Cybersecurity Seminars @ UTCN
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UNIVERSITATEA TEHNICĂ DIN CLUJ-NAPOCA
MEMBER OF EUT+ EUROPEAN UNIVERSITY OF TECHNOLOGY

Lessons Learned - Google.org Cybersecurity Seminars Program



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Agenda

- Google.org Cybersecurity Seminars - Grants
- TUCN proposal
- Communications (ETTI) approach
  - Student Recruitment
  - Course Topics
  - LCO engagement
- Results (so far)
- Lessons Learnt

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Google.org Cybersecurity Seminars

- Google.org grant competition
  - Announced end of 2023 with TUCN proposal submitted in Feb 2024
  - Universities in 8 European countries initially
  - Support and guidance provided via Virtual Routes

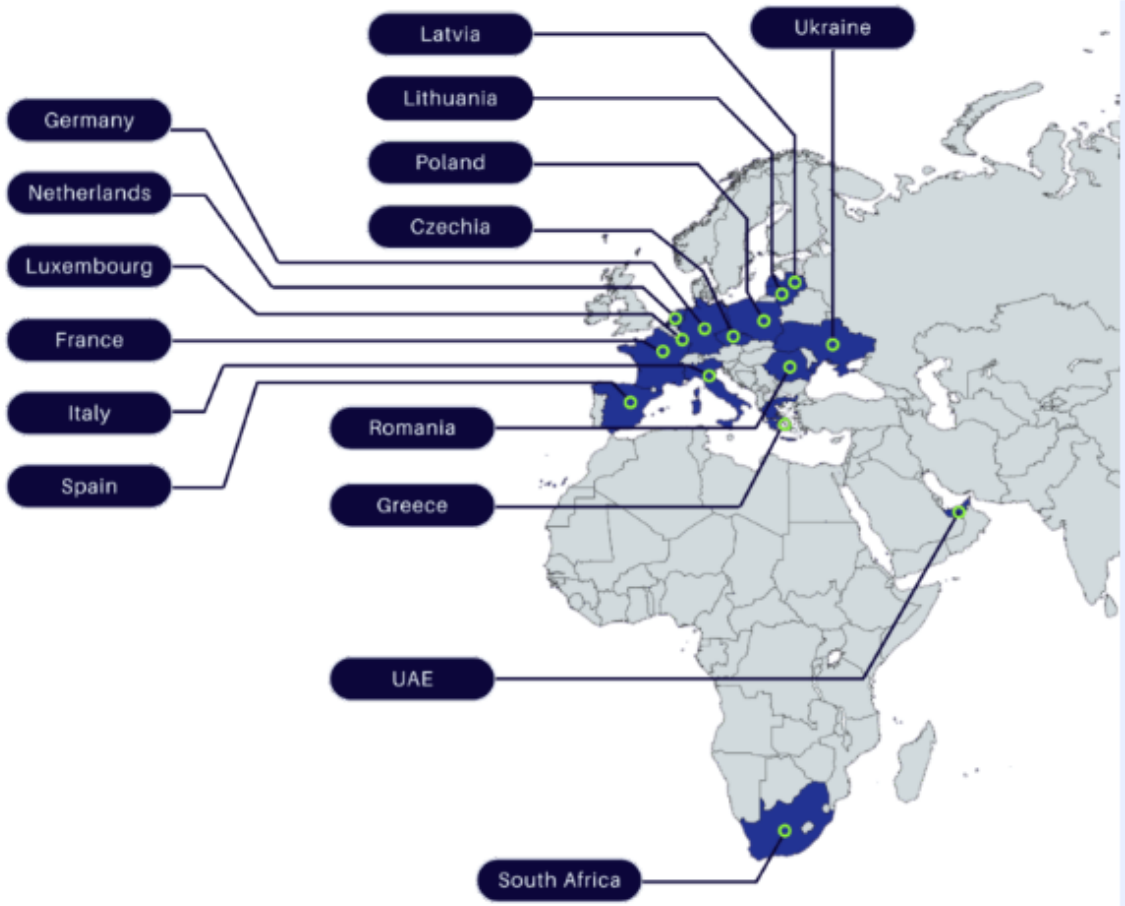
- Goals:
  - Develop new cybersecurity courses
  - Grow future cybersecurity specialists (125 students)
  - Improve cybersecurity for Local Community Organizations (125 LCOs) by working with students

TUCN grant proposal

- Great collaboration between departments / faculties.
- Courses with different complexity:
  - Computer Science (CS): emphasis on cybersecurity tools and forensics.
  - Automation: focus on IoT/CPS and industrial cybersecurity.
  - Communications (ETTI): focus on security basics relevant for LCOs and data protection.
- Students: scholarships, cybersecurity conferences.

