

STEM On Tour and/or STEM In Higher Education Institution Presentation Guide

This section provides a detailed, slide-by-slide guide on adapting the provided template to create a faculty-specific version for the STEM On Tour events and/or STEM In events. The example customized slide deck is used as a reference to demonstrate a specialized presentation for the Faculty of Automatic Control (ACS) and Computers at POLITEHNICA Bucharest.

The purpose of the presentation is to:

- Attract top high school students from mathematics, physics, and IT-focused classes who are passionate about technology, programming, and engineering.
- Recruit motivated students who understand that they are choosing a top-tier, challenging faculty with high rewards and career opportunities in research, industry, corporate environments, or technology startups.

In terms of presentation format and timing, the following are recommended:

- Recommended duration: 30–35 minutes to allow time for Q&A.
- If necessary, the presentation can extend to 45 minutes but be mindful of engagement.
- It is best to divide the slides among 1-2 professors/lecturers and 2-3 students to maintain a dynamic pace.
- Avoid covering every single slide in full detail—adapt the content to the audience and prioritize key messages.
- Use interactive elements such as:
 - Open-ended questions (e.g., “Who can give an example of...?” or “How do you see X field evolving?”)
 - Polls (e.g., “Who thinks X vs. Y?”)
 - Online audience engagement (e.g., raise-hand features for virtual presentations).

Below are the key themes to emphasize:

- **A Prestigious, Challenging Faculty/Higher Education Institution** – The faculty/higher education institution is high-level, demanding, but rewarding.
- **The Faculty/Higher Education Institution as a Community of Excellence** – Students join a top-tier academic environment with like-minded peers and dedicated professors.
- **Career Opportunities** – Graduates have strong prospects in research, industry, corporate IT, or tech entrepreneurship.
- **Extracurricular Activities** – Highlight opportunities in competitions, volunteering, research projects, and student organizations.

You can find below the suggested role assignments:

- **Professors/Lecturers:** Overview of the faculty, curriculum, and career opportunities.
- **Senior Students:** Provide real-life insights into student life, research, and competitions.
- **Moderators:** Manage time and engage the audience with questions.

The table below outlines how the slides are typically distributed among presenters and the key topics covered.

Slide number	Topic	Presenter(s)
2	Presentation team	All
3-5	Differences: high school vs. higher education institution	Professor/Lecturer / Senior Student
6-8	Institution (higher education, faculty) and directions in your institution	Professor/Lecturer
9-16	Example projects	Professor/Lecturer
17-19	Competitions, summer schools	Student
20	International opportunities, Erasmus+	Student
21-22	Events and volunteering	Student
23	Specialized labs and research projects	Professor/Lecturer
24-25	Career opportunities	Student / Professor/Lecturer
26	Admission process	Student / Professor/Lecturer

Below, we present a slide-by-slide customization guide:

- Slide 2: Presentation team
 - Template content: Placeholder for names of the presentation team.
 - How to customize:
 - Replace placeholders with the actual presenters' names, titles, and affiliations.
 - Add photos to create a personal connection with the audience.
 - Ensure the team includes a mix of professors/lecturers, students, and alumni to provide diverse perspectives and highlight the diversity of the team (professors, students, alumni).
 - Extra tip: If you have past student ambassadors who have successfully transitioned to higher education life, include them in the team.
 - ACS example: The team slide includes both faculty members and current students, showing a mix of academic and student perspectives.
- Slides 3-5: Differences – High School vs Higher Education Institution (HEI)
 - Template Content: “Welcome to” (explains the shift from high school education to higher education-level learning)
 - How to customize:
 - Replace “” with the actual higher education institution’s name and faculty name.
 - Consider adding the higher education institution’s logo and branding colours.
 - Optionally, modify the tagline to reflect the faculty’s mission or slogan.
 - Extra tip: Add a short video or animation showing student life on campus.
 - Emphasize differences in learning style, self-discipline, and workload.
 - Add testimonials from current students on their transition experience.
 - Include visuals or infographics for clarity.
 - ACS example: Students share their experiences on adjusting to higher education challenges while enjoying hands-on learning opportunities.
- Slides 6-8: Institution (HEI, faculty) and directions in your institution
 - Template content: Placeholder for faculty name and general engineering fields such as Robotics, Cybersecurity, AI, Data Science.

