ORGANIZATION OF INDEPENDENT WORK IF STUDENTS IN THE SUBJECTS OF “ROBOTICS” BASED ON THE CREDIT SYSTEM

M. Chinpo‘latova
Student of Chirchik pedagogical university
Scientific Supervisor: Z.D. Abdullayeva
Teacher of Chirchik pedagogical university

Annotatsiya: *Ushbu ilmiy maqolada kredit tizimi asosida “robototexnika”mavzusida talabalarning mustaqil ishini tashkil qilish o‘rganilgan. Shuningdek, robototexnika qurilmalari Arduiono misolida tahlil qilinib, talabalarda mustaqil ishlash davomida ushbu qurilmalarda ishlash mahoratini yanada rivojlantirish bo‘yicha taklif va tavsiylar ishlab chiqilgan.*

Kalit so‘zlar*: kredit tizimi, robototexnika, mikrokontrollar, Arduino, mustaqil ish.*

Аннотация: *В данной научной статье рассматривается организация самостоятельной работь студентов по предмету ”Роботатехника ”на основе кредитной системы. Также на примера Ардуино были проанализированы устройства робототехники и разработаны предложение и рекомендации для дальнейшегоразвития у учащихся навыков работы с этими устройствами в ходе самостоятельной работу*

Ключевые слова: *Кредитная система, робототехника, микроконтроллер, Арду ино, самостаятельная работа.*

Annotation: *This scientific article examines the organization of students’ independent work on the subject of “robotics” based on the credit system. Also, robotics devices were analyzed on the example of Arduino,and suggestions and recommendations were developed for further development of students’ skills in working with these devices during independent work.*

Key words*: Credit system, robotics, microcontroller, Arduino, independent work.*

INTRODUCTION

Today, information technology has penetrated into all areas of our life and has become an integral part of it. In particular, the introduction of modern information technologies into the flied of education, educational methods and the teaching process enables organization based on new approaches. With this, the learning process is becoming faster and more qualitative. Information technologies are methods of information processing through various technical and software devices. When talking about information technology, it is impossible not to touch on the concept of robotics. Robotics is the most powerful and versatile field created by mankind so far (4.12). As more and more services are provided by robotic devices, our tasks are becoming easier. The field of robotics is developing day by day and entering all fields. In this scientific article, the application this devices in the process of educating students using the robotics fuel using modern achievements. Learning of robotics in independent learning processes was studied using the Adriano device. The

role of independent education in the training of future personnel is invaluable. In 1999, 29 countries signed the Declaration on participation in the process of creating a single educational environment in Bologna.Its aim was to adopt a system of comparable degrees, to facilities academic and professional recognition and to provide employment opportunities for graduates.The Bologna process is open to all countries, and the number of participating countries is approaching 50. All countries that have signed the Bologna Declaration have adopted a two level system of higher education (bachelor’s degree 3-4 years, master’s degree1-2years.). After high education, it is pissible to obtain a doctors’ degree (3-4years) (2.30). So what does the credit module system mean? Today a practice called the credit system is widely used in world experience to implement educational programs. The credit system includes 5 education and total labor costs.In world practice the most common systems are the United States Credit system (USCS), the British system of collection and Transfer of credits (SATS), the European credit system (ECTS), the Asia Pacific System of university Credit Transfer (UCTS), is consudered “The credit hour system was orginally developed in the United States (6.36). Until now, almost all European countries have reformed their national higher education systems and inroduced the credit education system.However,they differ significantly due to the fact that they focus on the solution of national socio-economic problems. Each country tried to preserve its unique educational system national historical and cultural traditions (5.62). Humanity has always tried as mush as possible to make every day life and wirk easier and this evolution has led to the emergence of machines robots.This whole area was robotics. One of the most actively developed countries in this field is Japan.There are about ten scientists in the coming years,people are hoping that they will become as familiar as using smartphones (3.42). Robotics is a sciensce the studies the development processes of automated technical systems based on electronics, as well as mechanics and programming.The production of robots is one of the mkst developedareas of modern quality.Imagine thousands of robots in factories and businesses now people are working instead of labor (1.142). Arduino is one of the most successful and influential free software and hardware projects or platforms in the world. The community has created both opensource software for programming microcontrollers,as well as a variety of free hardware boards to work with them.Everything is GNU GPL is lucensed under the. The Arduino platform is a set of embedded printed circuit boards.Arduino can be used to create autonomous automation objects and to connect to computer programs through standard wired and wireless interfaces.

CONCLUSION

We recommend that students use the Arduino platform when organizing their independent work in the field of “robotics”. The main reasons for this are: Arduino controllers are much cheaper than other devices of this type; Having many functions; Ease of learning; The possibility of creating new devices is very wide; Very compact in size; And many other useful aspects.

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