IMPROVING STUDENT ENGAGEMENT IN CIVIL ENGINEERING STUDIES

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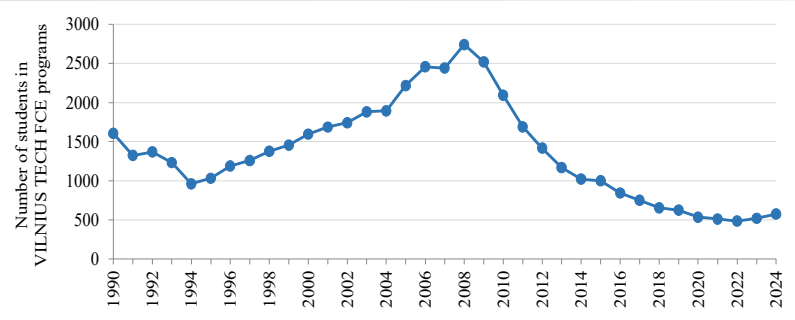
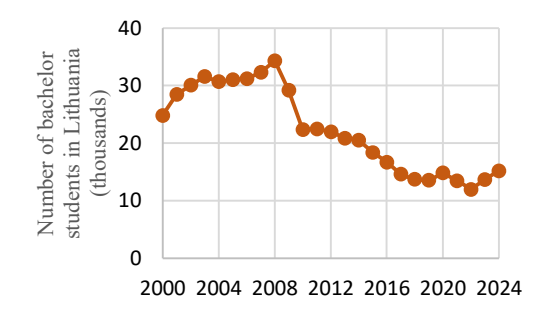
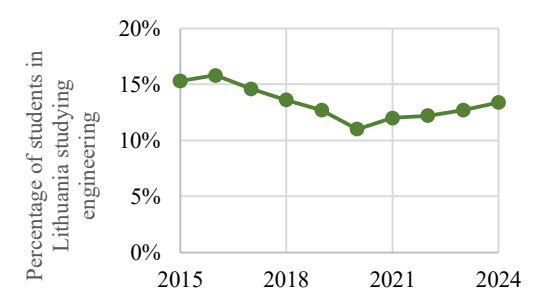
Faculty of Civil Engineering

Are we doing our best to attract young people to engineering?







in 2024 about 29% of students did not complete their studies on time

7 % left to repeat the year
11% dropped out altogether
11% took academic leave

"studies incompatible with my job"

"I am leaving the country"

"unsatisfactory quality of studies"

"these studies are not for me"

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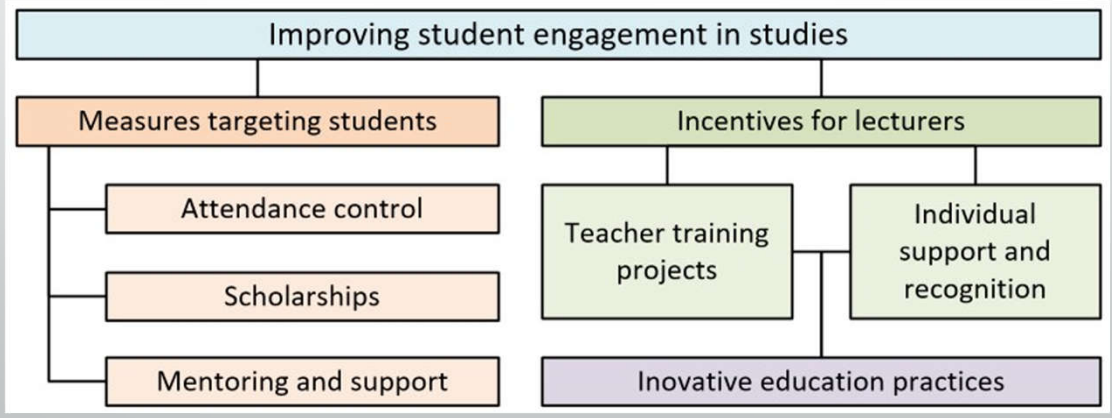
Can we make a change? What depends on us?

- The aim to improve the public perception of civil engineering and promote it among young people.
- Keep focus and attention on this task from **administration and academic staff**.
- Introduce **modern teaching and communication methods** that meet students' expectations.
- Big part of successful studies are active, determined and eager to learn students – **improve engagement**.



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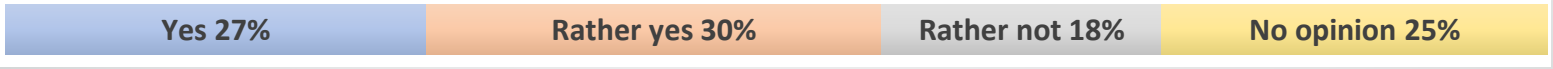
MEASURES TARGETING STUDENTS

1. Attendance control

Since 2023, a compulsory attendance of lectures has been introduced in VILNIUS TECH in order to **"bring students back to university"** and increase their engagement in the study process.

Compulsory means that failing to attend a certain percentage (usually 70-80%) results in subject failure.

Has the attendance tracking of **lectures** been successful as a means of improving study results?



Has the attendance tracking of **seminars** been successful as a means of improving study results?

