Diploma in Robotics And Embedded Systems

Riara University
nurturing innovators

SCHOOL OF COMPUTING SCIENCES

Introduction

The Course (Diploma in Robotics and Embedded Systems (D.R.E.S)) provides comprehensive training, majoring on Robotics and Embedded Systems concepts, for individuals interested in the dynamic and rapidly evolving fields of robotics, automation and embedded systems technologies at large. The course is designed to offer a combination of theoretical knowledge and practical skills, well integrated with other relevant and related computing skills & technologies with STEMs affiliation.

Who should take the course / Who is eligible to apply?

This Course Programme is ideal for students who wish to pursue industrial jobs in Automotive Engineering, Aerospace, Defence, Navigation, Telecommunications, Medical Equipment, Space Technology, Consumer electronics, Robotics etc.

The course is also ideal for practising engineers who may wish to acquire knowledge in the technologies related to embedded systems and robotics. It may also provide a sound basis for post-graduate advancement, opening up more job opportunities within research and development, consulting, academia, marketing etc.

The course can also be recommended for ICT teachers in both Primary and Secondary Schools, who teaches STEM related subjects, or introduction to Robotics.

It equips the learner with knowledge and technical skills, which can be utilized for self-employment as well.

Purpose of the Diploma Course / What will I learn?

This course programme is designed to provide necessary Knowledge & Practical Skills on Robotics & Embedded Systems. It will equip the learner with a comprehensive understanding of hardware & software technologies used in embedded systems.

Some of the concepts / units the course covers / explore, includes the following:

1. Digital and Analog Electronics Signals processing.

2. Electrical and Electronics basics, electrical circuit analysis & design.

3. Introduction to Microcontrollers& their applications – AVR, PIC, ARM etc,

4. Software development for embedded systems and microcontroller programming.

5. Programming languages (Assembly, C, C++, Python, Embedded C).

6. Debugging and testing techniques.

7. PCB design and fabrication.

8. Sensors, Actuator and their applications, integration & interfacing.

9. Operating Systems, Real-time operating systems (RTOS), Embedded OS System-on-chip (SoC) design.

10. Embedded Systems, control systems, automation, instrumentations, applications.

11. Mechanical systems, kinematics and dynamics.

12. Introduction to robotics systems and industrial automation.

13. Introduction to PLC programming, IoT, IoE and many other emerging technologies.

14. Hands-on practical projects and laboratory experiments with authentic real-world applications.

15. Industrial Attachments / Internships.

Career Opportunities:

Professionals who successfully undertake this course, can suitably work with manufacturing industries, Automotive Engineering, Aerospace, Telecommunications, Automation, Consumer electronics development, Robotics etc.

The course can also be an added advantage for Primary & Secondary ICT teachers, who teaches introduction to Robotics and other STEM related subjects.

Self-employment opportunities can also be realized.

Facilitation / Mode of Delivery

The programme is offered as regular programme during the day (8.00 am to 5.00pm). The course involves regular class lectures, as well as intensive laboratory practicals. Students are required to successfully complete 24 course units as well as internship, to graduate with a Diploma in Robotics and Embedded Systems (DRES).

Admission Requirements

Admission Requirements for the Diploma course Programme are as follows.

- A Mean grade of C (plain) in the Kenya Certificate of Secondary Education (KCSE), or its equivalent; or A IGCSE completed year 13 with minimum of C or

- An IB completed Grade 12 with minimum GPA of 3.00.

- A Pre-University certificate course from an institution recognized by the Senate.

- It is recommended for the students to have a personal computer (laptop).

Course Duration

The course takes two academic years to complete with academic programmes spread over Four Trimesters, and an internship for one semester to graduate with a Diploma in Robotics and Embedded Systems (DRES).

Fees

Tuition fees per trimester is Ksh. 73,700, excluding statutory fees. Statutory fees is Ksh 9000 (payable one time on admission)

Payment may be paid by direct deposit into RIARA UNIVERSITY Account at any branch of the following banks:

Kenya Commercial Bank, A/C No. 1132688035, Prestige Branch;
NCBA, A/C No. 6960380019, Upperhill Branch;
MPESA Paybill No. 805702.

Banker's cheques will be accepted. Cash, personal cheques and postal orders ARE NOT ACCEPTED.

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