

# Introduction the Cisco Networking Academy Program into Educational Process of Preparation Computer Network Specialists at Kryvyi Rih Technical University

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## *Abstract*

Basic principles and necessity of introduction the Cisco Networking Academy Program at Kryvyi Rih Technical University are outlined in the article. Advantages of using this program in the educational process are given.

The Cisco Networking Academy Program was established ten years ago in the USA with the purpose of fundamental specialist preparation in theory and practice of designing, building and maintaining local and global networks using universally recognized standards. The program provides access to the informative internet-resources and includes on-line testing and checking facilities, instructor's consultation, and support. The half of every curriculum course is devoted to practical laboratory work on the network equipment. The Cisco Networking Academy Program allows preparing not only specialists with basic knowledge and practical skills in specific field, but also specialists of advanced technologies (IT-telephony, safety, and wireless network). In Ukraine, the first Cisco Networking Academy Program was opened seven years ago at Ternopil State Technical University. In most educational establishments, the courses of the academy have status of optional. However, at Kyiv Shevchenko National University, Kyiv-Mohyla Academy, and Kryvyi Rih Technical University a basic course on Cisco Certified Network Associate (CCNA) is integrated in the curriculum.

Since March, 2006, The Cisco Networking Academy Local Program has been included into educational program for the students with major in «Computer systems and network». The course consists of four sections: CCNA 1 is «Bases of computer networks», CCNA 2 is «Bases of routing», CCNA 3 is «Bases of commutation», and CCNA 4 is «Global computer networks». These sections are integrated in such disciplines as «Bases of computer networks», «Computer networks» and «Global computer networks». Testing and self-preparation (which cover 60-70% of educational material) is conducted in English (the material is also available in German, Polish, Spanish, and other languages). The peculiarity of studying the given course by foreign students (in particular, by the citizens of Syria) is in creating comfortable conditions for them to study the special disciplines. Therefore, for them testing and self-preparation are conducted in Arabic, their mother tongue. It considerably improves efficiency of material assimilation and promotes motivation to study network-oriented disciplines.

Having studied the material, given each semester, students have possibility to receive educational certificates. Besides, after completing The Cisco Networking Academy Program full course every student has an opportunity to pass an examination in order to get industrial certificate of CCNA international standard. This certificate confirms that a young certificated specialist has gained not only fundamental theoretical knowledge, but also practical experience of network design development, regular and constant network support, and skills of network defects maintenance. For today, about 20 students, studied at the faculty of information technologies, have already received the educational certificate of CCNA 1.

For the last half of year the amount of Ukrainian educational establishments, which take part in the Cisco Networking Academy Program, has grown almost twice. Every year requirements to the specialists in network technologies increase. Future leaders expect a young specialist to have not only deep knowledge in modern technologies, but also practical skills of working with network equipment and ability to analyse and eliminate difficult situations, connected with network functioning, maximally quickly.

Nowadays, network technologies are significantly necessary for successful work of Ukrainian state and commercial organizations and establishments. According to the data of the company IDC, the shortage of specialists in the field of network technologies is 210 thousand people all over the world. Ukraine needs 11600 professionals in this field, and by 2008 this number will increase to more than 33 thousand people. The insufficient amount of such specialists will become a serious barrier for introduction new technologies at the enterprises. In its turn, it can stunt an economic growth of companies and diminish the competitiveness of national economy. The insufficient amount of specialists will result in speculations at the market of labour and will lead to the necessity to adjust the system of values and employees' motivation. These processes will negatively influence the development of telecommunication industry and will cause its stagnation and even crisis.

The leading network companies advise to pay attention to the problem of insufficient amount of specialists in network technologies as soon as possible, while it is possible to change such a negative tendency yet. The Cisco Networking Academy Program has become the timely and socially responsible implementation of the company Cisco Systems, which is focused on working out

definite current problems. This conceptually new program is an example of valuable collaboration between IT-industry and educational establishments. Such cooperation has considerable potential and foresees establishing long-term, strong connections. The Cisco Networking Academy Program provides important technological support and facilities, which are the substantial addition to the limited resources of educational establishments, particularly in Ukraine. The students of our university have possibility to gain knowledge and skills, which they will apply in their future work in the specific conditions of technologically dependent economy.

