STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Kauno technologijos universiteto

TELEKOMUNIKACIJOS SISTEMŲ STUDIJŲ PROGRAMOS (62401T207, 621H64002) VERTINIMO IŠVADOS

EVALUATION REPORT OF *TELECOMMUNICATIONS SYSTEMS* (62401T207, 621H64002) STUDY PROGRAMME

at Kaunas University of Technology

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Išvados parengtos anglų kalba
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DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	***Telekomunikacijų sistemos***
Valstybiniai kodai	62401T207, 621H64002
Studijų sritis	Technologijos mokslų
Studijų kryptis	Elektronikos ir elektros inžinerija
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Antroji
Studijų forma (trukmė metais)	Nuolatinė (1.5), ištęstinė (2.5)
Studijų programos apimtis kreditais	90
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Telekomunikacijų inžinerijos magistras
Studijų programos įregistravimo data	2007-02-19 Nr. 225

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	***Telecommunications Systems***
State code	62401T207, 621H64002
Study area	Technological Sciences
Study field	Electronic and Electrical Engineering
Kind of the study programme	University Studies
Study Cycle	Second
Study mode (length in years)	Full-time (1.5), part-time (2.5)
Volume of the study programme in credits	90
Degree and (or) professional qualifications awarded	Master of Telecommunication Engineering
Date of registration of the study programme	2007-02-19 Nr. 225

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I. INTRODUCTION

An external evaluation of the Master study programme of Telecommunications Systems from Kaunas University of Technology, has been conducted by an international expert group consisting of Prof. Dr. Palle Jeppesen (leader of the group), Prof. Dr. Igor Kabashkin, Prof. Dr. Luis Torres, Mr. Edvardas Linkevičius and Mr. Andrius Kučinskas. The group performed an on-line analysis of the self-evaluation report before the visit, and held meetings during the visit with the administrative staff of the Faculty of Telecommunications and Electronics, the workgroup in charge of the preparation of the self-evaluation report, teaching staff and students of the study programme, as well as recent graduates and employers.

The Centre of the Studies Quality Assessment (SQAC) conducted a first official external evaluation of the Telecommunication study programme in 2004 whose outcome was made available to the international expert group. No further external evaluation has been carried out since then.

The main objectives of the international expert group have been to assess the information provided in the self-evaluation report, as well as to gather more facts and evidences in the on-site visit in order to perform a fair evaluation of the programme.

The international expert group would like to acknowledge the help and all facilities provided by the faculty and staff of the Faculty of Telecommunications and Electronics to perform the evaluation. The international expert group would like to acknowledge as well all the effort made by Centre for Quality Assessment in Higher Education and in particular Mr. Pranas Stankus who has allowed a very smooth evaluation process.

II. PROGRAMME ANALYSIS

1. Programme aims and learning outcomes

The Telecommunications Systems Master programme of KTU has been taught since 2002 at the Faculty of Telecommunications and Electronics. The programme lasts one and a half years and consists of 90 credits. A part time option is also offered, although during the period being assessed, these part time studies were not organized.

The aim of the Telecommunications Systems Programme is directly related to the Decree of the Government of the Lithuanian Republic No. 670 ‘On Implementation and Coordination of Lisbon Strategy in Lithuania’, June 20, 2005.

The aim of the program is to prepare students, that have deep theoretical and technological knowledge of telecommunication engineering and are ready for advanced engineering careers or Ph.D. studies; are able for critical analysis of systematically integrated knowledge, possess scientific investigation skills and are able to work in interdisciplinary teams that develop innovative products, services or are carrying out scientific research projects.

A very good and detailed study has been made of the needs of the public sector and labour market. Many questionnaires have been sent to many telecommunication Lithuanian companies to find out about needs of the national labour market. In addition, a complete search study on the needs of the European market in the Telecommunication sector has been carried out as well. However, in order to broaden the future market potential of actual Lithuanian master graduates

and as there is no doubt about the importance of the globalization telecommunications market, the study should have taken into account the global market beyond the European perspective as well. Some hints about the research needs in both the Lithuanian and European context would have helped to focus on this area. Vision about possible labour market needed in emerging countries would have been welcomed. The needs of these global markets should be taking into account to redefine the programme aims and learning outcomes in the mid-term future.

