

Hindustan College of Science & Technology, Farah, Mathura
Department of Electronics & Communication Engineering

2020/ EC/ODD

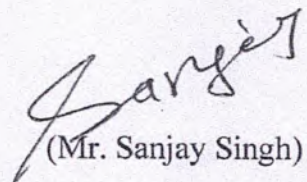
Date: 30.07.2020

Notice

All the students of 2nd year and 3rd year are hereby informed that the department of Electronics and Communication Engineering is going to schedule a value added course in “**Internet of Things (IOT) with Data Analysis**” at our department. This course has been specially designed to enhance your skills and knowledge beyond the regular academic curriculum, providing you with a competitive edge in today's dynamic job market.

Please note that registration will be open from 05/08/2020 to 19/08/2020. Late registrations will not be entertained, so ensure that you complete the registration process within the stipulated time frame.

For any further inquiries or clarifications regarding registration, kindly reach out to Mr. Sanjay Gupta (Lab Technician, ECE Deptt.).


(Mr. Sanjay Singh)

Dy. HOD ECE Deptt.
Head Deptt. Engg.
Dept. of Electronics & Comm. Engg.
Hindustan College of Science & Technology
Farah, Mathura


Director
Hindustan College of
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FARAH (MATHURA)



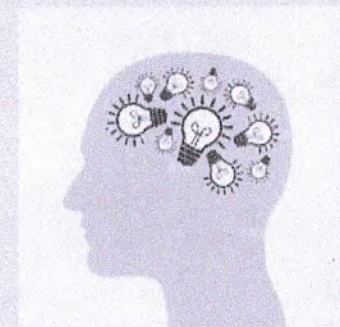
HINDUSTAN COLLEGE OF SCIENCE & TECHNOLOGY,
FARAH -MATHURA
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



Value Added Course
VEC2003 -- Internet of Things (IOT) with Data Analysis

20th Aug '2020 – 31st Dec 2020 – Every Thursday: 3:10 PM – 4:50 PM

Students From Any Branch Can Join the Course



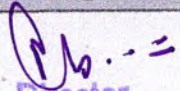
By

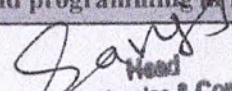
Mr. Honey Kumar
Assistant Professor, Electronics & Communication Engineering
Research Interest: IoT based projects, VLSI Design

Registration Dates
5th Aug 2020 – 19th Aug 2020

For Registration: Please contact
Mr. Sanjay Gupta, Lab Techniques, Department of ECE

Prerequisites: Familiarity with fundamental data analysis concepts with basic knowledge of knowledge of sensors, transducer and programming in Python.


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Value Added Course

VEC2003 -- Internet of Things (IOT) with Data Analysis
20th Aug '2020 – 31st Dec 2020 – Every Thursday: 3:10 PM – 4:50 PM

Course Objectives

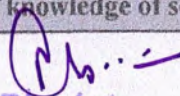
The main objective of this value added course are as follows:

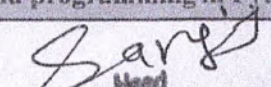
1. This course is designed to provide participants with a comprehensive understanding of Internet of Things (IoT) technologies and their integration with data analysis techniques. The course aims to equip students with the skills necessary to design, implement, and analyze IoT systems while harnessing the power of data to make informed decisions. Through a combination of theoretical concepts and hands-on exercises, students will gain proficiency in building IoT applications and utilizing data analysis tools.
2. Divided into five modules, we will learn by doing. We will start with basic definitions and concept of IoT and data analysis.
3. This course focuses on the latest microcontrollers with application development, product design and prototyping using IoT supported hardware. Ideally suited for engineering students and graduates with a basic understanding of electronics and microprocessors. They are also able to design & develop IoT Devices. Also understand the data collection from IoT devices and analysis of this data for getting appropriate information.

Course Syllabus

Units	Details	Course Out comes
1	Introduction to IOT and Data Analysis : What is Internet of Things ?, How Internet of Things works, How Things Talk to Internet, Exploring the role of data analysis in deriving insights from IoT-generated data, Overview of data collection, storage, and processing techniques for IoT data.	CO1
2	IOT Architecture : Three Layer Architecture, Four Layer Architecture, Five Layer Architecture	CO2
3	Hardware : Functional blocks of an IoT ecosystem, IoT – Sensors, Actuators, Wearable Electronics, Standard Devices, Smart Objects and Connecting Smart Objects	CO3
4	Design and Development : Design Methodology, Embedded computing logic, Microcontroller, System on Chips, IoT system building blocks, IoT Platform overview: Overview of IoT supported Hardware platforms such as: Raspberry pi, Arduino Board	CO4
5	Data Collection and Data Analysis for IOT : Techniques for collecting data from sensors and IoT devices, Cleaning, filtering, and preprocessing IoT data for analysis, Introduction to data analysis techniques: descriptive, diagnostic, predictive, and prescriptive, Utilizing data analysis libraries and tools for IoT data	CO5

Prerequisites: Familiarity with fundamental data analysis concepts with basic knowledge of knowledge of sensors, transducer and programming in Python.


