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IMPROVING STUDENTS' KNOWLEDGE IN MATHEMATICS WITH THE MATHE PROJECT'S DIGITAL TOOLS

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INTRODUCTION

- an unprecedented development of science and technology
- students, higher education students- lack the basic maths skills to effectively follow their lectures



The MathE project- partnership

Universities and organisations in the field of education and mathematics:

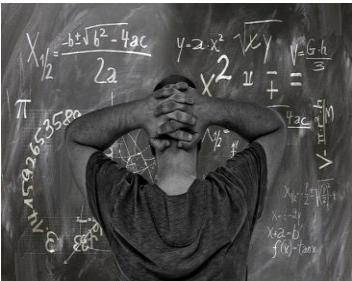
- Instituto Politécnico de Bragança (Portugal),
- Limerick Institute of Technology (Ireland),
- University of Genoa (Italy),
- Pixel (Italy),
- Kaunas University of Technology (Lithuania),
- Technical University of Iasi (Romania),
- EuroEd (Romania)

The MathE objectives

- enhance the quality of teaching and improve pedagogies and assessment methods by facilitating the identification of students' gaps in Math
- provide Math teachers with appropriate digital resources
- enhance transnational sharing of innovative teaching sources

Target groups

- Lecturers
- Math students at university level
- Policy makers in the field of education



MathE ACTIVITIES

- building up a community of interested teachers of mathematics from all partner countries
- identifying students' main gaps in their mathematics knowledge or skills
- selecting 16 most relevant lacunae in students' knowledge and skills
- developing the platform

MathE MAIN STAGES

- **Students' self- need assessment toolkit**
- **A final assessment toolkit**
- **Online Math Library of Video Lessons and Teaching Materials**

Stage 1 – Students' self-need assessment toolkit

- identified the following gaps in students' knowledge (Manipulation of algebraic expressions, trigonometric functions, Real Functions of a single variable, Differentiation, Integration, Matrix and determinants, Geometrical interpretation, EigenValues and EigenVectors, Linear systems, Complex Numbers, Graphs, Optimization, Limits and sequences, Statistics and Real Functions of several variables and Differential equations)
- 40 questions/answers for the Student Need Assessment Tool and 20 questions/answers for the Student Assessment Tool

Stage 1 Students' self-need assessment toolkit

← → 📄 math.e.pixel-online.org/STAS_SNA.php

Self Need Assessment

Homepage > Student's Assessment > Self Need Assessment



This toolkit allows students to carry out a self-evaluation of their knowledge on 10 selected Math topics.

To start the assessment please select the topic and the level.
The numbers between brackets indicate the number of available questions.

- Topic
- Select Topic
 - Analytic Geometry (40)
 - Complex Numbers (33)
 - Differential Equations (41)
 - Differentiation (86)
 - Fundamental Mathematics (87)
 - Graph Theory (48)
 - Integration (80)
 - Linear Algebra (210)
 - Optimization (82)
 - Probability (46)
 - Real Functions of a single variable (44)
 - Real Functions of several variables (39)
 - Statistics (40)

START ASSESSMENT

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← → 📄 math.e.pixel-online.org/STAS_SNA_quiz.php?assid=2785

Self Need Assessment

Homepage > Student's Assessment > Self Need Assessment



This toolkit allows students to carry out a self-evaluation of their knowledge on 10 selected Math topics.

Question 1

Topic: Analytic Geometry
Level: Basic

The angle formed by vectors $u = (8, -3, 0)$ and $v = (-2, 1, 2)$ is

Choose the right answer or skip to the next question.

Answer 1:

$$\frac{\pi}{4}$$

Answer 2:

$$\frac{2\pi}{3}$$

Answer 3:

$$\frac{\pi}{3}$$

Answer 4:

$$\frac{3\pi}{4}$$

Answer 5:

DO NOT KNOW

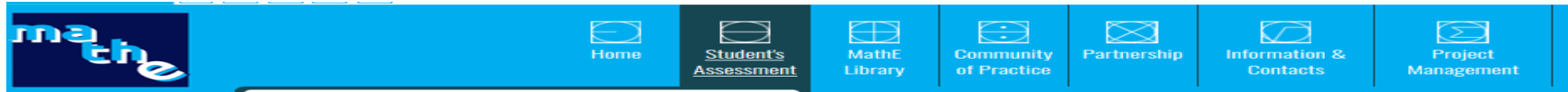
SKIP

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Stage 2 Final assessment toolkit




Final Assessment

Homepage > Student's Assessment



Self Need Assessment
This toolkit allows students to carry out a self-evaluation of their knowledge on 10 selected Math topics.



Final Assessment
This toolkit provides teachers with the possibility to organize for their students an online test on selected Math topics.