Although it is rather difficult to find a perfect match with other universities, a very good comparison has been made against European universities offering related Master programmes such as KTH Royal Institute of Technology, Tampere University of Technology and Linköping University, among others. The inclusion of some US universities, such as The Massachusetts Institute of Technology and Purdue University in the study would have provided an added value.

In this context, the programme aims and learning outcomes are clearly defined. They are also publicly accessible as shown in some leaflets and web page of the University.

In addition, KTU also offers a second Master programme under the name of Telecommunications that lasts 2 years and consists of 120 credits. According to the self-evaluation report, the Telecommunications Systems programme is orientated towards the design and exploitation of telecommunication networks and services, while the Telecommunications programme is mainly orientated towards investigation, application and implementation of technologies and services in telecommunication networks. However, from the interviews with staff and students, and considering the study subjects of both programmes, it has been noted that both Master programmes have overall quite similar objectives and contents and many overlapping courses. The first year is common to both.

The existence of both programmes with quite similar aims and objectives may mislead students when selecting the programme to study. In addition, to have two such programmes implies a duplication of many resources that could be avoided. On the other hand, it is not usual in the international context to have two similar programmes in the same area offered by the same Faculty. It is believed that only one Telecommunication Master programme would contribute to unify synergies, to have more students registered and to develop study subjects that would be very attractive to both, national and international students. For all these reasons, a very strong recommendation to unify these two programmes is given.

2. Curriculum design

The curriculum design of the Telecommunications System master study programme is based on 90 credits. The programme offers full-time and part-time options, although during the period being assessed, these part-time studies were not organized. The curriculum design meets all legal requirements.

Study subjects are divided into four categories: common compulsory study subjects (36 ECTS credits), electives study subjects (18 ECTS credits) and individual research (36 ECTS credits). Theoretical and practical teaching according to the course schedule is implemented. Study programme is in general coherent but some remarks would need to be taken into account as noted in the following.

It can be appreciated from the courses content that a few subjects are taught at an introductory level that most likely should have been introduced in the first-degree program. In particular the course Signal Modeling and Processing in Telecommunications is taught at a rather basic level. This is due to the fact that some students from different universities and with

different telecommunication backgrounds are accepted in the programme. Although these students are required to have basic undergraduate bridging courses if needed, there is some risk to jeopardize the content needed in the Master Telecommunication Systems programme as the students might not have time to be exposed to more advanced contents.

Some names of the courses are misleading, as they may not reflect the actual contents of the subjects or distinguish between courses. This applies in particular to *Security of Electronic Communication Services* and *Security and Protection of Communications and Electronics Means*. The name *Innovation and Innovative Technologies* is misleading as it is mainly focused on entrepeneurship. The name *Next Generation* is used two times and may be also misleading. In the context of *Next Generation* it is not clear what the *Actual Generation* is and where it is taught. Given the importance of Multimedia Communications, some courses in this area may give an added value to the programme, probably as elective subjects.

Regarding elective modules, it seems too risky to have optional matters already in the first semester, as the students may not yet be familiarized with the specifics of the degree.

The programme as is established now, may not be fulfilling the expectations of the students who want to enroll. Prove of this is that, according to the self-evaluation report, only 29 students chose Telecommunication Systems as first wish option during the period 2011/2012 (21 were finally accepted). Another reason for this low number may be that there is another Master programme competing to attract students with very similar contents and objectives.

Even though the option for Telecommunication Engineering courses worldwide is declining, 29 is a low number and some measures should be taken to attract more students.

As a general comment, it can be stated that the curriculum design is quite good. However, among other actions, changes in the programme as suggested above may prove useful to increase the attraction of the studies for both national and international students.