- How to customize:
 - Replace "Faculty Name" with the actual faculty or department.
 - Highlight major fields of study and specializations relevant to your faculty.
 - If applicable, add a faculty motto or vision statement.
 - Remove or modify subjects to reflect the actual study programs in your faculty.
 - If there are interdisciplinary programs, include how they integrate different fields.
 - Use icons, graphics, or lab images to make the subjects visually engaging.
 - Extra tip: Use simple analogies to explain each specialization so that high school students can relate to them.
 - ACS example: Showcase departments in the faculty and highlight the directions and domains for each of them.
- Slide 9-16: Example projects
 - Template content: Showcases real-life systems where the things that students learn in the institution are applied.
 - How to customize:
 - Present real-life systems and describe how the things that students learn in the institution can lead to the implementation of such large-scale systems.
 - Extra tip: Provide examples of real-world applications of each specialization (e.g., cybersecurity in protecting online transactions).
 - ACS Example: Self-driving cars, TikTok, robots.
- Slide 17-19: Competitions, summer schools
 - Template content: Placeholder for opportunities beyond the classroom.
 - How to customize:
 - List competitions your faculty participates in (e.g., hackathons, coding contests).
 - Include relevant student clubs, research groups, or innovation labs.
 - Include real competition names, student achievements, and testimonials.
 - Mention notable summer schools and their application process.
 - Mention incentives (e.g., scholarships, automatic admission for winners).
 - Extra tip: Encourage students to join extracurricular activities early to enhance their application profile to a HEI
 - ACS example: Mentions coding contests like ACM and hackathons.
- Slide 20: International opportunities, Erasmus+
 - Template content: ERASMUS+ and other international opportunities placeholders.
 - How to customize:
 - Include details on international exchange programs.
 - Highlight partnerships with other Higher Education Institutions for student mobility.
 - Extra tip: Share experiences from past students who studied abroad.
 - ACS example: Highlights top partner institutions and testimonials from exchange students.
- Slide 21-22: Events and volunteering
 - Template content: Highlights student life beyond academics.
 - How to customize:
 - Add details on student-led events, clubs, NGOs, and volunteer work.
 - Showcase photos from past events and testimonials from student leaders.
 - Extra tip: The highlight should be on the community.

- ACS example: Mentions student-run events such as coding camps and hackathons.
- Slide 23: Specialized labs and research projects
 - Template content: Placeholder for research projects.
 - How to customize:
 - Include specialized research labs and key faculty-led projects, and their focus areas.
 - Showcase faculty projects with real-world impact.
 - Extra tip: Include live demos or videos of laboratory experiments.
 - ACS example: Showcases AI research labs and IoT development.
- Slide 24-25: Career opportunities
 - Template content: General information about the tech industry and career opportunities.
 - How to customize:
 - Add job placement statistics for graduates.
 - Showcase internships, mentorships, and career opportunities.
 - Mention local and international tech companies hiring graduates.
 - Mention industry collaborations.
 - Extra tip: If available, present salary expectations for different career paths.
 - ACS example: Show logos of companies that have collaborations with the faculty (e.g., Bitdefender, Microsoft, Orange).
- Slide 25: Admission process
 - Template content: General "Admission" heading with placeholders.
 - How to customize:
 - Clearly define the admission criteria, including entrance exams.
 - Highlight alternative pathways (e.g., Olympiad winners, direct admission).
 - Provide important deadlines and official links.
 - Include a QR code to the admission website.
 - Extra tip: Offer a checklist for high school students to prepare for HEI admissions.
 - ACS example: Details the weighted scores of entrance exams and interview processes

Faculty/Higher Education Institution Presentation Template

Images of each of the slides from the presentation slide deck template are included in this appendix for an example.

[Insert HEI logo here]

[Insert Higher Education Institution
(HEI) name here]


[Insert HEI website, email, socials here]



