізувати специфікації програмного забезпечення;
2. Здатність створювати блок-схеми;
3. Вміння налагоджувати програмне забезпечення;
4. Вміння визначати технічні вимоги;
5. Здатність розробляти автоматизовані методи міграції;
6. Вміння розробляти прототип програмного забезпечення;
7. Здатність визначати вимоги замовника;
8. Здатність інтерпретувати технічні вимоги;
9. Здатність керувати інженерним проєктом;
10. Здатність проводити наукові дослідження;
11. Здатність надавати технічну документацію;
12. Здатність використовувати інтерфейс для конкретного додатку;
13. Вміння використовувати патерни проектування програмного забезпечення;
14. Здатність використовувати програмні бібліотеки;
15. Здатність використовувати програмне забезпечення для технічного креслення;
16. Здатність використовувати засоби автоматизованої розробки програмного забезпечення
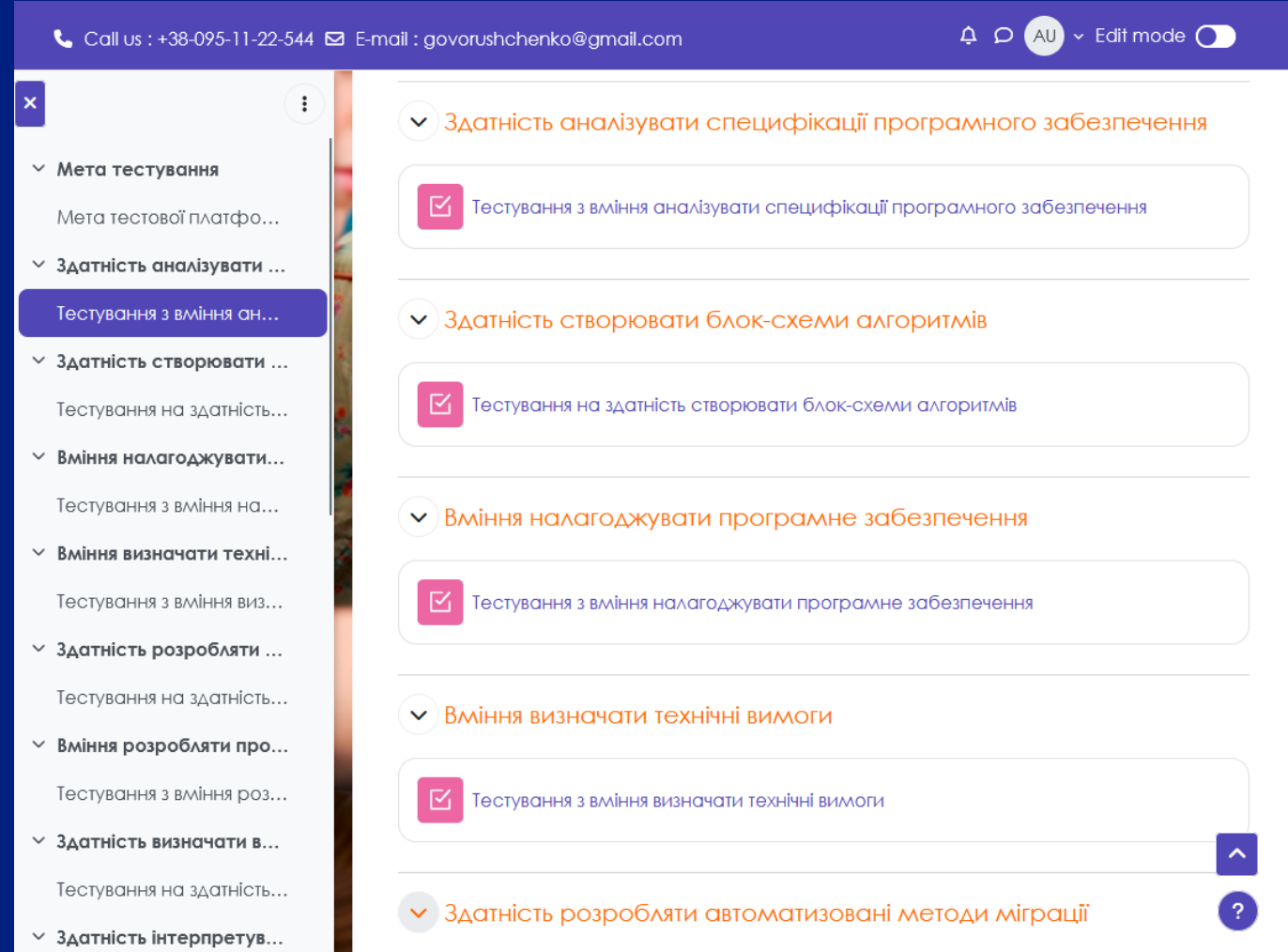
Бажаємо успішного тестування!

