



ITU Centre of Excellence at FEEIT in Skopje

First Meeting of the Steering Committee for the Centres of
Excellence in Europe

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Brief introduction to FEEIT

- The Faculty of Electrical Engineering and Information Technologies (FEEIT) is founded in 1959 within the Ss. Cyril and Methodius University in Skopje, Macedonia.
 - at present time over 3000 students are studying in all three cycles (undergraduate, master and doctoral studies).
 - the academic personnel is over 100.

- Ss. Cyril and Methodius University in Skopje is the first state University in the Republic of Macedonia, founded in 1949.
 - the University represents a functional community of 24 faculties (including the FEEIT), and 9 research institutes.
 - around 50000 students study in all Faculties in all cycles of studies.
 - the academic personnel is over 2700.



Studies at FEEIT

- The Faculty of Electrical Engineering and Information Technologies is organized in 10 Institutes and has 19 laboratories for education and research, that provide basis for
 - 7 undergraduate study programmes and 19 master programmes in all areas of telecommunications, electronics, computer science, automation, power engineering, as well as PhD programmes in electrical engineering and information technologies.
- All studies are organized according to the Bologna agreement and the European Credit Transfer System (ECTS).
- Our academic work is focused on educating engineers with the best professional knowledge and with analytical and critical ability of thinking and reasoning.



Quality and mission

- We are continuously following the new developments and trends, and as a dynamic and active institution, we are adapting to the requests and needs of the global society.
 - The FEEIT is a symbol of quality and we are strongly devoted to it, and aim to continue its successful tradition of which we are very proud.
- For the quality management systems the FEEIT is also ISO 9001:2008 certified.
- The FEEIT' mission is:
 - To provide continuing education and professional individuals in electrical engineering entrepreneurship and new technologies that will work effectively and promote new work and new opportunities.



University's mission

- The Ss. Cyril and Methodius University's mission is to be:
 - an autonomous, scientific and higher educational university which provides teaching, scholar and applied activities in technical, natural sciences and mathematics, bio-technical, artistic, medical and social sciences;
 - a university open to all students on the basis of equality and their academic results regardless of their ideological, political, cultural and social origin;
 - a university that coordinates its academic offer to the needs of the social surrounding, and has continuously dynamic relation towards it;
 - a university that creates stimulative environment for its employees, providing them a progress of their abilities in order to accomplish its mission;
 - a university which develops long-life and continuing education;
 - a university determined to achieve the European norms and standards in all spheres of its activities.



Priority area of FEEIT for the 2015-2018 cycle of activities

- The priority area of FEEIT for 2015-2018 ITU CoE trainings in Europe is “Broadband Access”.
- Broadband access topics are the following:
 - Fixed broadband access,
 - Mobile broadband access,
 - Next Generation Networks (NGN) and Next Generation Access (NGA),
 - Broadband Internet technologies,
 - Future networks,
 - Future Internet,
 - 3G/4G/5G mobile networks and services,
 - Business aspects of broadband access, regulation aspects of broadband access.



ITU training activities 2009-2014 delivered in the priority area via the ITU Academy 1/2

- ITU Centres of Excellence Distance Learning Course “Mobile and Wireless Multimedia Networks: Technologies, Regulation and Business Aspects”, 1 September – 12 October 2009. Training material organized in 6 modules, with total of 337 pages.
- ITU Workshop on 3G-HSPA & LTE: Towards the Next Generation of Mobile Networks, Skopje, Macedonia, 3-5 February 2010.
- ITU Centres of Excellence Distance Learning Course “Emerging Information and Communications Technologies”, 18 May – 28 June 2010. Training material organized in 6 modules, with total of 340 pages.
- ITU Centres of Excellence Distance Learning Course “Next Generation Networks – NGN”, 23 November – 20 December 2010. Training material organized in 4 modules, with total of 256 pages.
- ITU Centres of Excellence Distance Learning Course “NGN services VoIP and IPTV: standardization, technical and regulation aspects”, 31 May – 27 June 2011. Training material organized in 4 modules, with total of 241 pages.
- ITU Centres of Excellence Distance Course “Next Generation Mobile and Wireless Networks”, 22 November – 19 December 2011. Training material organized in 4 modules, with total of 241 pages.