Has the number of **exam failures** in your subjects **decreased** since the introduction of attendance tracking?

MEASURES TARGETING STUDENTS

2. Scholarships

Academic year	2021-2022	2022-2023	2023-2024	2024-2025
Total number of scholarships for bachelor students from private companies	12	18	18	23

"In business, we feel that there is a shortage of talented engineers, project managers and designers for more complex projects. That's why we want to contribute to the motivation of students, because engineers will always be needed."

"It is a great honour to receive this scholarship. I am glad that someone on the outside has appreciated our efforts and confirmed that we are on the right career path. It also provided some financial incentive and support to continue to achieve our goals!"

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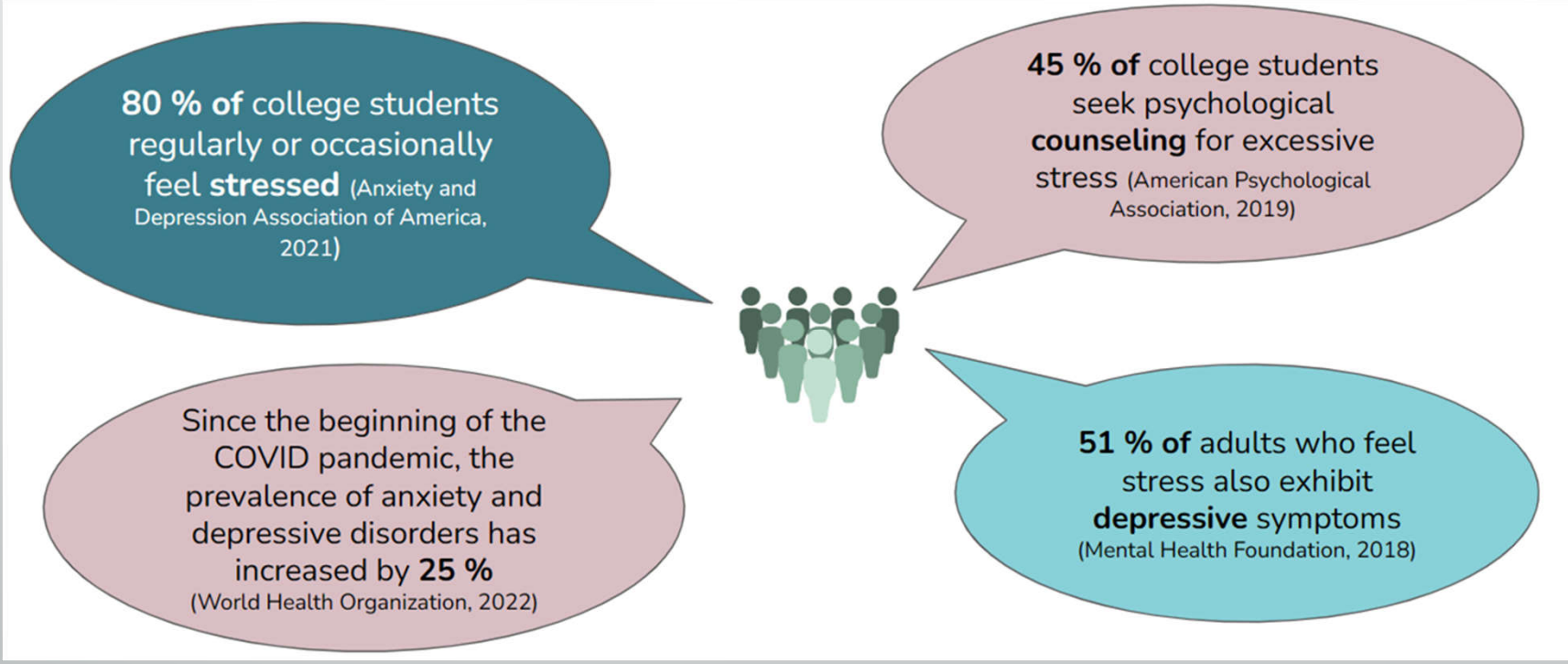
MEASURES TARGETING STUDENTS

3. Mentorship and individual support



INCENTIVES FOR LECTURERS
Teacher training and individual support

Teacher training projects:

- ✓ Digital Transformation in Education
- ✓ Flipped classroom implementation
- ✓ Digital competences
- ✓ ...

Individual support and recognition

- ✓ Annually, around 40-45 different training topics are offered to lecturers, attracting approximately 1500 participants
- ✓ Awards for outstanding achievements in teaching. Awarded with certificates and badges "I Teach at VILNIUS TECH"

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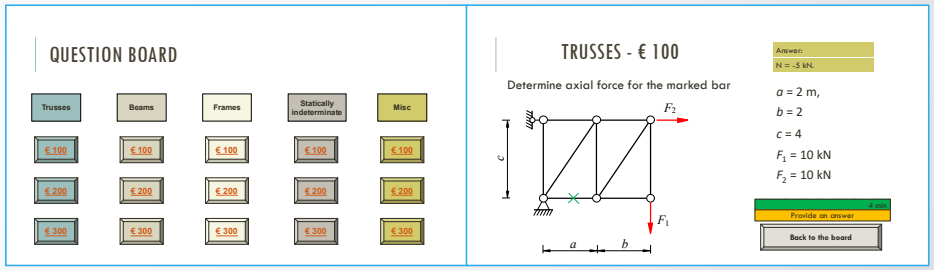
INNOVATIVE EDUCATION PRACTICES