SMART-PL platform

SMART-PL system page where students can
 take tests to check their professional skills in the field of software development

Assessment of knowledge

Test Course

| Course | Settings | Participants | Grades | Reports | More ⌄ |

☑ **Adding a new Quiz** ❓

Expand all

⌄ **General**

Name ❗ [   ]

Description

Edit View Insert Format Tools Table Help

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☐ Display description on course page ❓

SMART provides tools to create self-assessment tests

Tool settings

Quiz settings menu

> Timing

> Grade

> Layout

> Question behaviour

> Review options ?

> Appearance

> Safe Exam Browser

> Extra restrictions on attempts

A tool to create Quiz :

Built-in tool SMART to create tests allows instructors create special tests with various settings and functions:

❑ Creation th Quiz . Teachers they can create tests by defining name Quiz , description , time, assessment and parameters feedback through intuitive clear interface .

❑ Quiz for time. Tests may be limited in time, allowing instructors set the opening and closing time , as well as the duration implementation Quiz (for example , 30 minutes).

❑ Attempts . Teachers they can specify how much attempts students can pass the test. Each one attempt maybe or replace the previous one , or be averaged to calculate the final result.

❑ Randomization . SMART supports randomization questions and answers in the quiz . It helps to prevent fraud , guaranteeing that no student will receive the same test layout.

Tools

Algorithmization and programming / 2512.4 software developer

Course	Settings	Participants	Grades	Reports	More ⌄

Questions ⇅

Question bank

Match All ⇅ of the following:

Match Category ⇅ Type or select... ▼ Default for SoftDev ✕ ☐ Also show questions from subcategories

AND

Match Show hidden questions ⇅ No ⇅

+ Add condition

Clear filters   Apply filters

Create a new question ...   Reset columns   Show question text in the question list? No ⌄

Bank of questions:
- ❑ Multiple questions. The SMART Question Bank allows instructors to create and save questions that can be reused across multiple tests and courses.
- ❑ Categories. Questions can be categorized for ease of management and search. Categories can be course specific or shared across the CIS site for wider use.
- ❑ Import and export. Instructors can import questions from external files (such as CSV, XML, or other supported formats) and export questions for use in other systems.

Evaluation and mechanisms reverse connection

Evaluation methods:
- ❏ Rating scales. Instructors can define their own grading scales (eg, pass/fail, letter grades, numerical scales) or use a standard 0-100 scale.
- ❏ Gradebook Integration . Test and assignment grades are automatically added to the built-in SMART gradebook , which provides an overview of each student's performance throughout the course.
- ❏ Weighted scores. Instructors can assign specific weights to various assessments, tests, or assignments, determining how they affect the final course grade.

Rating and feedback

SMART assessment system is flexible and supports different assessment types, assessment methods and feedback options.

Balance sheet:
- ❑ Course evaluations. SMART has a built-in gradebook that consolidates all grades from tests, assignments, and other assignments.
- ❑ Weighted scores. Instructors can assign weights to various course assignments to calculate final grades.