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Google.org Cybersecurity Seminars



WHO WE SUPPORT

This program supports selected higher education institutions across Europe, Africa and the Middle East. Higher education institutions that are not universities can take part, as long as their primary purpose is education and most of their courses are available to the general public. Examples of such higher education institutions include polytechnic institutes, professional or vocational colleges, or military or diplomatic academies.

All supported institutions – universities or other higher education institutions – must be nonprofits. In the Netherlands, Virtual Routes implements the program directly, and you can read more about our Dutch program **here**.

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Cybersecurity Seminars @ TUCN

- Three departments involved
  - Computer Science, Automation, Communications (ETTI)
  - each one is running its course with a particular syllabus
  - try to have a common overall approach and goals
- Typical structure
  - 2h lecture/week – onsite
  - 2h lab work/week – onsite
  - 1h project-based work/week – onsite / online / LCOs
- Each course ran for 12-13 weeks

Communications (ETTI)- Approach

- Teaching staff
  - Assoc. Prof. Daniel ZINCA, PhD
  - Assist. Prof. Tudor BLAGA, PhD
- Schedule
  - Series 1 – 2nd semester 2024-2025 (20 students) - delivered
  - Series 2 – 2nd semester 2025-2026 (20 students)
- Project steps:
  - Student recruitment
  - Course topics
  - LCO engagement

Communications (ETTI) – Student Recruitment

- Recruitment
  - Live presentations at bachelor and master courses
  - Social media posts
  - Posters
- Engagement numbers
  - 120 students interested in the opportunity
  - 65 students applied
  - 22 students selected for series 1
- Selection process based on:
  - Academic results
  - Interview (top 30 candidates)

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Communications (ETTI) – Course

Focus:

- Basic security principles
- Key security controls for LCOs
- Hands on experience during labs

Guest speakers from industry:

- Romeo ANDREICA – CISO @ Arobs Group
- Janos Gergo SZELES – Senior Security Researcher @ BitDefender
- Anett STOICA - InfoSec Strategy & Awareness Lead @ Flutter UKI

Cybersecurity conference – Bsides Transylvania

TOPICS covered

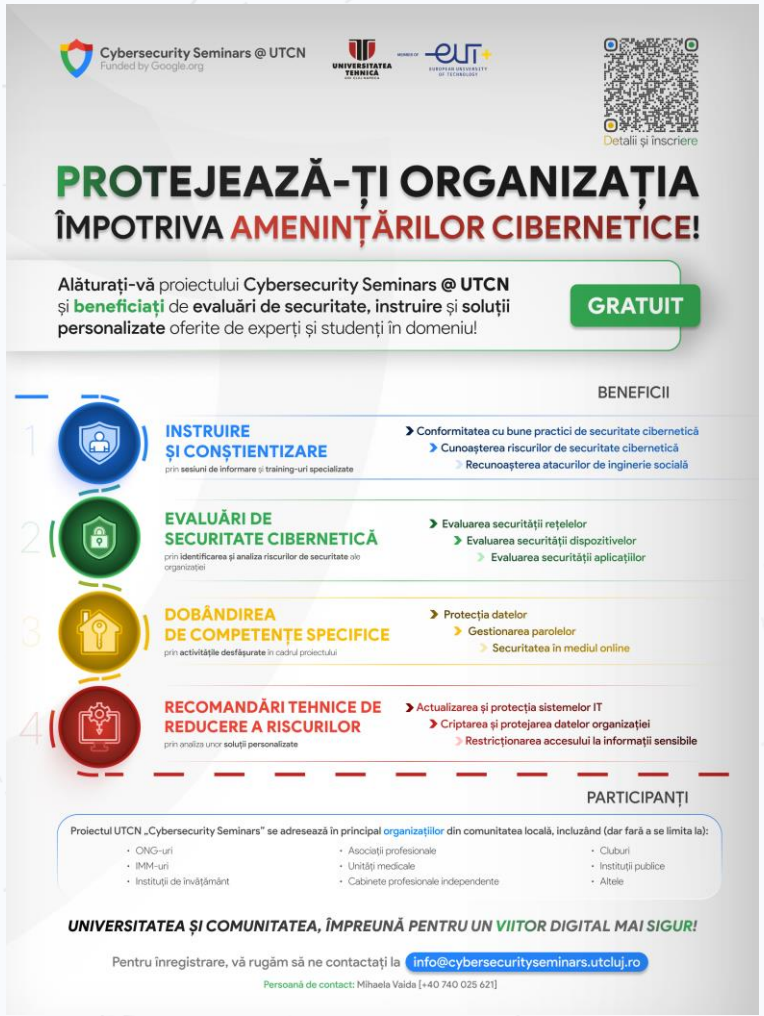
- Introduction to Cyber Security
- Data Security (Encryption and Backups)
- Data Privacy (GDPR)
- User Accounts and Passwords
- Social Engineering
- Windows Security
- Cyber Security Assessments
- Vulnerability Management
- Malware
- Mobile Device Security
- Network Security