ITU training activities 2009-2014 delivered in the priority area via the ITU Academy 2/2

- ITU Centres of Excellence Distance Learning Course “Future Internet”, 29 May – 25 June 2012. Training material organized in 4 modules, with total of 268 pages.
- ITU Centres of Excellence Distance Learning Course "Mobile Broadband: LTE/LTE-Advanced, WiMAX and WLAN", 20 November – 17 December 2012. Training material organized in 4 modules, with total of 232 pages.
- ITU Centres of Excellence Distance Learning Course "Broadband and Next Generation Networks", 28 May – 24 June 2013. Training material organized in 4 modules, with total of 261 pages.
- ITU Centres of Excellence Distance Learning Course "4G Mobile and Future Internet", 19 November – 16 December 2013. Training material organized in 4 modules, with total of 241 pages.
- ITU Centres of Excellence Distance Learning Course, "NGN, Future Networks and Cloud Computing", 27 May – 23 June 2014. Training material organized in 4 modules, with total of 249 pages.
- ITU Centres of Excellence Distance Learning Course, “Wireless and Mobile Broadband Internet”, 18 November - 15 December 15, 2014, Training material organized in 4 modules, with total of 246 pages.



ITU Academy

<http://academy.itu.int/moodle/>



ITU Academy
URL

Here is given a
link to a future ITU
Academy training

The screenshot shows the ITU Academy Moodle website. The browser address bar displays academy.itu.int/moodle/. The page layout includes a search bar, a login section with fields for Username and Password, and a list of course categories. The main content area features a banner for workshops and seminars, followed by a table of upcoming events. The last row of the table is highlighted with a red box.

Status	ID	Course Name	Start Date
●	14DL13782AMS-S	Telecomunicaciones para no Tecnicos	28.04.14
●	14XX13842EUR-E	Fostering Innovation and Partnerships in the Human Capacity Building: Enhanced Engagement of Academia in the International Telecommunication Union	28.04.14
●	14WS13357AFF-F	Atelier de formation sur les Aspects Techniques et Services de la TNT	05.05.14
●	14DL13788AMS-S	El Balance Scorecard para Empresas de Telecomunicaciones	05.05.14
●	14DL13784AMS-S	Gestión del Espectro Radioeléctrico: utilizando herramientas de ultima generación	12.05.14
●	14DL13789AMS-S	Curso Basico de LTE (Long Term Evolution)	12.05.14
●	14DL13368AMS-S	Atención al Cliente y Marketing en el sector de las telecomunicaciones (Módulo 9 - GET 2013/2014)	19.05.14
●	14WS13360AFE-E	Cloud Computing	19.05.14
●	14WS13833ASP-E	Smart Technologies and Services in LTE-Advanced Era	20.05.14
●	14DL13864AMS-E	NGN, Future Networks and Cloud Computing	27.05.14

“ITU Centre of Excellence at FEEIT in Skopje”, Prof. Dr. Toni Janevski



User identification in the ITU Academy

ITU Academy user account is uniquely identified by the user's email address.

ITU Academy courses for a given user.

Country: Macedonia, The Former Yugoslav Republic Of
City/town: Skopje
Email address: tonij@feit.ukim.edu.mk
Gender: Mr.
Priv. Phone: +389 2 3099 119
Name: Faculty of Electrical Engineering and Information Technologies, Ss. Cyril and Methodius University in Skopje
Acronym: FEEIT
Your title: Toni
Manager details: tonij@feit.ukim.edu.mk
Reasons to apply: Tutor and coordinator of given courses in the ITU Academy.
Course profiles: Train-The-Trainers for ITU e-Learning Courses, Broadband and Next Generation Networks, NGN, Future Networks and Cloud Computing, 4G Mobile and Future Internet, Future Internet, Next Generation Mobile and Wireless Networks, Mobile Broadband: LTE/LTE-Advanced, WiMAX and WLAN, NGN Services VoIP and IPTV, Mobile and Wireless Multimedia Networks: Technologies, Regulation and Business Aspects, 3G-HSPA and LTE: Towards the Next Generation of Mobile Networks
Last access: Friday, 25 April 2014, 03:11 AM (20 secs)
Interests: Telecommunications: Wireless and Mobile Networks, Internet Technologies, Quality of Service



ITU Academy course cover page

Title of the ITU Academy course.

Tutors and coordinators.

The screenshot shows a Moodle course page for 'NGN, Future Networks and Cloud Computing'. The page includes a navigation menu on the left with sections for 'LATEST NEWS', 'RECENT ACTIVITY', and 'SETTINGS'. The main content area features a 'Topic outline' section with a 'News forum' and a central graphic of a globe with a laptop. The course title is prominently displayed in a red box, and the tutor and coordinator information is also highlighted in a red box. The page is logged in as 'Toni Janevski' and includes a 'Back to Home' button.