SAMPLE



 acs.pub.ro

 fb.com/automatica.calculatoare


NCI
Coláiste Náisiúnta na hÉireann | National College of Ireland

www.ncirl.ie

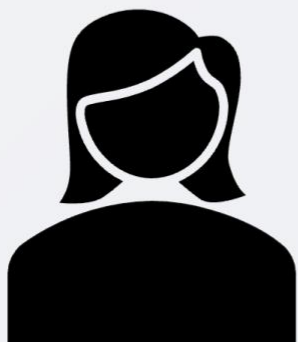


SAMPLE

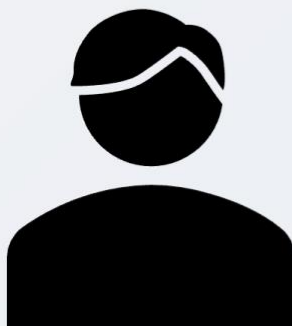


Presentation team

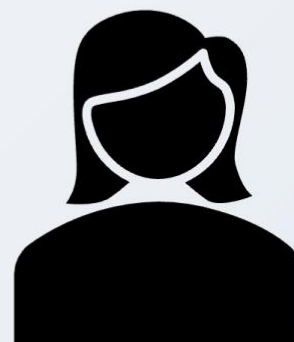
Insert HEI Logo here



Name 1



Name 2



Name 3



Name 4



INTRO High School → HEI



Insert HEI Logo here

Welcome to **<insert HEI name>**

4



ENGINEER

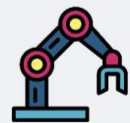


Faculty/School Name

Insert HEI Logo here



Automatic control



Robotics



Video & Audio processing



Medtech



Factory automatization



Machine Learning



Transport automation



WebDesign



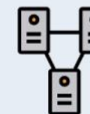
Hardware Design



Data Acquisition



Embedded Programming



Data Base

Insert HEI Logo here



Internet of Things



Machine Learning



Computer Networking



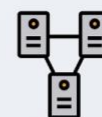
Operating Systems



Computer graphics



Cyber Security



Data Base



Cloud & Big Data



Robotics



RPA



Embedded Programming



WebDesign



Not just “programming”

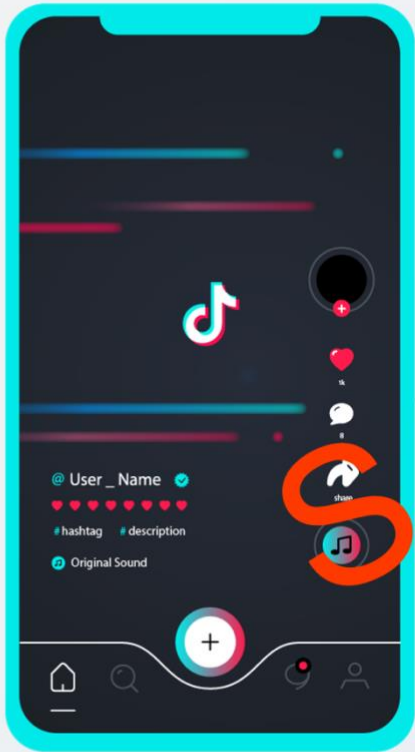
[Showcase of real-life systems where the topics that students learn in the institution are applied]

[How to customize:

- Present real-life systems and describe how the things that students learn in the institution can lead to the implementation of such large-scale systems.
- Extra tip: Provide examples of real-world applications of each specialization (e.g., cybersecurity in protecting online transactions).]







SAMPLE



| Mobile App development

| Scalability & Reliability

| Human Computer Interaction



| UX & UI

| Video compression & processing

| Recommendation algorithms



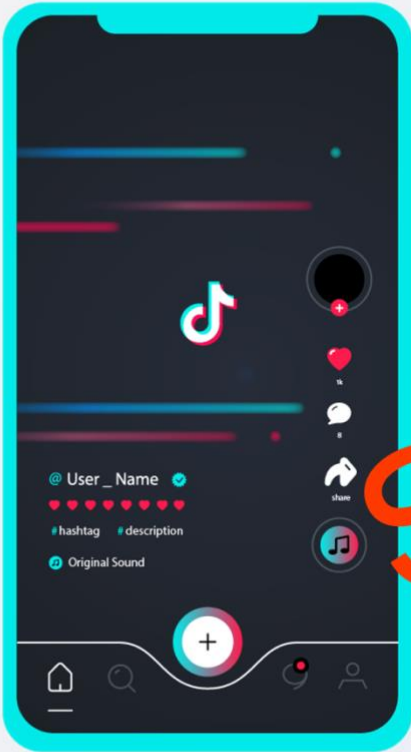
|| Cyber Security

| Storage & network optimization

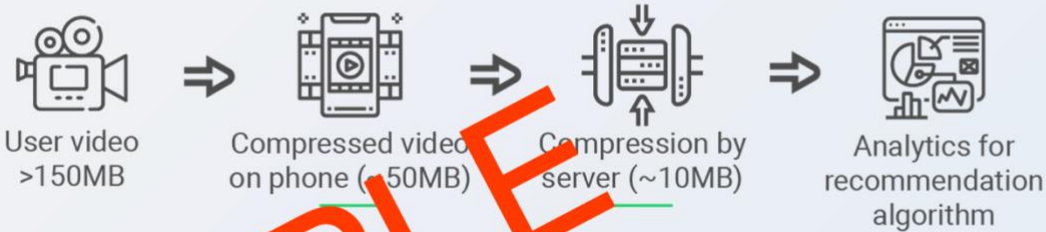
| Web development

|| DevOps (System Monitoring & Maintenance)