Rating and feedback

- Built-in feedback. Teachers can provide feedback directly on assignments, tests, and other assessments.

Marks 19.00/20.00

Grade 9.50 out of 10.00 (95%)

Feedback

Дякуємо за Вашу спробу! Ви маєте високий рівень знань.

Для розвитку в області програмування на рівні Middle та Senior рекомендую ознайомитися з більш високорівневими концепціями, архітектурними підходами та кращими практиками. Ось декілька рекомендацій:

Книги:

1. **"Refactoring: Improving the Design of Existing Code" by Martin Fowler** - Процес поліпшення коду, зберігаючи його функціональність.
2. **"Designing Data-Intensive Applications" by Martin Kleppmann** - Проектування великих та масштабованих систем обробки даних.
3. **"The Mythical Man-Month: Essays on Software Engineering" by Frederick P. Brooks Jr.** - Класична книга, що розглядає проблеми управління та розробки програмного забезпечення.
4. **"Domain-Driven Design: Tackling Complexity in the Heart of Software" by Eric Evans** - Проекція концепцій доменно-орієнтованого проектування на реальні проекти.
5. **"The Clean Coder: A Code of Conduct for Professional Programmers" by Robert C. Martin** - Питання професійної етики та ведення себе для програмістів.

Курси та Онлайн-ресурси:

1. **Pluralsight, Udemy, LinkedIn Learning** - Платформи, що пропонують високоякісні курси для середнього та вищого рівнів програмування.
2. **Software Architecture Patterns (YouTube Channel by Sourcemaking)** - Відео з патернами та архітектурними рішеннями.
3. **High Scalability Blog** - Статті та публікації про високоякісні та високомасштабні системи.

Документація та Інструменти:

1. **Official Documentation of Frameworks and Tools** - Детально вивчайте офіційну документацію технологій, які використовуєте.
2. **Docker Documentation** - Якщо ви ще не працювали з Docker, вивчення цього інструменту для контейнеризації може бути корисним.

Участь у Ком'юніті:

1. **Meetups та Конференції** - Участь у технічних заходах для обміну досвідом та знайомства з іншими професіоналами.
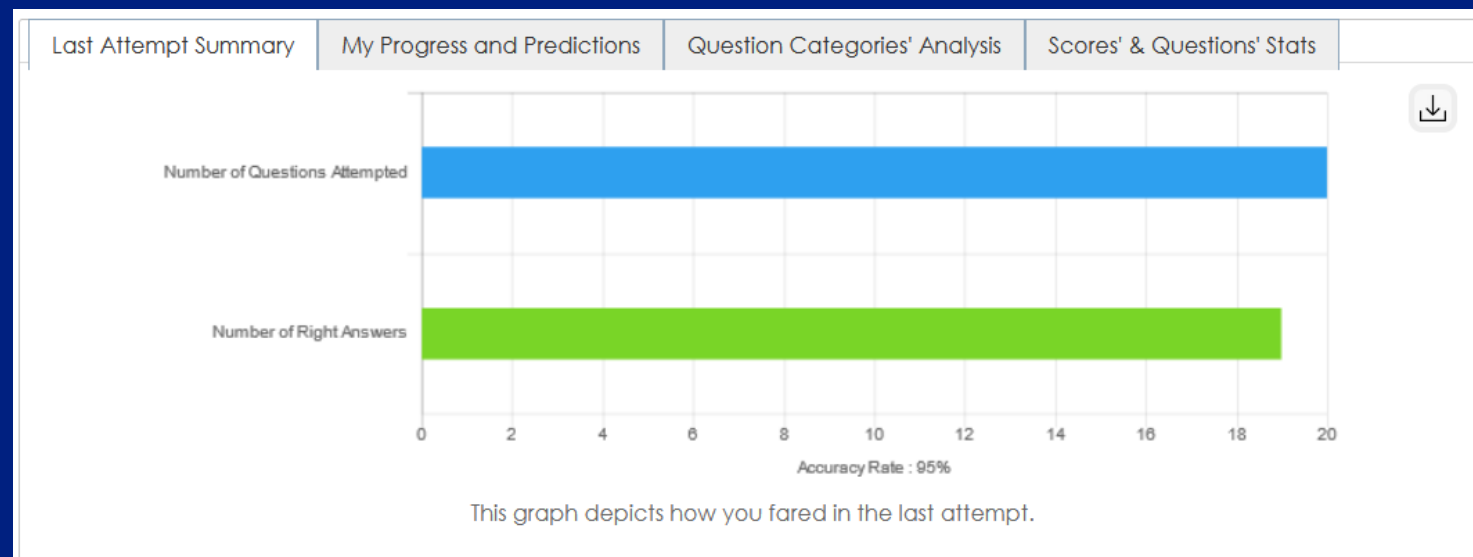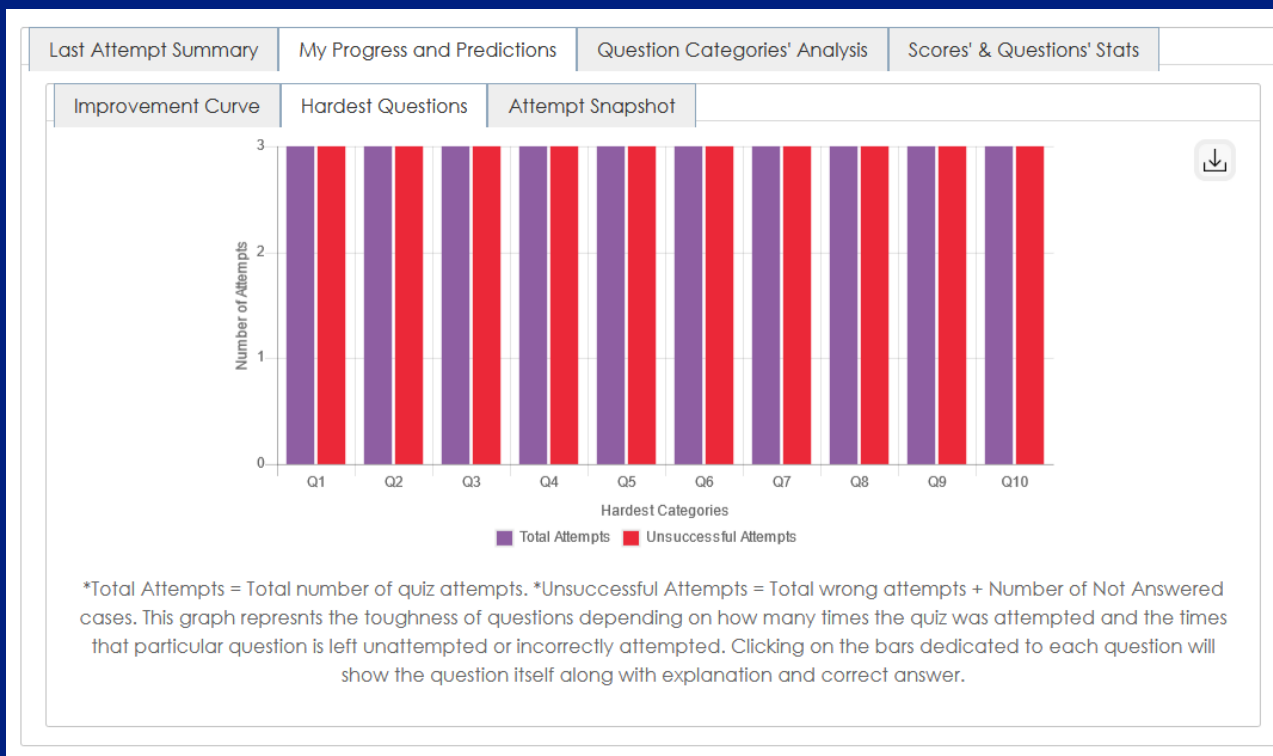
Progress reports

Steps to monitor students' progress in basic skills
- Select the Ratings tab
- Select the Test Analytics menu item
- Select the View Analytics link

This graph depicts how you fared in the last attempt.