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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



Value Added Course
VEC2003 -- Internet of Things (IOT) with Data Analysis
20th Aug '2020 – 31st Dec 2020 – Every Thursday: 3:10 PM – 4:50 PM

Course Outcomes

- CO1** Understand the fundamental concepts of IoT and its integration with data analysis.
- CO2** Discuss the layered architecture of an IoT system and their operations.
- CO3** Able to understand the use of various basic hardware to design an IoT system.
- CO4** Design and development of IoT devices using IoT supported hardware platforms such as: Raspberry pi, Arduino Board.
- CO5** Collect, preprocess and analyze IoT-generated data effectively.

CO-PO Mappings

CO5	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3											3	3	
CO2	3		3									3	3	
CO3	3	2	3									3	3	
CO4	3	2	2									3		
CO5	3	2	2									3		2
Average	3	2	2.5									3	3	

Evaluation Criteria: 1. Class attendance, Group project and its presentation, Quiz and Viva.

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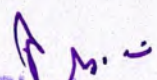
(Signature)
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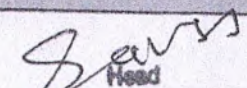
Value Added Course

VEC2003 - - Internet of Things (IOT) with Data Analysis
20th Aug '2020 - - 31st Dec 2020 - - Every Thursday: 3:10 PM - 4:50 PM

Program Schedule

Session	Date	Time	No of Lectures	Session Topic	Resource Person	
1	20-08-2020	3:10 PM - 4:50 PM	2	Preamble of the course	Mr. Honey Kumar	
2	27-08-2020	3:10 PM - 4:50 PM	2	Introduction to IOT : What is Internet of Things ?, How Internet of Things works, How Things Talk to Internet	Mr. Honey Kumar	
3	03-09-2020	3:10 PM - 4:50 PM	2		Exploring the role of data analysis in deriving insights from IoT-generated data	Mr. Honey Kumar
4	10-09-2020	3:10 PM - 4:50 PM	2	Overview of data collection, storage, and processing techniques for IoT data.	Mr. Honey Kumar	
5	17-09-2020	3:10 PM - 4:50 PM	2	IOT Architecture: Three Layer Architecture	Mr. Honey Kumar	
6	24-09-2020	3:10 PM - 4:50 PM	2		Four Layer Architecture	Mr. Honey Kumar
7	01-10-2020	3:10 PM - 4:50 PM	2		Five Layer Architecture	Mr. Honey Kumar
8	08-10-2020	3:10 PM - 4:50 PM	2	Hardware: Functional blocks of an IoT ecosystem	Mr. Honey Kumar	
9	22-10-2020	3:10 PM - 4:50 PM	2		IoT - Sensors, Actuators,	Mr. Honey Kumar
10	29-10-2020	3:10 PM - 4:50 PM	2	Wearable Electronics, Standard Devices	Mr. Honey Kumar	
11	05-11-2020	3:10 PM - 4:50 PM	2		Smart Objects and Connecting Smart Objects	Mr. Honey Kumar
12	19-11-2020	3:10 PM - 4:50 PM	2	Design And Development: Design Methodology, Embedded computing logic	Mr. Honey Kumar	
13	26-11-2020	3:10 PM - 4:50 PM	2		Microcontroller, System on Chips	Mr. Honey Kumar
14	03-12-2020	3:10 PM - 4:50 PM	2	IoT system building blocks	Mr. Honey Kumar	
15	10-12-2020	3:10 PM - 4:50 PM	2		IoT Platform overview: Overview of IoT supported Hardware platforms such as: Raspberry pi, Arduino Board	Mr. Honey Kumar
16	17-12-2020	3:10 PM - 4:50 PM	2	Data Collection and Data Analysis for IOT: Techniques for collecting data from sensors and IoT devices, Cleaning, filtering, and preprocessing IoT data for analysis	Mr. Honey Kumar	
17	24-12-2020	3:10 PM - 4:50 PM	2		Introduction to data analysis techniques: descriptive, diagnostic, predictive, and prescriptive	Mr. Honey Kumar
18	31-12-2020	3:10 PM - 4:50 PM	2	Utilizing data analysis libraries and tools for IoT data.	Mr. Honey Kumar	
Total Number of Lectures covered			36 (30 Hours)			