- | Calculatoare și Tehnologia Informației
- | Ingineria Sistemelor - Automatică și Informatică Aplicată



Video cloud infrastructure

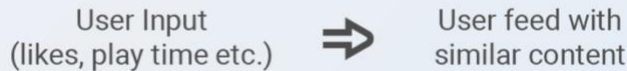


Network



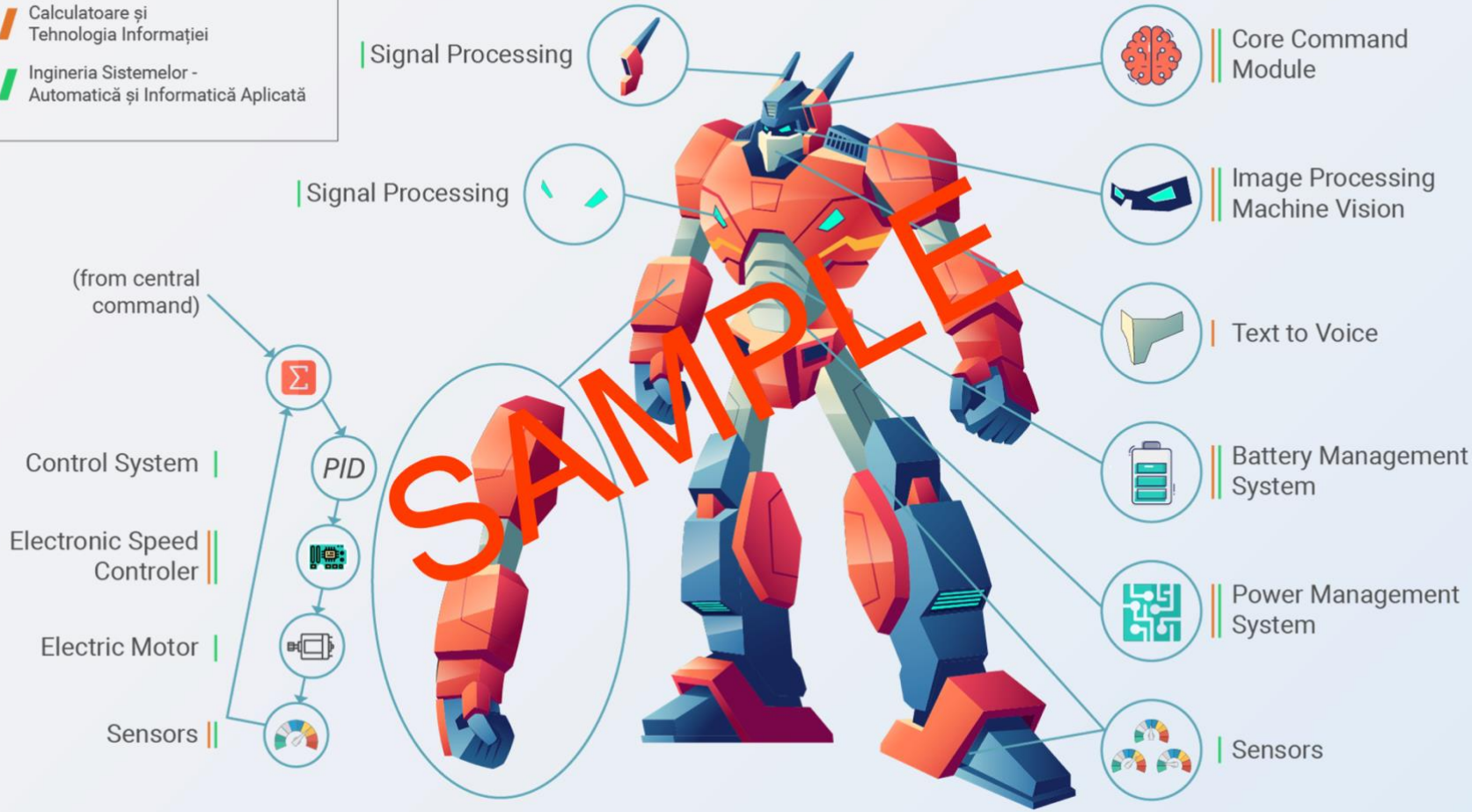
- | Cyber Security
- | Cloud Development
- || Distributed Database