Reporting and analytics for tests

SMART provides several reporting tools to help instructors monitor test performance and make data-driven decisions.
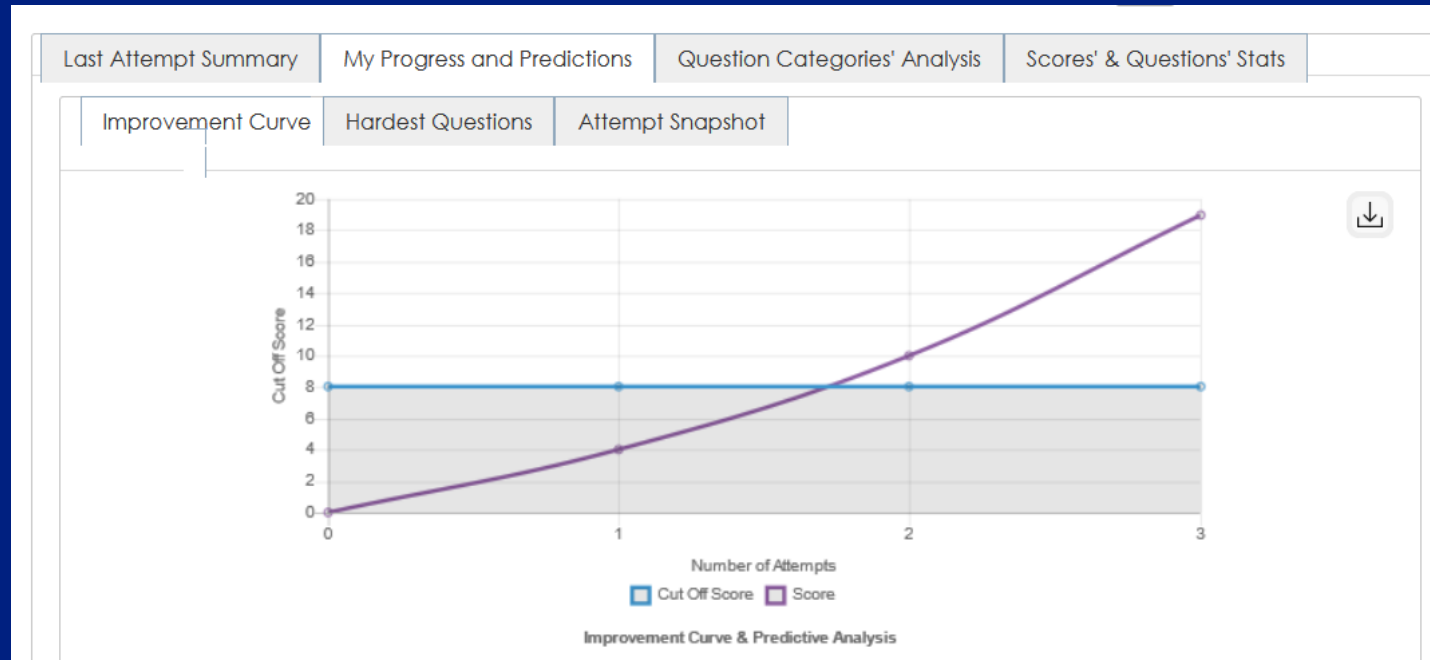
Quiz reports :

