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Electronics & Electrical Engineering study field overview report

prepared by
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This summary report contains the observations and comments formulated during onsite visits of the following programmes implemented at Higher Educational Institutes (HEI) in the periods from 24 February to 4 March, from 22 March to March 29, and from 27 April to 2 May.

Kaunas University of Technology:

- Electronics Engineering (BA)
- Electronics Engineering (MA)
- Robotics (BA)
- Robotics (BA) (Panevėžys faculty)
- Control Technologies (MA)
- Control Technologies (MA) (Panevėžys faculty)
- Electrical Engineering (BA)
- Electrical Power Engineering (MA)
- Electronics Engineering (BA)
- Electronics Engineering (MA)

Kaunas Technical College (Kaunas University of Applied Engineering Sciences)

- Electric Energy (BA)

Klaipėda University:

- Electronics Engineering (BA)
- Electrical Equipment and Automatics in Industry (MA)
- Ship Electrical Equipment and Automatics (MA)

Šiauliai University:

- Electrical Engineering (BA)
- Electronics Engineering (BA)

Vilnius Gediminas Technical University:

- Electronics Engineering (MA)

The visited universities and examined programmes play an important role in educating bachelors and masters in electronics and electrical engineering (including robotics and other industrial applications experts) for the demand of the national and regional industry.
The experts for these visits were: Prof. Edmund Handschin, Ass. prof. dr. Marios Kasinopoulos, Prof. Dr. Tilmann Krueger, Prof. dr. Toomas Rang, Prof. dr. Roma Rinkevičienė, Prof. dr. Mart Tamre, Prof. dr. Juozas Vaitkus, Prof. dr. Liudmila Zinchenko, Dr. Olev Martens, Dr. Rolandas Urbonas, Dr. Artūras Klementavičius, Mr. Gražvydas Jakaitis, and Mr. Paulius Simanavičius.

1. All of the HEI had been visited three years ago, and temporary accreditation for three years had been given to these study programmes, apart from a few new ones. However it was recommended to Klaipėda University that the two programs as Electrical Equipment and Automatics in Industry (Electrical Engineering) (MA) and as Ship Electrical Equipment and Automatics (Electrical Engineering) (MA) be merged together. This was however not done.
2. The recommendations suggested during our previous evaluation hade been implemented in connection with most of the visited universities and programs (see however paragraph 1). The implemented changes have led to substantial improvement of some of the study programmes. In some cases however full accreditation was not yet possible and thus again preliminary accreditation was suggested. In the case of Klaipėda University Ship Electrical Equipment and Automatics (Electrical Engineering) (MA) we are very much in doubt about any continuation of the programme in this form and thus the experts decided to give a negative evaluation, following with SKVC giving this programme non-accreditation. We maintain overview that merging this program into Electrical Equipment and Automatics in Industry (Electrical Engineering) (MA) would offer a possibility to save the specific knowledge involved with this programme in the form of a sub-specialization. Until this merger and re-establishment of the programme is completed in three years from now there is no chance for full accreditation of the latter.
3. The period of three years between the two evaluations is in most cases too short to assess the sustainable effects of the implemented changes; but the considerable efforts undertaken by the staffs and students of these universities and highly appreciated, and point in most cases towards sustainable educational processes with programmes at an

internationally acceptable level. There are some positive examples of substantial improvement of the programme study since last three years accreditation that was extended now to six years accreditation: Kaunas University of Technology – Electrical Engineering (BA) and Electrical Power Engineering (MA); Šiauliai University – Electronics Engineering (BA)

4. An excellent cooperation between Kaunas University of Applied Engineering Sciences and Kaunas University of Technology can be considered as a kind of model in the country. Coexistence and symbiosis and common work for the region in an ideal situation very beneficial at large for the Country
5. The staff turnover has much been improved during the last three years at all examined institutions. A clear and well defined strategy has been adopted to support young scientists in their academic careers, there have been many new PhD degrees earned, and also promotions to the professorial rank have been completed.
6. The international mobility of the teaching staff must be still improved. Often participation in international mobility is restricted to a small percentage of the stuff and is sometimes formal; and participation at major international scientific events, especially overseas conferences is still scarce. The international academic exchange activities by the teaching staff are growing; however they are quite unbalanced with respect to activities in Turkey. The international exchange of students – at least in the full time study programmes – must be definitely further developed.
7. More efforts should be put to encourage staff to participate in international research and educational projects. This will considerably increase mobility and a number of conference papers and article in journals published abroad. It would be encouraging to organize information workshops about Erasmus + and Horizon 2020 programs and distribute appropriate printed and/or electronic information to staff and students. Special actions at the University level are needed to support a participation in the conferences, training abroad etc.
8. The potential of female students is not yet adequately exploited. Greater efforts should be made to make the study programmes in electronics (and electrical) engineering more attractive to them.
9. The research activities of the teaching staff must be further developed. While especially at KTU the publication activities have increased, and there are more indexed and even impact factor publications. The majority of the results are still disseminated with-

in Lithuania, the Baltic region or Eastern Europe. The participation in international research programmes particularly sponsored by the EU is far below the expected level.

10. The modernisation of the laboratories has made a substantial progress during the last three years. In some cases we found very well equipped laboratories at high international standard. These efforts must be continued in order to uniformly reach the necessary European level.
11. The scheduling of master courses in the afternoon and evening - due to the fact that many students have to work - is not compatible with European standards, even though many students claim that their work do not interfere with their studies. The MA students should be financed by industry through specific scholarships or financed by the university through research grants.
12. The management of the study programmes cannot yet be firmly assessed because there is not yet sufficient practical experience with the adopted management procedures.
13. In some programme studies (for example Electrical Power Engineering at Kaunas University of Technology) the number of learning outcomes is quite high. A more concise list of learning outcomes would be more appropriate.
14. It may be worth to consider providing a licence up to 1kV an option for the electrical engineering studies in the Country.