National Institute of Electronics and Information Technology, Calicut

COURSE PROSPECTUS

Name of the Group: *Embedded Systems Group*
Name of the Course: Internet of Things (IoT) Assistant
Course Code: QG-03-IT-00344-2023-V1-NIELIT
NSQF Level: NSQF-aligned course of Level 3
Starting Date: 23rd Oct 2024
Duration: *300 hours/ 2 Months*
Course Coordinator: *Akula Sri Rama Pavan / Manoj*

Preamble: The "Internet of Things (IoT) Assistant" course immerses students in the rapidly evolving field of IoT, providing a comprehensive foundation in fundamental electronics and practical IoT applications. By balancing theoretical instruction with hands-on laboratory experiences, students will gain proficiency in identifying and troubleshooting basic electronic components, understanding microcontrollers and IoT ecosystems, and programming and interfacing with Arduino platforms. This course equips students with the skills to design, implement, and troubleshoot basic electronic circuits and IoT-based projects such as intelligent street lighting, home automation systems, and password-enabled digital locks. By the end of the course, students will be prepared for advanced study or careers in electronics and IoT development, ready to contribute to the growing field of IoT and bring innovative solutions to modern technological challenges.

Objective of the Course: The objective of the "Internet of Things (IoT) Assistant", course is to provide students with a comprehensive foundation in both fundamental electronics and the practical application of Internet of Things (IoT) concepts. Through a balanced mix of theoretical instruction and hands-on laboratory experiences, students will gain proficiency in identifying and troubleshooting basic electronic components, understanding microcontrollers and IoT ecosystems, and programming and interfacing with Arduino platforms. By the end of the course, students will be equipped with the skills to design, implement, and troubleshoot basic electronic circuits and IoT-based projects, such as intelligent street lighting, home automation systems, and password-enabled digital locks, thereby preparing them for advanced study or careers in electronics and IoT development.

Outcome of the Course: By the end of the "Internet of Things (IoT) Assistant" course, students will be proficient in identifying and troubleshooting basic electronic components, understanding microcontrollers and IoT ecosystems, and programming and interfacing with Arduino platforms. They will be capable of designing and implementing IoT-based projects such as intelligent street lighting, home automation systems, and password-enabled digital locks. Additionally, students will develop the skills to diagnose and resolve issues in IoT systems, effectively applying theoretical knowledge to practical scenarios. These competencies will prepare them for advanced

study or careers in electronics and IoT development, equipping them to contribute to the growing field of IoT with innovative solutions.

Expected Job Roles: Internet of Things (IoT) Assistant

Course Structure:

Sl. No	Module Title	Duration (Hours			Credit
		Theory	Lab	Total	
1	NOS 1: Identification and troubleshooting of Basic Electronics components	20	40	60	2
2	NOS 2: Conceptualising IoT Platform - Arduino	50	70	120	4
3	NOS 3: Conceptualising IoT-based use-cases	20	40	60	2
	Sub total (A)	90	150	240	8
4	Employability Skills (B)	30			1
5	OJT/Project* (C)	30			1
	Total Duration/Credit	**300**			**10**

Other Contents

I. **Course Fees**:

General Candidates: Course fee is Rs. 11,*652*/- (Including NSQF Registration and Exam Fees with taxes as applicable)

SC/ST Candidates : Tuition Fees are waived for SC/ST students admitted under SCSP/TSP. However they are required to remit an amount of **Rs. *1652/-*** towards NSQF registration and examination fee at the time of joining. This amount will be considered as security deposit and will be refunded after successful completion of the course on first attempt. If the student fails to complete the course successfully, this amount along with any other caution/security deposits by the student will be forfeited.

It is mandatory that students attending NSQF aligned courses have to appear for NIELIT NSQF examination conducted by NIELIT Headquarter, New Delhi on fee payable basis. Successful candidates will be issued certificates by NIELIT HQ. If the student fails to clear the exam, **participation** certificates will be issued by NIELIT Calicut on passing the exam conducted by NIELIT Calicut.

Module wise Course Fee: Not Applicable for this course

II. **Registration Fee:** An amount of Rs.1000/- (including all taxes as applicable) (nonrefundable) should be paid at the time of registering for the course.

This fee shall be considered as part of course fee, if the student joins the course. If the student does not join for the registered course / any of the registered courses, fee paid shall be forfeited.

SC/ST Candidates: Registration fee is Rs.500/- (nonrefundable)

However above the registration fee shall be refunded on few special cases as given below
➢ Course postponed and new date is not convenient for the student
➢ Course canceled in advance, well before the admission date

III. Course Fee Structure:

Fees	*Amount for General Candidates	Amount for SC/ST Candidates. (considered as caution/security deposit)	Due Date (on or before)
Registration Fee	Rs.1000/-	Rs.500/-	During Registration
**Advance Fee/Caution deposit	*Rs. 1000/-*	*Nil*	*14/10/2024 (counselling day)*
Course Fee	*Rs. 9,652/-*	Nil	
NSQF Registration & Exams Fee	*Included in the Course fee*	*Rs. 1652/- (Refundable on successful completion of course on first attempt)*	
Total Fee	*Rs. 11,652/-*	*Nil*	

* Above fees is inclusive GST as per the prevailing rate (presently 18%) and revision if any by Government, shall be applicable at the time of payment

\# Fine will be applicable for late fee payment.

** Advance fee - After publication of the first selection list, the students in the first selection list have to pay the Advance Deposit within the due date to take the provisional admission. Students in the additional selection list should pay the Advance and course fees together on or before counseling day. The registration fee will be added to the caution deposit/course fee if the candidate takes provisional admission.

IV. Eligibility: Any one of the following
• Grade 10th Pass
• Grade 8th Pass with 2 Years of NTC/NAC after 8th
• Grade 8th Pass with 2 years of relevant experience

V. Number of Seats: *20*

VI. Selection of candidates: Based on marks in the qualifying exam.

VII. Test/Interview (*if applicable*): *Not Applicable*

VIII. Counseling/Admission: *14-10-2024*

IX. Important Dates (if applicable):
Last date for applying: **06-10-2024**
Selection intimation through mail/website: **08-10-2024 (after 2 PM)**
Certificate Verification/Admission (online mode): **14-10-2024**

X. Course Timings:
Live sessions covering Theory will be scheduled between 9.30 am to 5.00 pm. Assignments and projects can be done at any time of your convenience and submitted before the deadlines provided. Support for completing lab work/assignments will be provided at scheduled times.

XI. Placement: Placement assistance will be provided.

XII. Lab Facilities
Skilled Manpower Advanced Research and Training (SMART) facility or Virtual Prototyping Lab is set up at NIELIT Calicut as part of Chip to Start-up (C2S) programme of MeitY for the proliferation of advanced VLSI and Embedded system design training, research, and electronics systems development across the country.

XIII. Course Contents: Detailed Course Syllabus /Contents Link

Click here for General Terms and Conditions – Applicable to all courses

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