- ❑ Attempt report. Shows all student attempts to complete the test, as well as scores, time spent, and completion status.
- ❑ Analysis of questions. Provides detailed performance statistics for individual questions, helping instructors identify which questions were too difficult, too easy, or ambiguous.
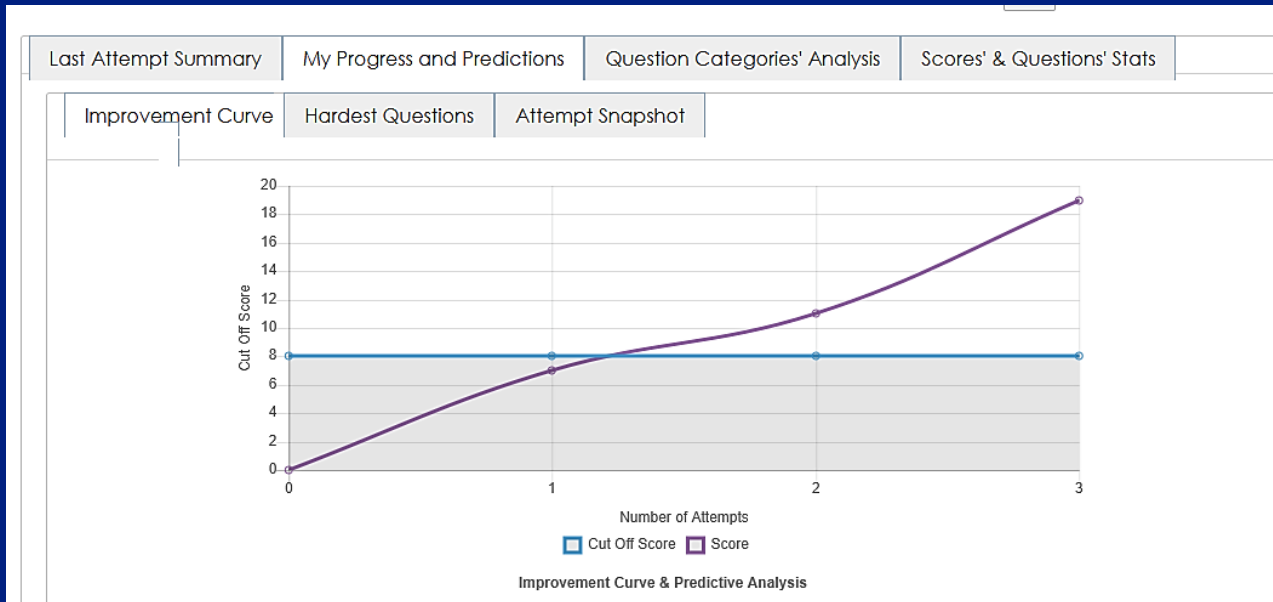
Reporting and analytics for tests
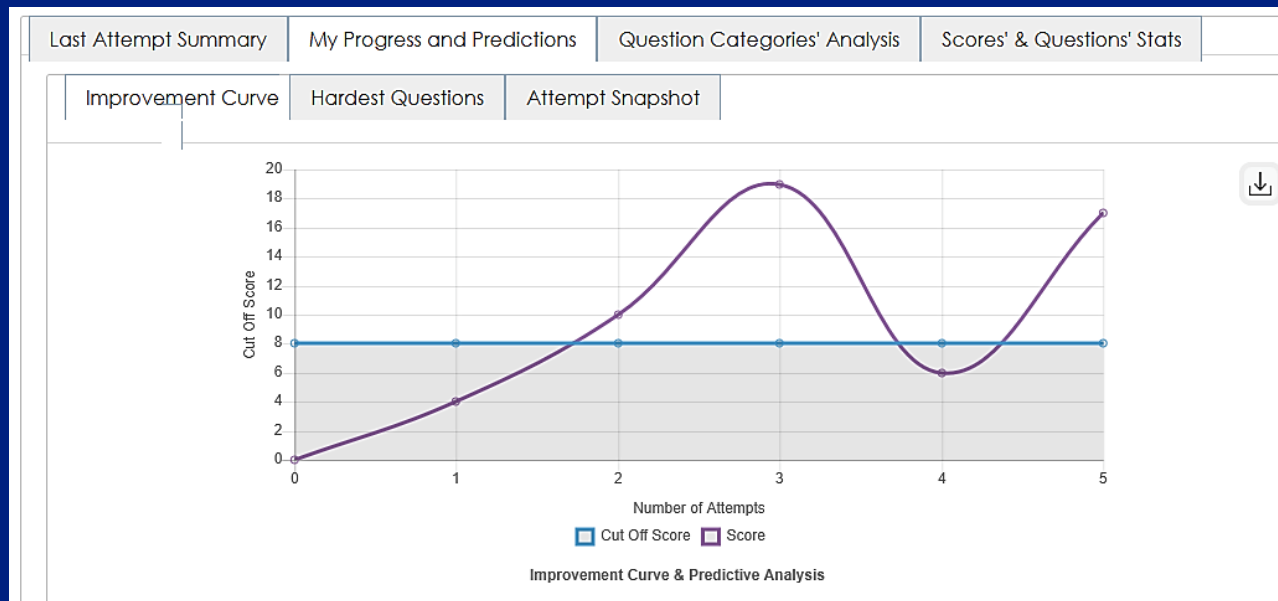