3. Staff

An average of 15 faculty staff members are involved in the Telecommunications programme. Most of them hold a Ph.D. degree that assures a high level academic staff. In the particular case of the Faculty of Telecommunication and Electronics, half of the staff is composed of young professors and the other half of older professors. The staff providing the programme meets the legal requirements. The teaching staff turnover is quite acceptable.

Every five years the lecturers' qualifications are determined by their certification in accordance with the University Senate decree No 56 *Lecturing and research staff attestation and competition for the position occupation description of November 25, 2009*. The permanent professional improvement of the academic staff is conducted in accordance with the Rector’s order No A-8 *Directions on staff qualification improvement” of January 10, 2005*. In order to assure a high quality academic teaching staff, all the lecturers have to pass a professional qualification every five years. From the information provided in the self-evaluation report, the entire faculty succeeded in this qualification process. The results of this qualification process ensure the learning outcomes.

The number of lecturers/students ratio has been of 0.31 in the year 2011, which is very good and assures a good contact between lecturers and students and proves adequate to ensure learning outcomes. However, the reason for this excellent number seems to be due to the declining number of students enrolled in the programme in the last year. This may show a lack of programme's interest that may be corrected in the mid-term future.

The higher education institution creates conditions for the professional development of the teaching staff necessary for the provision of the programme. In particular, KTU has organized various qualification-raising courses for their employees. For example, in 2010 the seminar *Courses' transfer from the virtual learning environment Vista into the virtual learning environment Moodle*, and educational competence development courses *The modern university's teaching and learning system*, the training of the distance learning course creation *Courses creation in the virtual learning environment Moodle*, the training of the use of the science's electronic information resources (databases) *Sources of Technological Sciences* were organized. In 2007 - 2011 the courses *The base of the distance learning methodology*, *Management System of the study subjects, English language courses*, etc. were organized.

In the international mobility area, staff has opportunities to go to other international universities. However, very limited number of professors made use of this opportunity. Some of the staff attends international conferences to present research results. This lack of international mobility threatens the international vision of the staff and of the University in general and should be improved.

The faculty has teachers who might lecture in English. The choice, however, is very limited so far. The teachers are not confident enough to teach in English and do not feel very much the need of doing so. In case of the younger staff, however, the University should ensure a mindset that makes it natural to teach in English. A long-term vision could be that all Master courses be taught in English. This would make it easier to attract foreign students and Lithuanian students would get a better command of English.

In advanced courses it should be considered to have young researchers giving a few lectures on their field of speciality in order to present examples of the research front to the students and in this way stimulate the students' interest for research.

In the research context, the teaching staff of the programme is not involved wide enough in national and international research directly related to the telecommunication engineering. Efforts should be made by both, the University to provide the adequate environment and the teaching staff to increase their involvement in high quality international research, especially among the junior faculty.

In order to increase the international activities of the University and to be able to attract foreign students in the future, English teaching activities should be potentiated.

4. Facilities and learning resources

The space allocated to each student and the corresponding studying conditions are good enough to assure a comfortable learning environment. However, although it is completely understood that the latest equipment may not be updated constantly for economical reasons, some laboratories have been found outdated with regard to the state of the art in Telecommunications. In agreement with the self-evaluation report, there is a lack of education laboratories for some subjects. This hinders the implementation of the students' practical training programme. Laboratories must have opportunities to develop practical designing and exploitation skills of the main telecommunications networks and technologies, in particular:

- Core network: transmission, aggregation and service delivery platforms.
- The main optical and wireless access technologies: FTTx (Fiber to the x), point-to-point, xPON (Passive Optical Network) and LTE (Long Term Evolution).

Update of the equipment relies mainly on the industrial partners. This is a very good sign of cooperation between the University and the Companies, but may prove insufficient to accommodate the latest developments.

Many textbooks are in Lithuanian which indicates a good involvement of national faculty in the field. However, more English books should be used which would provide a double added value. First, as the options are much wider, the students would have access to the latest developments in the Telecommunication area. Secondly, the students would be exposed to all technical English terms in the field that would offer additional skills, as all the updated literature is in English.