| Machine Learning – for recommendations & user insights



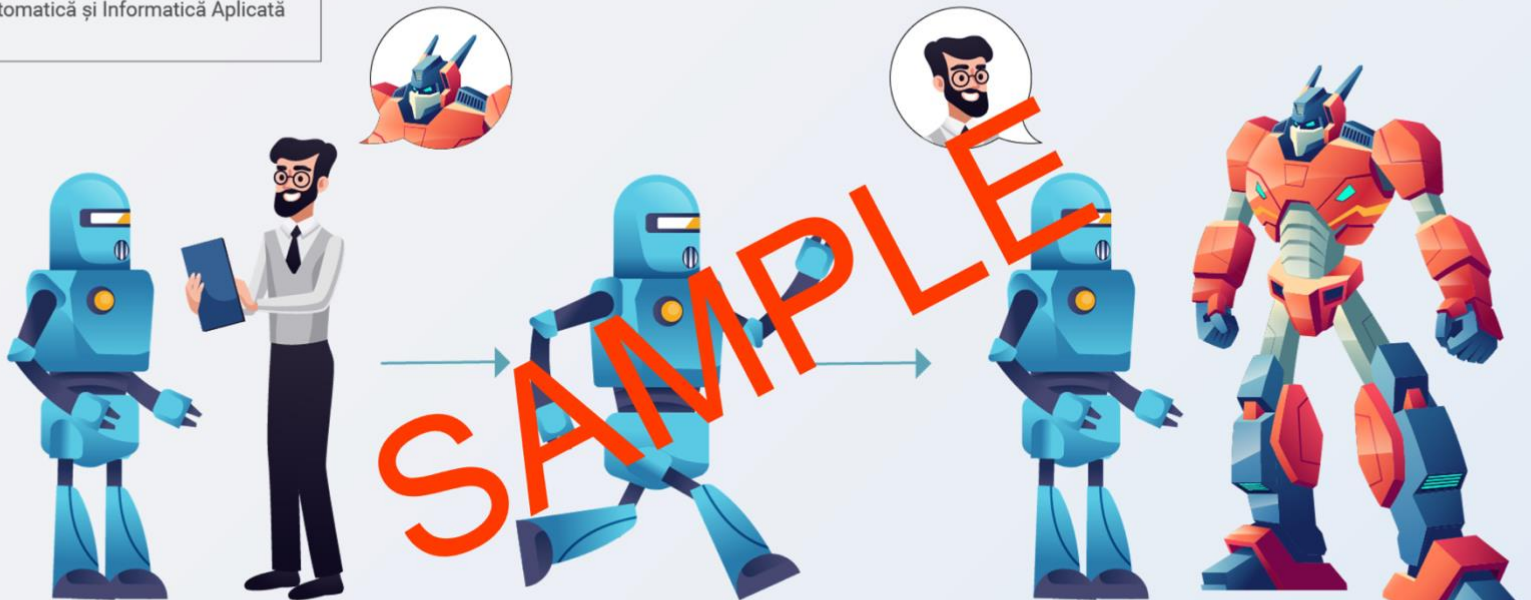
- | Calculatoare și Tehnologia Informației
- | Ingineria Sistemelor - Automatică și Informatică Aplicată

- | Calculatoare și Tehnologia Informației
- | Ingineria Sistemelor - Automatică și Informatică Aplicată



- Calculatoare și Tehnologia Informației
- Ingineria Sistemelor - Automatică și Informatică Aplicată

Machine Learning & Artificial Intelligence



Human-Computer Interaction

- Localization
- Path Planning
- Real Time Feedback and Control

Network Communications



Opportunities





Competitions • examples

examples



- examples

Summer Schools





SAMPLE
Fun activities

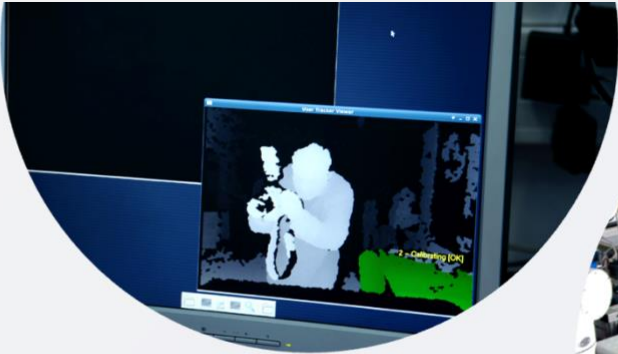




SAMPLE

Volunteering





P·R·E·C·I·S

SAMPLE

Research labs
Research projects



Opportunities in [Country/City] for
[HEI + Programme(s)] graduates

HEI
LOGO

TOP HIRING COMPANIES HERE

Opportunities in IT&C & Automation in Romania





Admission

[Insert HEI logo here]

Thank you!

[Insert HEI name here]

[Insert HEI website, email, socials, QR code here]