Activity logs

Reporting and analytics for tests

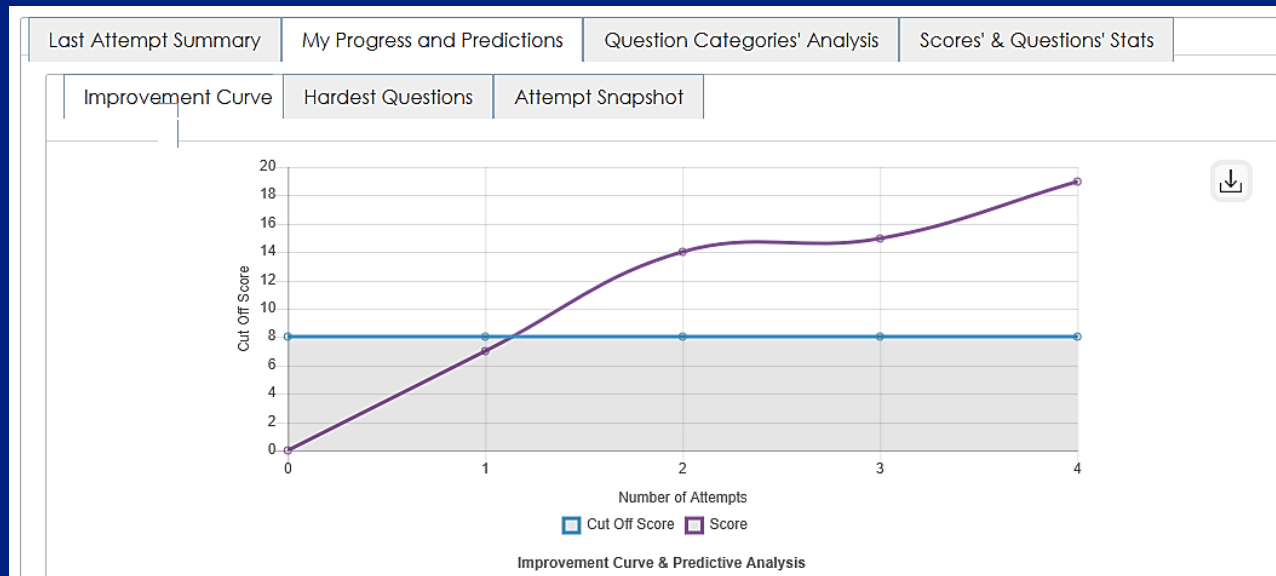Activity logs

Reporting and analytics for tests

Activity logs

Reporting and analytics for tests

Last Attempt Summary | My Progress and Predictions | Question Categories' Analysis | Scores' & Questions' Stats