Lecturer	Title	Date	
Francesco Pinzani	Instituto Politécnico de Bragança Algebra <i>The exam refers to the contents of the first semester</i>	31/07/2019 h. 12:55 120 minutes	ASK TO PARTICIPATE

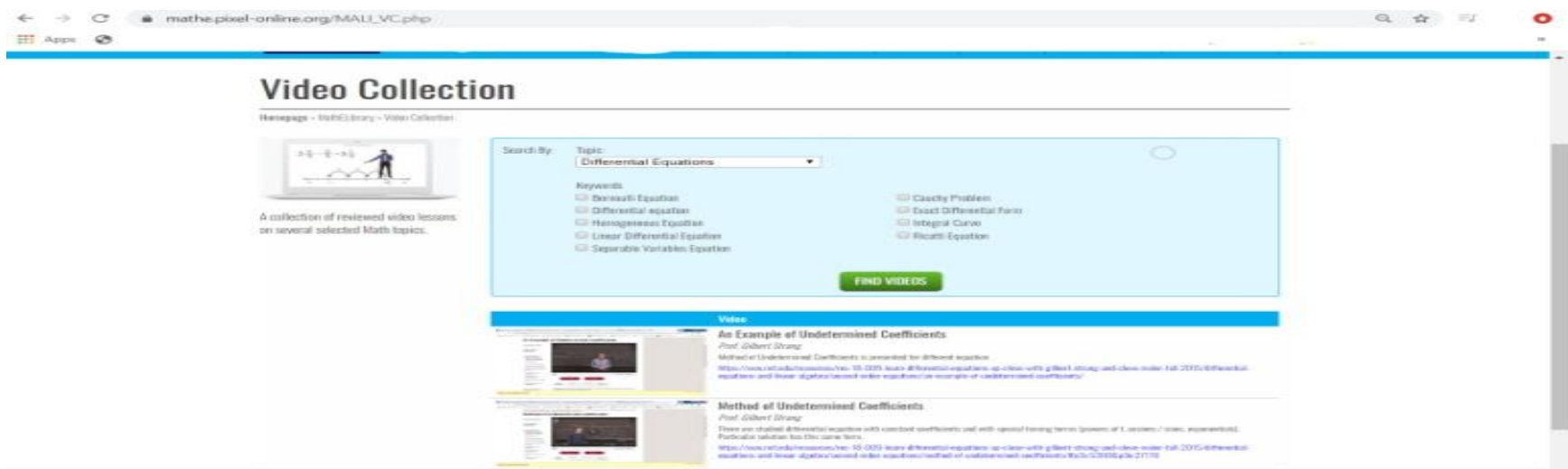
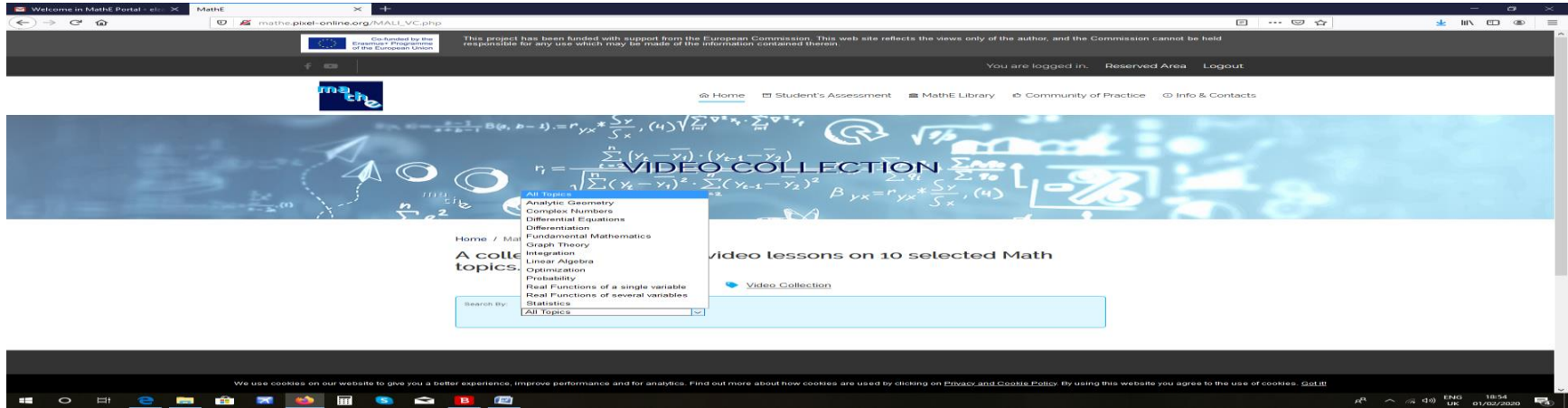
Lecturer	Title	Date	
Francesco Pinzani	Università degli Studi di Genova Algebra <i>The exam refers to the contents of the first semester</i>	31/07/2019 h. 17:00 120 minutes	ACCEPTED

Lecturer	Title	Date	
Francesco Pinzani	Università degli Studi di Genova Algebra <i>The exam refers to the contents of the first semester</i>	30/07/2019 h. 17:00 120 minutes	START AT 17:00

Lecturer	Title	Date	
Francesco Pinzani	Università degli Studi di Genova Algebra <i>The exam refers to the contents of the first semester</i>	30/07/2019 h. 16:30 120 minutes	START ASSESSMENT

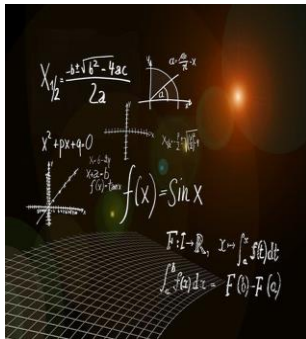


Stage 3 Online Math Library of Video Lessons and Teaching Materials



FURTHER DEVELOPMENTS

- a community of practice which allows teachers of Mathematics in higher education institutions to share and compare teaching resources, tools and strategies
- a five-day training course



CONCLUSIONS

- applying ICT in teaching mathematics - keeps students more engaged and motivated
- provides teachers with invaluable evaluation and assessment tools
- exchanges among teachers and researchers about good practices in math teaching

THANK YOU!



MathE

Improve Math Skills in Higher Education

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