Course: NGN, Future Netv x
academy.itu.int/moodle/course/view.php?id=711

Home You are logged in as Toni Janevski (Logout) << Back to Home

ITU Academy empowering minds NGN, Future Networks and Cloud Computing

Home ► My courses ► 13864 Turn editing on

LATEST NEWS Add a new topic... (No news has been posted yet)

RECENT ACTIVITY Activity since Wednesday, 23 April 2014, 02:28 AM Full report of recent activity... Nothing new since your last login

SETTINGS Course administration Turn editing on Edit settings Users Filters Grades Backup Restore Import Reset Question bank Repositories Switch role to... My profile settings

News forum

ITU Centres of Excellence Network for Europe

NGN, Future Networks and Cloud Computing

Tutor & Coordinator: Prof. Dr. Toni Janevski
Tutor Assistants: Tomislav Shuminoski, Dr. Marko Porjazoski
Training Coordinator: Jaroslav Ponder

Dates: 27 May - 23 June 2014

Open Close all tozzles.



ITU Academy courses: Best experiences from 2009-2011

ITU Academy e-learning course	Year	Enrolled participants	Participants that completed the course	Number of countries globally
Next Generation Networks - NGN	2010	77	69	17
NGN services VoIP and IPTV	2011	66	59	20
Next Generation Mobile and Wireless Networks	2011	100	89	33



ITU Academy courses: Best experiences from 2012-2014

ITU Academy e-learning course	Year	Enrolled participants	Participants that completed the course	Number of countries globally
Future Internet	2012	101	82	39
Mobile Broadband: LTE/LTE-Advanced, WiMAX and WLAN	2012	189	144	44
Broadband and Next Generation Networks	2013	150	124	45
4G Mobile and Future Internet	2013	149	97	40
NGN, Future Networks and Cloud Computing	2014	130	82	44
Wireless and Mobile Broadband Internet	2014	215	131	50



Type of participants in the ITU Academy e-learning courses

- Different types of participants follow a given e-learning course, and they are coming from different organizations, including:
 - National regulators
 - Government organizations and ministries
 - Network and service providers
 - Telecom and IT companies
 - Students from universities
 - Professors from academia and instructors from training centers
 - ...and every individual which want to update their knowledge or have up-to-date information in a given field
- Different participants may have different interests and different focuses in a single ITU e-learning course, since most of them are professionals
 - Working in telecommunications/ICT or related fields
- Let see some feedback from participants regarding their benefits from ITU e-learning practices



ITU e-learning experiences: NGN services VoIP and IPTV

Q In your opinion, how your organization benefiting from the knowledge and experience you acquired through this course?, Explain

- In my opinion, my organization will really benefit from my knowledge and experience acquired through this course, because my company is in the stage of moving from PSTN towards NGN with use of managed VoIP, IPTV, fiber optics etc. That is why I found this course especially useful for me.
- Now in my country, there is National Operator where Huawei company install an NGN - Cdma Network, i will organiza for their Staff a training.
-
- Covering other domains of Telco business
-
- VoIp and IPTV is a hot topic in nowadays discussion, for that reason, all technicians should now about its standardization and potentiality.
- My company deals with Regulation and control of electronic communications, so my knowledge and expirience with this course can contribute to better understanding of the needs and requirements of service providers.
- I found this really relevant to my masters program in Communication Technology and Policy and I believe once I get back to my organization I will share great thoughts to shape the business.
- This training session allowed me to see areas where I need to strengthen my knowledge in order to better control the evolution towards NGN networks. In this case I will be benefit form my organization.
- Keep up to date with new technologies in NGN and services
-
- I will be able to use my experience in my future tasks for analises of the NGN services VoIP and IPTV.
- Through this course I learned a lot of things that interested me, especially the part about the regulation of IPTV and VOIP services.

- It was my personal benefit.
- The course provided me with new tools to work on a field of my interest: network neutrality.
-
- Since I work at national Communications Regulatory Agency I found this course very useful in aspects of knowledge I acquired about regulatory and business aspects of new networks and services.
- My work position is refers to cable distribution systems. With regard to this course in relation to the implementation NGN networks using knowledge which I reached from this course can cause the development and introduction of new standards for cable distribution systems in my country.
-
- I am directly involved in IPTV project. Theoretical background of the topic gives me broader picture of the industry.
- I shall try to pass all the text documents to my colegues, who are interested in this moments in IPv6 implementations issues.
-
- As we are in the phase to implement NGN in our network, the course was on time.
- My organization have benefit from educated experts.
- The course materials including the discussion forum's topics gave much clearer picture of how VoIP and IPTV works, what are advantages of NGN VoIP and NGN IPTV.
Also, QoE and QoS are well defined, and it's much easier to distinguish them and the reasons for bad QoS and QoE.