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LCO Engagement

- Most challenging part of the program
- Find interested LCOs:
  - ISJ Cluj
  - Compartimentul pentru Relatia cu Mediul Socio-Economic - UTCN
  - Social media posts
  - Student recommendation
  - TUCN alumni



LCO Services

- Strict terms and conditions
  - Recommendations provided
  - No hands-on support, involvement allowed

- Services
  - Security Assessment (questionnaire based)
  - Security Training and Awareness sessions
  - Security best practices guides, policies & procedures
  - Security recommendations

LCO Good Practices

- Mentorship model: senior/junior student collaboration.
  - Student worked in teams -> each team is responsible for several LCOs
  - Collaboration between teams to prepare presentations on cybersecurity topics
  - Each team was mentored by one of the instructors
- Instructors provided mentorship through each step of the LCO engagement, from evaluation to service delivery.
- Open educational materials for future cohorts.
  - cybersecurity evaluation questionnaire (about 100 questions)
    - based on established compliance standards like CIS, CISSP
  - a preparation book (about 70 pages)
    - explains questions in questionnaire and the motivation behind them

LCO Challenges

- Most were related to LCO collaboration
  - difficult to get our project visible
  - unmatched expectations
  - delays regarding signing documents, allocating time, responding
  - our strategy:
    - use the university's communication channels
    - lots of patience and resilience
    - adapt to each LCO's need and availability

Results: Students

- CS:
  - 20 students,
  - 6 teaching staff;
- Automation:
  - 35 students,
  - 7 teaching staff;
- Communications (ETTI):
  - 22 students,
  - 2 teaching staff;

77 students trained

Results: LCOs

- 10 NGOs (*Non-Governmental Organizations)*
- 9 Hospitality industry (HoReCa)
- 32 SMEs
- 26 Educational institutions (public and private)
- 3 Public health institutions
- 4 Individual professional practices