Library facilities are excellent and students have access to a great variety of books, journals and different teaching materials. Access is possible both physical or via the Internet.

The facilities and equipment used in the laboratories are practically the same as the ones used for the BA programme. This may show that the programme is not using the latest and more advanced equipment needed in the MA studies.

5. Study process and student assessment

The admission requirements are well founded. The admission to the Telecommunications Systems second cycle study programme in the Telecommunications and Electronic faculty is carried out according to General Regulations for General Admission to the Second-Level. The admission is granted by the faculty admission commission organized by the order of the KTU Rector.

The basic requirement for admission to the programme is the bachelor‘s qualification degree or equivalent in electric engineering, electronics engineering, informatics engineering. Those who have finished university studies of telecommunication, electronics and electrical engineering study area are admitted into the master programme in telecommunication without additional requirements. Other students with different background have additional studies during one year. This is a well-designed process that assures the adequate background for entering into the Telecommunication Systems master programme. However, efforts should be made in order not to introduce again basic contents already taught in the first year programme.

The detailed information about the second cycle of Telecommunications Systems study programme is published in the University website.

The studies are organized in autumn and spring semesters that each lasts 16 weeks, according to the schedule announced in the University Internet page and the annual KTU Study Programmes edition, following the individual plans and timetables. The organization of the study process ensures an adequate provision of the programme and the achievement of the learning outcomes.

According to the information provided by the students, almost all students are working full time at the same time as they are studying. Although this is a very well understood situation, it presents some risks for the students study process and especially for the internationalization of the programme. A well-designed programme of scholarships should be made available to the students such as they would be able to fully concentrate on their studies.

According to the self-evaluation report, the most talented students are attracted to the scientific-research activity that is carried out by the lecturers. However, from the information found out on the site visit, not much involvement of students in research activities has been observed.

Students have the opportunity to participate in the international mobility programmes. However, as explained in the self-evaluation report and confirmed on the site-visit, the number of participating students is almost non-existing. According to the students, no information is provided on mobility programmes. There is also a very limited number of incoming students in mobility programmes. Some actions by the Faculty of Telecommunication and Electronics to promote these international exchanges, incoming and outgoing, would be very welcomed. Particular actions could be to increase the student's stipend, or the Faculty budget, needed to cover travel and living expenses and to increase the number of international institutions involved in the mobility plan. In addition, some additional effort to advertise more intensively the advantages of going abroad would be very useful for the students.

The higher education institution ensures an adequate level of academic and social support. In addition, the assessment system of student's performance is clear, adequate and publicly available.

The students' achievement assessment criteria are made public at the beginning of the semester: during the first lecture, the lecturer introduces students to the study subject, purpose, themes, the individual work schedule of tasks and their impact on the final grade. The study programmes and their constituent subjects with the detailed descriptions of the purposes and the acquired knowledge and skills as well as evaluation and accreditation standards are fully accessible to the students in the University's website. In this context, the assessment system of student's performance is clear, adequate and publicly available. In addition, the professional activities of the majority of graduates meet the programme providers' expectations.

6. Programme management

The management of the Programme is implemented with reference to the KTU Statute approved by the Parliament of the Republic of Lithuania No XI-1194 of November 30, 2010 and the University Academic Regulations approved by the Order of KTU Senate No 43 of October 30, 2002. The Rector approves and the Senate confirms the studies programmes at the University. The activity of the Programme administration and internal assurance of the studies quality is administered by the Vice Rector for Studies with the assistance of the Studies Service's Study quality and the monitoring and Studies units.

The highest self-governing body for the studies quality assurance of the Faculty is the Faculty Council. Social partners participate in this activity: two representatives of the Faculty's student Union and two representatives from industry, heads of Departments and elected faculty members. The Council consists of 14 members. The decisions are made by voting. The programmes of the Faculty of Telecommunications and Electronics are developed and supervised by the continually working Study Programme Committee. Internal quality assurance measures seem to be effective and efficient.