The Cisco Networking Academy Program is both a valuable distance course, based on modern information technologies, and a powerful laboratory with practical base, built on using modern network equipment.

It is important to describe advantages of using the Cisco Networking Academy Program in educational process. They are:

**1. Flexibility.** A student himself determines the amount of time he needs for completing the course and tests.

**2. Modular principle.** The program is built on a modular principle. Each discipline or a few ones give the complete picture of a particular subject, which enables to create a curriculum, based on independent basic courses which suits individual or groups features.

**3. Parallelism.** A student can study, combining professional activity with studies (by the way, the students of the Cisco Networking Academy Program operating in Ukraine are not only those of higher educational establishments, colleges and schools, but also IT-specialists of such state organizations as Supreme Soviet and Cabinet of Ministers of Ukraine, National Bank of Ukraine and Kyiv State Administration).

**4. Studying from Distance.** Distance from the place of student's stay to the university is not important at all. They can pass tests working on the home computer (it is required to have a modern computer and Internet connection).

**5. Independence.** The point is that a student and a teacher or an instructor can carry out the processes of studying and teaching independently from each other, adapting a timetable and a pace of studying for their needs.

**6. Number of students.** Amount of those, who studies, is not limited. All of them have an access to many information resources. In addition, they can communicate among themselves and with their instructor using network communication and other facilities of information technologies.

**7. Profitability,** or economic efficiency of distance education in general. According to average estimation, the foreign and domestic educational systems of distance studying are 10-50% cheaper, than traditional forms of studying, mainly due to the effective use of educational areas and technical equipment of information technologies.

**8. Tutor's activity.** A teacher (a tutor in distance education terminology) has several definite functions, such as coordinating of cognitive process, improving of the course, advising and managing of educational projects.

**9. Student's activity.** Students are expected to have exceptional motivation of studying, self-organization, capacity for work and a certain basic level of education.

**10. Development of student's independence.** There is possibility of the independent working with educational material in the Cisco Networking Academy Program. This process of gaining knowledge is more difficult, but quality of achieved knowledge is better. At the same time students become more self-disciplined (almost all students try to take tests in time).

**11. Working out linguistic problems.** Documents of Bolonski process describe some definite linguistic problems, which can be solved by paying much attention at deeper studying of foreign languages. Thanks to studying with the Cisco Networking Academy Program, students constantly improve their technical foreign language.

**12. New information technologies** are mainly used in the system.

Reference [1] appropriately marks the combination of the following pedagogical methods of the distance education:

"1. Methods of the individual teaching and studying, which are characterized by "student-student" and "student-teacher" relations. These methods are realized by using such technologies as a telephone, voice mail, e-mail, and tutor's system.

2. Methods, which include active cooperation among all participants of educational process.

3. Method of «brainstorming», i.e. strategy of cooperation, which allows the groups of students generate ideas effectively.

4. A method of studying, when a student uses different educational resources at minimum participation of a teacher that means self-training".

"1. Методи індивідуального викладання і навчання, для яких характерні взаємовідносини студента з одним викладачем або одного студента з іншим студентом. Ці методи реалізуються за допомогою таких технологій як телефон, голосова пошта, електронна пошта, система тьюторів.

2. Методи, для яких характерна активна взаємодія між усіма учасниками навчального процесу.

3. Метод «мозкової атаки», тобто стратегія взаємодії, яка дозволяє групам студентів ефективно генерувати ідеї.

4. Метод навчання за допомогою взаємодії студента з освітніми ресурсами при мінімальній участі викладача, тобто самонавчання"

Experience of computerization allows asserting that in the case when the priority means a pedagogical aspect, the system goes out more effective.

Lately, the interest to the system of distance education has widened all over Ukraine. There is a Ukrainian Association of Distance Education, which works on a constant basis. In addition, conferences, seminars, and courses are held in leading educational establishments. In accordance with the law «About Higher Education», the system of distance education is an independent form of studying. In order this system get the deserved place in the Ukrainian system of education, first of all, it is necessary to create the global computer network of education and

science, because a computer itself contains initial material and at the same time can serve as a library, a center of inquiry information, and a place of communication as well. Development of the distance education is one of important terms of claim Ukraine in the international system of education, enlargement of international cooperation and integration of the domestic system of education into international educational space.

#### References

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