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Erasmus+

CERTOCLAV
Since 50 years.

**"INCOMING" IZMENJAVA IN NAJVEČJE MEDPREDMETNO POVEZOVANJE DOSLEJ – ALEK PIKL, CERTOCLAV STERILIZER GMBH, AVSTRIJA IN NEMČIJA, 26. 3.–28. 3. 2019**

V dneh od 26. 3. do 28. 3. 2019 smo v okviru projekta izmenjav programa Erasmus+ gostili strokovnjaka s področja elektrotehnike Aleka Pikla, ki živi, študira in dela v Nemčiji. Kot projektni sodelavec v okviru podjetja CERTOCLAV (http://www.certoclav.com) iz Avstrije (nekoč s podružnico v Münchnu) je študentom na zanimiv način približal tako stroko, terminologijo v angleškem ter nemškem jeziku in poslovne navade v Nemčiji, s priporočili na podlagi lastnih izkušenj, kako si najti službo v tujini.


Dvodnevni **program predavanj** je vseboval naslednje tematike:

1) Izgradnja avtonomnega dirkalnika od 0 do 100 na tehniški univerzi v Münchnu (prikaz izgradnje avtonomnega dirkalnika za dirko Formula Student Germany v Hockenheimu, High-level overview delovanje in design, HW in SW implementacija, komunikacija in možnosti dela na projektu).

2) Connected Cars – V2X (trenutni razvoj v industriji, npr. Intel, Fortiss itd., značilnosti uporabljenih standardov, potrebna uporabna znanja za delo na tem področju in predstavitev lastnih izkušenj.

3) Predstavitev študija in dela v tujini (praktične informacije in napotki na osnovi lastnih izkušenj).

Predavanj se je udeležilo skupaj 87 udeležencev, bodočih inženirjev mehatronike, informatike in elektroenergetike ter predavateljev. V okviru rednih seminarskih ur so bile na podlagi uporabljene strokovne terminologije v nemškem in angleškem jeziku obdelane tematike s

področja sodobnih in tehnološko naprednih mehatronskih sistemov (IoT), elektronskih naprav, računalniških strojnih in aplikativnih sistemov. Poudarjene so bile značilnosti projektnega dela, vpliv in pomen primerne organizacije dela in komunikacije med udeleženci na projektu, značilnosti poslovnega sporazumevanja v Nemčiji in podani nasveti, kako pridobiti delo v tujini.

Tako smo izvedli ne le uspešno "incoming" izmenjavo znanj in izkušenj iz tujine, temveč tudi največje medpredmetno sodelovanje doslej, saj je bilo vpletenih kar 6 predmetnih področij višješolskega izobraževanja: MEH, OET, RAI, ANJ, NEM, PKV.

**V nadaljevanju je podrobneje opredeljen terminski plan "incoming" izmenjave, ki je bil izveden v celoti.**

**Zapisala: Nastja Beznik, univ. dipl. org.**

**Detailed plan:**

1. 26. 3. 2019: Introductory meeting with the university principals and lecturers; visit of the laboratories, lecture rooms with didactic equipment; discussion about the use, advantages and disadvantages of the equipment;
2. 27. 3. 2019: Lecture for students of mechatronics, full-time study;
3. 28. 3. 2019: Lecture for students of power engineering and informatics, full-time study; final meeting with the principals and lecturers about the effects of this exchange and discussion about the lectures; investigation of further possible opportunities to cooperate with CertoClav Sterilizer GmbH and help to find new partners for internation cooperation in Germany and Austria.

**Content of the teaching programme:**

Everything is becoming more and more connected by the year. Smart Home, connected vehicles, even smart coffee machines. Those are only some advances in the consumer sector, however we see great opportunities to also improve the "rigid" industries such as healthcare. CertoClav Sterilizer GmbH is a proven producer of Autoclaves, know for its reliability and durability, and based on our knowledge of the industry and its strict standards we have been successfully making our products more and more connected.

**The first part:** This lecture series is going to be all about how to develop IOT products to be reliable, which is of the uppermost importance in our branch. Based on examples from our product development, in the first part, we will cover:

- The development process: from Idea to Prototype;
- How to satisfy customer or personal needs: User Centric Design;
- Introduction in different communication standards (the foundation if every IOT
- product) with advantages and disadvantages;
- Introduction in software development and project management.

After the lecture series, the students will be able to objectively evaluate the quality of their IOT idea and start developing it in a structured process with a good foundation in software development and project management, which will guarantee their satisfaction success.

**The second part** will be an introduction into connected vehicles (V2X) and autonomous driving. With experience in developing products (TUfast Driverless, Fortiss GmbH, Intel GmbH) in this field, I will present the current state of development and challenges that have to be tackled on our way to autonomous driving. V2X (Vehicle-To-Everything) can be seen as the big brother of IOT with additional extensive safety challenges and demand for reliability as human lives are involved.

- What is V2X;
- Which standards have been established and why? C-V2X vs 802.11p;
- Use cases;
- Challenges and current state of development;
- Big players in the game and career opportunities.

**In the third part**, we are going to talk about the opportunities abroad, career and educational.

- Where to find internships, jobs, etc;
- What is important in an application;
- How to write the letter of motivation;
- Master programs abroad: advantages and disadvantages.