Up to July of 2010, the continual assessment and development of the quality of the study Programme was performed with the reference to the Internal quality assurance system (IQAS) approved by KTU Senate. IQAS was updated in 2010. According to the IQAS, a large number of practical telecommunication study's quality assurance methods are used. In this context,

information and data on the implementation of the programme are regularly collected and analysed.

However, on the student's side, there is lack of participation in the quality assurance process. A very limited number of students are participating in the evaluation process of the programme and the teaching staff. The main reason presented by the students is the lack of confidence in the anonymity of the process. Adequate measures should be taken to assure this anonymity and to convince the students to participate in the process.

Regarding the external evaluation of the Telecommunication Systems study programme done by The Centre of the Studies Quality Assessment (SQAC) in 2004, all major recommendations have been taken into account.

III. RECOMMENDATIONS

Programme aims and learning outcomes

1. Take into account the global market beyond the European perspective.
2. Take into account possible labour markets needed in emerging countries.
3. Take into account the research needs in both the Lithuanian and European context.
4. Very strong efforts should be made to unify the Telecommunications Systems and Telecommunications Master programmes.

Curriculum design

1. Consider changing the names of programme courses to distinguish the contents. In particular, *Security of Electronic Communication Services* and *Security and Protection of Communications and Electronics Means*.
2. Consider changing the name of the course *Innovation and Innovative Technologies* as it is mainly focused on entrepeneurship.
3. Consider adding some Multimedia Communications content into the programme, probably as elective courses.
4. Consider moving the optional courses offered in the first semester to more advanced semesters.

Staff

1. Strong efforts should be made to involve faculty staff in stays in international universities and research institutions.
2. Strong efforts should be made to involve faculty staff in cutting edge research activities.
3. Efforts should be made to potentiate English teaching activities, especially for young faculty professors.
4. Consider having young researchers give a few lectures on their field of speciality in advanced courses.
5. Consider to invite well-known researchers worldwide to give some lectures in the programme

Facilities and learning resources

1. Strong efforts should be made to have the latest equipment in the laboratories. In particular:
   Core network: transmission, aggregation and service delivery platforms.
   The main optical and wireless access technologies: FTTx (Fiber to the x), point-to-point, xPON (Passive Optical Network) and LTE (Long Term Evolution).
2. Efforts should be made to increase the number of English textbooks to be used in the courses.

Study process and student assessment

1. Efforts should be made to involve students in staff research activities.
2. Strong efforts should be made to involve students in international mobility programmes.

Programme management

1. Strong efforts should be made to involve students in the evaluation of staff activities.

IV. SUMMARY

Programme aims and learning outcomes

The programme aims and learning outcomes are clearly defined. A very good and detailed study has been made of the needs of the public sector and labour market as well as of well-known European Universities with similar Telecommunication programmes.

A very strong recommendation is given to unify the Telecommunications Systems Master programme with the Telecommunications Master programme. This unification would contribute to unify synergies and to develop study subjects that would be very attractive to both, national and international students.

Curriculum design

The curriculum design meets all legal requirements. Theoretical and practical teaching according to the learning outcomes is implemented. Study programme is in general coherent.

Consider including Multimedia Communications. Changing the names of some programme courses would help to distinguish the contents. Moving optional courses offered in the first semester to more advanced semesters would contribute to a better decision of the optional study content by the students.

Staff

The staff assures a high academic level. The staff providing the study programme meets legal requirements. The lecturers/students ratio is very good.

Staff should be much more involved in international stays and cutting edge research efforts. Efforts should be made to potentiate English teaching activities, especially for young faculty professors.

Facilities and learning resources

The space allocated to each student and the corresponding studying conditions are good enough to assure a comfortable learning environment.

Efforts should be made to have the latest technological equipment in the laboratories.

Study process and student assessment

The admission requirements are well founded. The higher education institution ensures an adequate level of academic and social support. In addition, the assessment system of students' performance is clear, adequate and publicly available.