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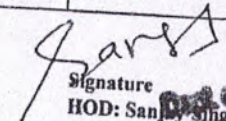
Hindustan College of Science and Technology - Mathura
Department Name: Electronics & Communication Engineering

CLASS TIME TABLE FOR ODD SEMESTER 2020-21

SESSION:	2020-2021				W.E.F :	4/8/2020						
YEAR/SEM-SEC:	2nd/IIISEM				ROOM.NO :	304						
Time / Day	I	II	III	IV	CLASS TEACHER:		Mr.Himanshu P. Rajput(HPR)					
	10:10 TO 11:00	11:00 TO 11:50	11:50 TO 12:40	12:40 TO 01:30	V	VI	VII	VIII				
MONDAY	MATH	TC	ED	DSD	LUNCH	01:30 TO 02:20	02:20 TO 03:10	VII	VIII			
	MP	MS	ML	DG				03:10 TO 04:00	04:00 TO 04:50			
TUESDAY	304	304	304	304				NAS	ED LAB			
	TC	PDP	MATH	304				HPR				
	MS							108				
WEDNESDAY	304	ED	PYTHON	TC				ED	MINI Project			
	DSD							ML		304		
	DG							304		PK	MS	
THURSDAY	NAS	MATH	DSD	304				NAS	DSD LAB			
	HPR	MP	DG	PK				HPR				
	108	304	304	304				108				
FRIDAY	MATH	PYTHON	DSD	ED				ED	IoT with Data Analysis (VAC)			
	MP	PK	DG	ML				ML				
	304	304	304	304				304				
SATURDAY	DSD	PYTHON	NAS	MATH				PDP	NAS LAB	NAS		
	DG	PK	HPR	MP						HPR		
	304	304	108	304						108		
Name of the Subject		Subject Code	Name of the Faculty					Total No. of Lect./Tut./Practical				
Electronic Devices		KEC301	A.Mukund Lal (ML)					Lect.	Tut.	Pract.		
Digital System Design		KEC302	Mrs. Deepti Gupta(DG)					4	1			
Network Analysis and Synthesis		KEC303	Mr.Himanshu P. Rajput(HPR)		4	1						
Technical Communication		KAS301	Dr.Mamta Sharma(MS)		4	1						
Maths IV		KAS302	Dr.Mahendra Pratap Singh(MP)		4	0						
Python Programming		KNC302	Pramod Kumar(PK)		4	1						
Electronics Devices Lab		KEC351	A.Mukund Lal/TSS Senthil		3	1						
Digital System Design Lab		KEC352	Mrs. Deepti Gupta(DG)/Anchal Katiyar						2			
Network Analysis and Synthesis lab		KEC353	Mr.Himanshu P. Rajput(HPR)/Mohit Gupta						2			
Mini Project or Internship Assessment		KEC354	Ajeet Singh/Ashish Pratap Singh						2			
IoT with Data Analysis (VAC)		VEC2003	Honey Kumar (HK)						2			

Signature
 Time Table Incharge: Ajeet Singh


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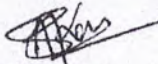

 Signature
 HOD: Sanjay Singh
 Head
 Department of Electronics & Comm. Engg.
 Hindustan College of Science & Technology
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Hindustan College of Science and Technology - Mathura
Department Name: Electronics & Communication Engineering

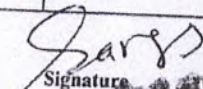
CLASS TIME TABLE FOR ODD SEMESTER 2020-21

SESSION:	2020-2021				W.E.F :	4/8/2020				
YEAR/SEM-SEC:	3rd/V sem				ROOM.NO :	306				
Time / Day	I	II	III	IV	CLASS TEACHER:		Ajeet Singh(AS)			
	10:10 TO 11:00	11:00 TO 11:50	11:50 TO 12:40	12:40 TO 01:30	V	VI	VII	VIII		
MONDAY	EMI	DSP	MPMC	IC	LUNCH	01:30 TO 02:20	02:20 TO 03:10	03:10 TO 04:00	04:00 TO 04:50	
	ML	SS	RM	AS		VLSI TECH	IC LAB	MPMC	RM	306
TUESDAY	306	306	306	306		HK				
	DSP	VLSI TECH	EMI	MPMC		306				
	SS	HK	ML	RM		306				
WEDNESDAY	306	306	306	306		IND.CON.S.	VLSI TECH	MPMC LAB	MPMC	RM
	IC	DSP	SHS	HK		306				
THURSDAY	AS	SS	SHS	HK		PDP	IND.CON.S.	DSP LAB	IoT with Data Analysis (VAC)	MINI Project
	306	306	306	306						
	IC	DSP	VLSI TECH	MPMC						
FRIDAY	EMI	SS	HK	RM		VLSI TECH	IC	MINI Project	MPMC LAB	MPMC
	ML	306	306	306						
SATURDAY	306	EMI	VLSI TECH	IC		HK	AS	MPMC LAB	MPMC	RM
	MPMC	ML	306	306						
	RM	306	306	306						