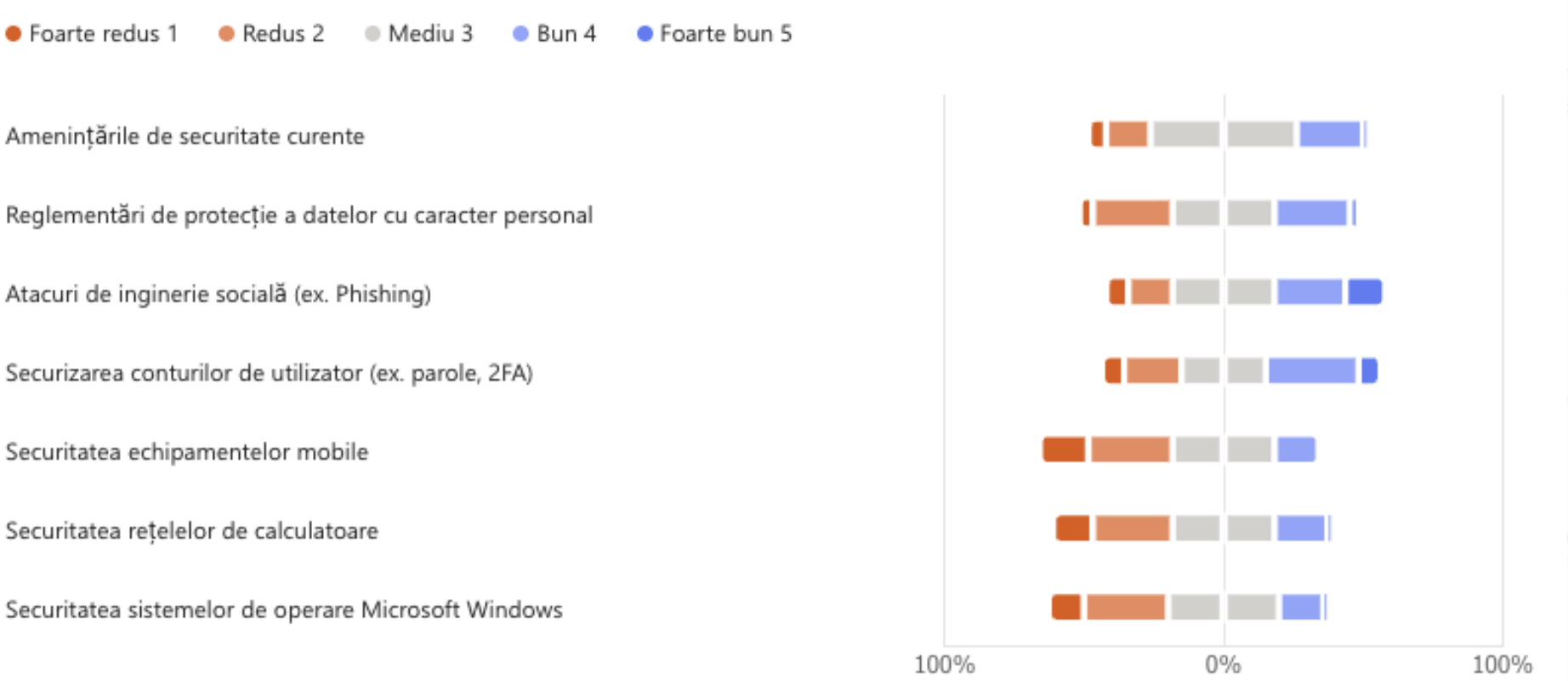
77 LCOs with improved cybersecurity

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Results: Initial Self-Assessment



Amenințările de securitate curente

Foarte redus 1	6.3%
Redus 2	15.9%
Mediu 3	52.4%
Bun 4	23.8%
Foarte bun 5	1.6%

Reglementări de protecție a datelor cu caracter personal

Foarte redus 1	4.8%
Redus 2	28.6%
Mediu 3	36.5%
Bun 4	27%
Foarte bun 5	3.2%

Atacuri de inginerie socială (ex. Phishing)

Foarte redus 1	7.9%
Redus 2	15.9%
Mediu 3	36.5%
Bun 4	25.4%
Foarte bun 5	14.3%

Securizarea conturilor de utilizator (ex. parole, 2FA)

Foarte redus 1	7.9%
Redus 2	20.6%
Mediu 3	30.2%
Bun 4	33.3%
Foarte bun 5	7.9%

Securitatea echipamentelor mobile

Foarte redus 1	17.5%
Redus 2	30.2%
Mediu 3	36.5%
Bun 4	15.9%

Securitatea rețelelor de calculatoare

Foarte redus 1	14.3%
Redus 2	28.6%
Mediu 3	36.5%
Bun 4	19%
Foarte bun 5	1.6%

Securitatea sistemelor de operare Microsoft Windows

Foarte redus 1	12.7%
Redus 2	30.2%
Mediu 3	39.7%
Bun 4	15.9%
Foarte bun 5	1.6%

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Results: Final Self-Assessment



Amenințările de securitate curente

Bun 4	45.5%
Foarte bun 5	54.5%

Reglementări de protecție a datelor cu caracter personal

Mediu 3	4.5%
Bun 4	81.8%
Foarte bun 5	13.6%

Atacuri de inginerie socială (ex. Phishing)

Bun 4	13.6%
Foarte bun 5	86.4%

Securizarea conturilor de utilizator (ex. parole, 2FA)

Bun 4	31.8%
Foarte bun 5	68.2%

Securitatea echipamentelor mobile

Mediu 3	13.6%
Bun 4	77.3%
Foarte bun 5	9.1%

Securitatea rețelelor de calculatoare

Mediu 3	13.6%
Bun 4	40.9%
Foarte bun 5	45.5%

Securitatea sistemelor de operare Microsoft Windows

Mediu 3	31.8%
Bun 4	45.5%
Foarte bun 5	22.7%

Lessons Learnt - Students

- A lot of interest among students for cybersecurity
  - Over 65 applicants for 20 seats
- Learning
  - Great engagement during course & labs
  - Interest for guest speakers and available roles in the industry
  - Cybersecurity conference learnings
- Students eager to help LCOs improve cybersecurity posture

Lessons Learnt - LCOs

- Limited understanding of cybersecurity risks and importance of cybersecurity
- LCOs most interested - ones that at one point in time have suffered a significant cybersecurity incident
- Great engagement with educational institutions
- Hard to prioritize cybersecurity even when support is freely available due to other priorities, like challenges of day-to-day operation of the business
- More initiatives /projects needed to help LCOs

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