Strong efforts should be made to involve students in international mobility programmes.

Programme management

Internal quality assurance measures seem to be effective and efficient. A large number of practical telecommunication study's quality assurance methods are used. Information and data on the implementation of the programme are regularly collected and analysed.

Strong efforts should be made to involve students in the evaluation of staff activities.

V. GENERAL ASSESSMENT

The study programme *Telecommunications Systems* (state codes – 62401T207, 621H64002) at Kaunas University of Technology is given **positive** evaluation.

Study programme assessment in points by evaluation areas.

No.	Evaluation Area	Evaluation Area in Points*
1.	Programme aims and learning outcomes	3
2.	Curriculum design	3
3.	Staff	3
4.	Material resources	2
5.	Study process and assessment (student admission, study process, student support, achievement assessment)	3
6.	Programme management (programme administration, internal quality assurance)	3
	Total:	**17**

*1 (unsatisfactory) - there are essential shortcomings that must be eliminated;
2 (satisfactory) - meets the established minimum requirements, needs improvement;
3 (good) - the field develops systematically, has distinctive features;
4 (very good) - the field is exceptionally good.

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V. APIBENDRINAMASIS ĮVERTINIMAS

Kauno technologijos universiteto studijų programa *Telekomunikacijų sistemos* (valstybinis kodas – 62401T207, 621H64002) vertinama **teigiamai**.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai	3
2.	Programos sandara	3
3.	Personalas	3
4.	Materialieji ištekliai	2
5.	Studijų eiga ir jos vertinimas	3
6.	Programos vadyba	3
	Iš viso:	**17**

* 1 - Nepatenkinamai (yra esminių trūkumų, kuriuos būtina pašalinti)

2 - Patenkinamai (tenkina minimalius reikalavimus, reikia tobulinti)

3 - Gerai (sistemiškai plėtojama sritis, turi savitų bruožų)

4 - Labai gerai (sritis yra išskirtinė)

IV. SANTRAUKA

Programos tikslai ir studijų rezultatai

Programos tikslai ir studijų rezultatai yra aiškiai apibrėžti. Buvo atliktas labai geras ir detalus valstybinio sektoriaus ir darbo rinkos poreikių bei garsių Europos universitetų, siūlančių panašias Telekomunikacijų programas, tyrimas.

Labai primygtinai rekomenduojame suvienyti Telekomunikacijos sistemų magistrantūros programą su Telekomunikacijos sistemų magistrantūros programa. Suvienijus šias programas, leistų prisidėti prie sinergetinio efekto kūrimo ir parengti studijų dalykus, kurie būtų labai patrauklūs tiek vietos, tiek tarptautiniams studentams.

Studijų turinio struktūra

Studijų turinio struktūra tenkina visus teisinius reikalavimus. Vykdomas teorinis ir praktinis mokymas pagal studijų rezultatus. Studijų programa yra bendrai nuosekli

Apgalvokite Multimedijos komunikacijų dalyko įtraukimą. Pakeitus kai kurių programos kursų pavadinimus, leistų išskirti jų turinius. Perkėlus pirmajame semestre siūlomus

pasirenkamuosius dalykus į vėlesnius semestrus, leistų studentams priimti geresnį sprendimą dėl pasirenkamojo dalyko turinio.

Personalas

Personalas užtikrina aukštą akademinį lygį. Studijų programą vykdantys darbuotojai atitinka teisinius reikalavimus. Dėstytojų/studentų santykis yra labai geras.

Darbuotojai turėtų daug aktyviau dalyvauti tarptautinėse stažuotėse ir naujausių mokslinių tyrimų veiklose. Reikėtų pasistengti sustiprinti anglų kalbos mokymą, ypatingai jauniems fakulteto profesoriams.

Priemonės ir mokymosi ištekliai

Vienam studentui tenkanti erdvė ir atitinkamos mokymosi sąlygos yra pakankamai geros, kad galėtų užtikrinti patogią mokymosi aplinką.