So the course helps to classify the problem and better diagnose them.



ITU e-learning experiences: Next Generation Mobile and Wireless Networks

Q In your opinion, how your organization benefiting from the knowledge and experience you acquired through this course?, Explain

- In my country the networks of the operators are 2,5G types. This course gives me the necessary technical skills for an evolution of our mobile network towards the 3G and the 4G. Moreover, I will be able to take actively in the lawful debates at the time of granting 3G and 4G licences .
- This course helped me gain solid knowledge on Next generation networks and concepts. Following trends in Telecommunication industry is always a benefit to the organization.
For me it has helped me to spread my knowledge on my master studies.
And for the company I work for it is a benefit to know last technologies concepts because working with mobile operators requires so.
- ofcourse it works in many ways.
- Provides more detailed knowledge and information about the NGN, as well their applications.
-
- Immediate, middle and long term evolution of mobile technologies will change market, services and customers issues. In this sense, knowledge about current and future mobile technologies helps in order to annalyse regulatory trends and evolution of regulatory framework.
- Everything is changing in a fast way in the field of telecommunication.It\'s good for everyone to be updated for these changes and to do the best by using these changes in the daily work.
-
- This course was for my personal understanding of the 3GPP standards as i intend to join an organization using the 3G HSPA technologies. I am curently employed in an ISP offering internet services to co-operate customers.
- Better understanding and experience of NGN.
the future development of mobile communications wich are not fully developed in my country.

- Sharing knowledge among the colleagues of my company, for specific items as this was.
- What i learned in this course would be shared with people i work with in order to prepare the doc for LTE consultation paper.
- The experience would be very useful about future working in our organization :)
- I acquired new skills that make me smarter. I will be pleased and able to anticipate many of our future projects and especially investment. So my organization will make profitable investments.
-
- having understood the advantages of the IMT_advanced, i will use my knowledge gained to enlighten my fellow engineers and managers on the need to migrate to this level of technology in order to sastify particularly the coporate customers who have been making so much noise about the epeeds offered currently on EDGE& 3G.with the fact that there is a backward compatibility to 3GGP IPCANs and mobility(Hand overs) is possible, i will advice that we deploy the IMT Advanced or even at least LTE so that we continue carrying voice calls on order technologies and we solely dedicate the new technology for data services only
- The acquired knowledge would help in dealing with interdisciplinary regulatory interface in certain identified aspects.
-
- Increasing the knowledge of staff with the content of this course, also increase the implementation capacity of my institution. So this course will be beneficial for my institution too.
-
- I believe that the knowledge gained in this course help me in my daily work for the Czech telecommunication office. With this course I have created a realistic picture of the future development of mobile communications wich are not fully developed in my country.



ITU e-learning experiences: Future Internet



Q In your opinion, how your organization benefiting from the knowledge and experience you acquired through this course?, Explain

- as an employee of a postal and telecommunications regulatory authority, that will benifite from my knowledge especially concerning NGN and convergence regulation.
- My organization will benefit from the knowledge and experience that I have acquired through this course, by the way of doing task or work. I hope they will note some significant changes in my work, as result of this course.
- as a regulator, my organization will find my aquired knowledge and experience very useful, and i will participate in any work related to this subject.
- the knowledge gained will help me to improve my work quality.
- The course have provided me with the opportunity to focus my efforts entirely on acquiring right knowledge and skills, to immerse myself in research and support me in realizing a goal of achieving for my company and my professional career as Network Planning Engineer in Next Generation Networks
- For now my organization won't have many benefits...but for the future I think this knowledge and experience will help
-
- now i have a very good overview of the Future Internet concept, its challenges and expectations.
- I work as a web programmer so knowing how the internet works is essential. It was particularly helpful learning about future internet services, as a guide to where I should focus my attention in the future.
- This course help me better understand the activity of our clients.
- I'll organize workshop about this course for my colleague
- this does in many ways.
- The course will go a long way in preparing the organisation for the regulation of the future internet and NGN
- As equipment provider, I can better cooperate to design new solutions for our customers.
-
- Expressed his admiration about this course knowing that if taken will try to vėjmi in theory.I think that everything was OK, the questions were well structured with correct answers. I hope that in future will be coperation and continue thank you wish you health and success.
- I surely thing my organization would benefit greatly. Learned about new technologies and ideas, the way forward in future internet, IP V6 migration, telephony and voice all moving toward IP base and etc, these are some of the benefits. TCP/ IP to me is the future.
-
- In my work as a tutor with a group of people on my charge, they will benefit from the knowledge gained to provide complete technical training.
- no
- As an expert in the NRA, I have to follow and learn the developments in technology in the electronic communications sector.
- we know more about FI
- I teach courses from this area, so definitely my lectures and tutorials could be updated with the knowledge obtained from the course.
- Although I am not a network technician, and therefore wasn't able to follow all aspects of the training, it was possible to gain insights and a very good view of the landscape of new technologies that will affect internet. This will help in the formulation of a plan that will be able to meet our customer's expectations.
- Participating in this course definitely keeps you up-to-date with what's current in the ICT world.