Improvement Curve | Hardest Questions | Attempt Snapshot

Improvement Curve & Predictive Analysis

Activity logs

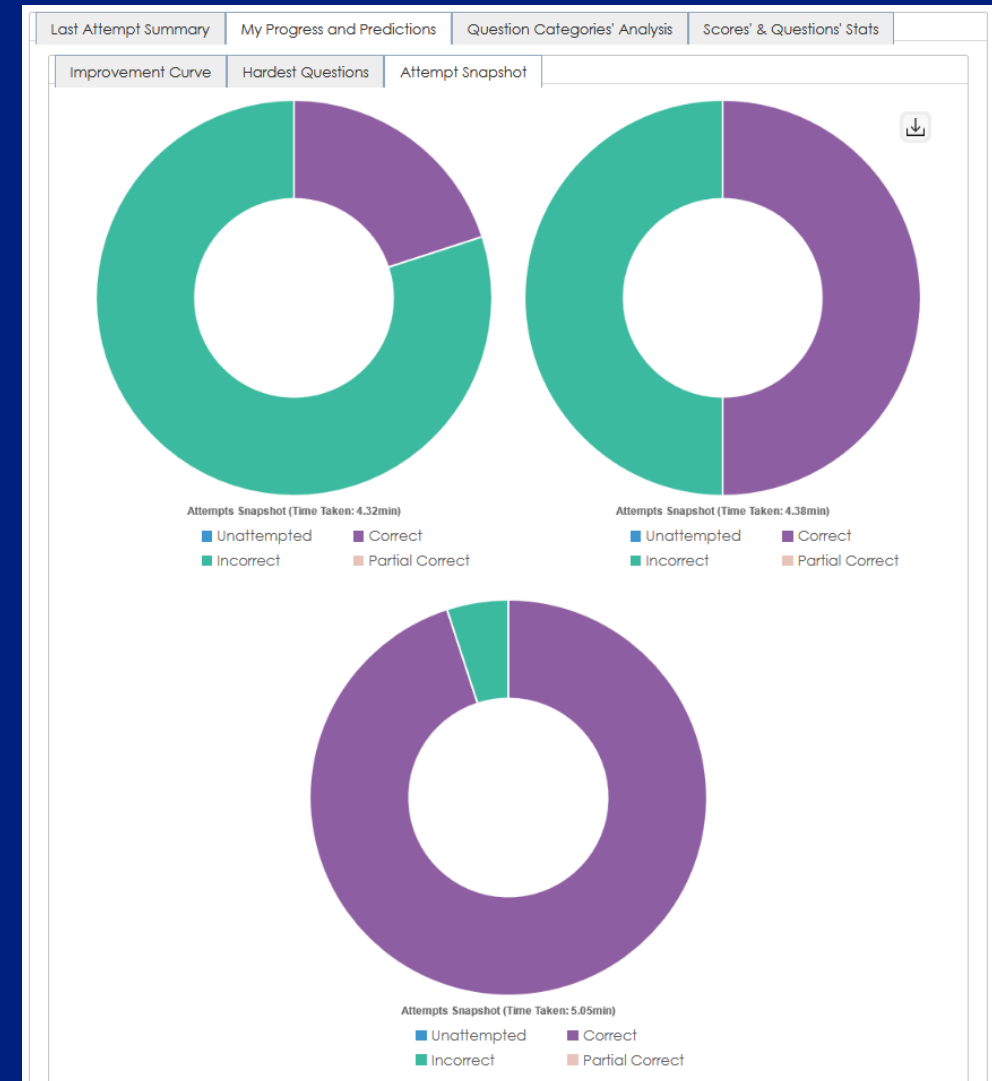Co-funded by the
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Module for tracking and reporting

Visual progress indicators. Students can see their progress in the course with visual indicators (such as flags) next to each activity. This helps students keep track of what they have completed and what is still to come.

Thank you for your attention!

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