Reikėtų pasistengti aprūpinti laboratorijas naujausia technologine įranga.

Studijų procesas ir studentų vertinimas

Studentų priėmimo reikalavimai yra gerai pagrįsti. Aukštojo mokslo mokykla užtikrina reikiamą akademinės ir socialinės paramos lygį. Be to, studentų vertinimo sistema yra aiški, tinkama ir viešai prieinama.

Reikėtų dėti dideles pastangas, siekiant įtraukti studentus į tarptautines mobilumo programas.

Programos valdymas

Vidaus kokybės užtikrinimo priemonės atrodo esančios veiksmingos ir efektyvios. Naudojama daug praktinių telekomunikacijos studijų kokybės užtikrinimo metodų. Informacija ir duomenys apie programos vykdymą yra reguliariai renkama ir analizuojama.

Reikėtų dėti didžiules pastangas, kad studentai būtų įtraukti į personalo veiklų vertinimą.

III. REKOMENDACIJOS

Programos tikslai ir studijų rezultatai

1. Atsižvelgti į pasaulinę rinką už Europos ribų.
2. Atsižvelgti į galimas darbo rinkas, kurios reikalingos besivystančiose šalyse.
3. Atsižvelgti į tyrimų poreikius tiek Lietuvos, tiek Europos kontekste.
4. Reikėtų dėti dideles pastangas, siekiant sujungti Telekomunikacijų ir Telekomunikacijos sistemų magistrantūros programas.

Studijų turinio struktūra

1. Apsvarstyti kai kurių programos kursų pavadinimų keitimą, siekiant išskirti jų turinį. Būtent, *Elektroninių ryšio paslaugų saugumo* ir *Ryšių ir elektroninių priemonių saugumo ir apsaugos* pavadinimus.
2. Apsvarstyti kurso *Inovacijos ir inovacinių technologijų* pavadinimo keitimą, kadangi jame pagrindinis dėmesys teikiamas verslumo temai.
3. Apsvarstyti galimybę įtraukti multimedijos komunikacijų turinį į programą, galbūt kaip pasirenkamuosius kursus.
4. Apgalvoto pirmajame semestre siūlomų pasirenkamųjų kursų perkėlimą į vėlesnius semestrus.

Personalas

1. Reikėtų stipriai pasistengti, kad fakulteto personalas vyktų į tarptautinius universitetus ir tyrimų institucijas.
2. Reikėtų dėti dideles pastangas, kad fakulteto personalas dalyvautų pažangiausių mokslinių tyrimų veikloje.
3. Reikėtų pasistengti sustiprinti anglų kalbos mokymą, ypatingai jauniems fakulteto profesoriams.
4. Apgalvoti galimybę leisti jauniems tyrėjams išdėstyti jų specializacijos keletą paskaitų pažengusio lygio studentams.
5. Apsvarstyti galimybę pasikviesti pasaulinio garso tyrėjus paskaityti keletą paskaitų programoje.

Priemonės ir mokymosi ištekliai

1. Reikėtų dėti dideles pastangas, kad laboratorijos būtų aprūpintos naujausia įranga. Būtent:
   Pagrindinis tinklas: perdavimo, kaupimo ir paslaugos teikimo platformos.
   Pagrindinės optinės ir belaidės prieigos technologijos: FTTx (Fiber to the x), point-to-point (taškas į tašką), xPON (Pasyvus optinis tinklas) ir LTE (Ilgalaikis vystymasis).
2. Reikėtų pasistengti padidinti kursų metu naudojamų angliškų vadovėlių kiekį.

Studijų procesas ir studentų vertinimas

1. Reikėtų pasistengti įtraukti studentus į personalo vykdomas mokslinių tyrimų veiklas.
2. Reikėtų dėti dideles pastangas, siekiant įtraukti studentus į tarptautines mobilumo programas.

Programos valdymas

1. Reikėtų dėti didžiules pastangas, kad studentai būtų įtraukti į personalo veiklų vertinimą.