ITU e-learning experiences: 4G Mobile and Future Internet

In your opinion, how your organization benefiting from the knowledge and experience you acquired through this course?, *Explain*

- This complements our expertise.
- up-to-date information
- Well if such services or technologies are rolled in my country, i believe i will be able to advise and give more insight to my firm as far as the new and old technologies are concern.
-
- This course is very important to my entity.As a National Regulator, we need have accurate and detail knowledge in all the technologies so we will be able to properly manage the frequency spectrum allocated to us.
- the management have been informed about the 4G mobile network
- I have started in-house training in my organization and I have given my people the course materials.
-
- It's a brief of what i have to do, what i should be prepare with the new technology.
- Ministries, regulatory administrations, telecommunications providers,
- It provides a good technical framework to learn, but the daily forum participation is very hard to achieve.
- I have gained knowledge in 4G technology which would be shared with other colleagues in the office.
- through providing knowledge on future technologies
- Regulatory framework needs constant actualization of knowledge, mainly if it is focused on mobile services.

- SENATEL is the organization of regulation of telecommunications in Ecuador, for this reason the knowledge about new tendencies of technologies is very important.
- The effects of the goals of participation are:
Increase the level of technical knowledge and skills in the field of telecommunications;
Actively monitor the progress of the development of technologies and methods in the field of telecommunications;
- the management of my university have now been informed about 4G mobile
- Informations and documentations for the evaluation of a LTE network.
- At the date I am working full time on mobile broadband requirements for the 4G implementation in Ecuador. The topics in this course will help me to understand some aspects to consider to achieve this.
- By being aware of the future trends in accessing and utilizing the internet and figure out how we can take advantage of this knowledge.
- The crecacion and aprecimiento new cell technologies are aspects that regulation institutions must take into account and that the technical aspects are those that tend to the respective regulation.
-
- Yes
- Very importante to develop quality regulations in 4G

Overall:

Each participant and organization has its specific benefit from a given ITU course.



Proposal for ITU CoE activities in 2015

- For 2015 the ITU CoE at FEEIT in Skopje proposes two elearning courses as self-sustainable trainings (in the area of "Broadband Access" for which the ITU CoE at FEEIT has been selected), to be provided via the ITU Academy:
 - 1) The first elearning course in 2015 has a draft title "Next Generation Broadband Internet Access", with proposed delivery dates 26 May - 22 June 2015 (duration: 4 weeks).
 - 2) The second elearning course in 2015 has a draft title "Mobile Broadband", with proposed delivery dates 17 November - 14 December 2015 (duration: 4 weeks).



Summary

- ITU CoE at FEEIT in Skopje aims to continue its successful delivery of ITU training courses established over past 5 years (2009-2014).
- It has successfully delivered many e-learning courses in the broadband access area via the ITU's platform ITU Academy.
 - The ITU Academy is an online self-learning e-learning platform, to be used for all ITU trainings in the future.
- In 2015-2018 cycle of activities FEEIT has been selected for the priority area of "Broadband Access", hence two e-learning courses are proposed for 2015:
 - "Next Generation Broadband Internet Access",
 - "Mobile Broadband".
- The distance learning courses held by the ITU CoE at FEEIT have proven to be self sustainable and very interesting for the targeted audience worldwide, hence ITU CoE at FEEIT believes that it is able to continue such practice in 2015 as well as further in 2015-2018 cycle of activities.



Thank you!