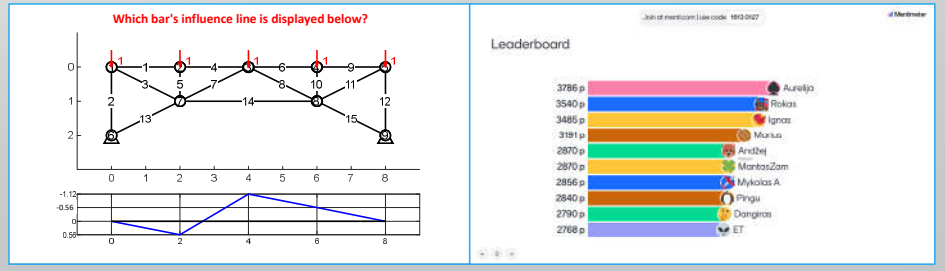
1. Gamification of lectures

Gamification of studies can:

- ✓ inspire creativity
- ✓ innovation
- ✓ participation
- ✓ leadership
- ✓ goal management
- ✓ motivation

Compared to the traditional class, games can significantly improve academic performance in engineering students





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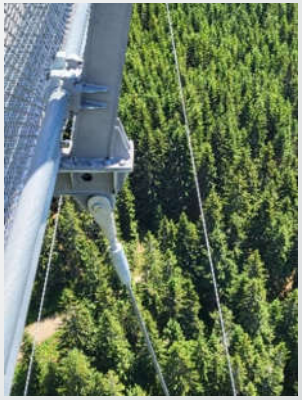
INNOVATIVE EDUCATION PRACTICES
1. Learning from environment

Changing physical location of education fosters the learning process and therefore **learning objectives can be achieved faster**

Encountering real world problems and interacting with professionals **motivate students in learning relevant subjects**

Helps to develop soft skills (social interactions, professional communication, knowledge of urban environment etc.).



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INNOVATIVE EDUCATION PRACTICES
3. Project/problem based learning

These are demanding methods for lecturers, but it can produce excellent results.

- ✓ It requires (and encourages) great student engagement,
- ✓ Improves teamwork
- ✓ Fosters student oriented learning
- ✓ Highlights individual talents

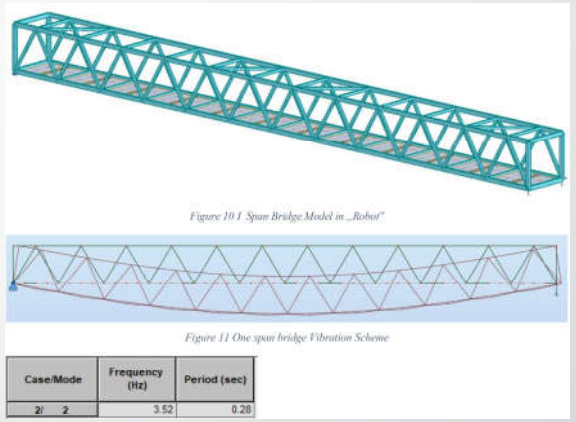
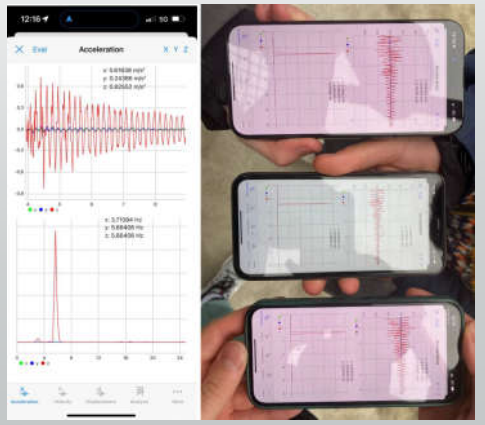


Figure 10 1 Span Bridge Model in „Robot"

Figure 11 One span bridge Vibration Scheme

Case/Mode	Frequency (Hz)	Period (sec)
2/ 2	3.52	0.28

"I would like to thank you for giving us an opportunity to learn effective and productive dynamics and stability of buildings. It was the best learning experience of my studies".



Improving student engagement in studies requires a **holistic approach**.

- There are multiple reasons why some students in civil engineering lack motivation and have low academic performance. Some things can be mitigated with **administrative tools:**
  - ✓ making study environment as inviting as possible
  - ✓ controlling lecture attendance
  - ✓ ensuring individual psychological support
  - ✓ finding sponsors for scholarships
- However, the major responsibility for study quality lies on the shoulders of the lecturers. **Investing in pedagogical competencies is essential**. Even if it does not directly raise student grades, improved engagement should produce good outcome it the longer run.
- Finally higher student satisfaction with studies should gradually **improve public perception** of civil engineering and promote it among young people.

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Thank you for your attention!