Name of the Subject	Subject Code	Name of the Faculty	Total No. of Lect./Tut./Practical		
			Lect.	Tut.	Pract.
Integrated Circuits	KEC-501	Ajeet Singh(AS)	4	1	0
Microprocessor & Microcontroller	KEC-502	Mrs. Rupali Mahajan(RM)	4	1	0
Digital Signal Processing	KEC-503	Mr. Sanjay Singh(SS)	4	1	0
VLSI Technology	KEC-053	Mr. Honey Kumar(HK)	4	1	0
Electronics Measurement & Instrumentation	KEC-057	Mr. A.Mukund Lal(ML)	4	1	0
Constitution of India, Law and Engineering	KNC501	Mr. Shashi Shekhar(SHS)	4	1	0
Integrated Circuits Lab	KEC-551	Ajeet Singh(AS)/Anchal Katiyar	3	0	0
Microprocessor & Microcontroller Lab	KEC-552	Mrs. Rupali Mahajan(RM)/TSS. Senthil			2
Digital Signal Processing Lab	KEC-553	Mr. Sanjay Singh(SS)/Mohit Gupta			2
Mini Project/Internship	KEC-554	Honey Kumar/Ashish Pratap Singh			2
Constitution of India, Law and Engineering	KNC501	Dr. Archana Gautam			2
IoT with Data Analysis (VAC)	VEC2003	Honey Kumar (HK)			3
					2

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 Time Table Incharge: Ajeet Singh


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Department of ELECTRONICS AND COMMUNICATION ENGINEERING

Value Added Course - Registration Sheet

Course Name: Internet of Things (IOT) with Data Analysis Course Code: VEC2003

Session 2020-21

From August, 2020 to December, 2020

Sr. No.	Roll No.	Name	Department	Semester	Signature of Student
1	1900640310001	Dhiraj Singh	ECE	III	Dhiraj
2	1900640310002	Gaurav Yadav	ECE	III	Gaurav
3	1900640310003	Jay Babu Gupta	ECE	III	Jay babu
4	1900640310004	Neha Sharma	ECE	III	Neha
5	1900640310005	Shubhangi Shakya	ECE	III	Shubhangi
6	1900640310006	Tanya Tiwari	ECE	III	Tanya
7	1900640310007	Vimal Gupta	ECE	III	Vimal Gupta
8	1806431001	Aastha Garg	ECE	V	Aastha
9	1806431002	Abhay Goyal	ECE	V	Abhay
10	1806431003	Arpit Yadav	ECE	V	Arpit
11	1806431004	Devashish Verma	ECE	V	Devashish
12	1806431005	Dhurv Chaudhary	ECE	V	Dhurv
13	1806431006	Gaurav Raj	ECE	V	Gaurav
14	1806431007	Gurman Singh Bhatia	ECE	V	Gurman
15	1806431009	Harsh Yadav	ECE	V	Harsh
16	1806431010	Hemant Parihar	ECE	V	Hemant
17	1806431011	Lalita	ECE	V	Lalita
18	1806431012	Moni Priya	ECE	V	Moni
19	1806431013	Piyush Pratap Singh	ECE	V	P.P. Singh
20	1806431015	Priyanshi Pachouri	ECE	V	Priyanshi
21	1806431016	Shruti Mehra	ECE	V	Shruti
22	1806431017	Vikas Tripathi	ECE	V	Vikas
23	1900640319001	Aashi Gupta	ECE	V	Aashi
24	1900640319002	Pragati Singh	ECE	V	Pragati

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Department of ELECTRONICS AND COMMUNICATION ENGINEERING

Value Added Course - Attendance sheet

Course Name: Internet of Things (IOT) with Data Analysis Course Code: VEC2003

Session 2020-21 (Year 2020)

Session wise Attendance Sheet

S. No.	Roll No.	Name	SEM	Signature of the Student																	
				1 20-Aug	2 27-Aug	3 3-Sep	4 10-Sep	5 17-Sep	6 24-Sep	7 1-Oct	8 8-Oct	9 22-Oct	10 29-Oct	11 5-Nov	12 19-Nov	13 26-Nov	14 3-Dec	15 10-Dec	16 17-Dec	17 24-Dec	18 31-Dec
1	1900640310001	Dhiraj Singh	III	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	
2	1900640310002	Gaurav Yadav	III	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	
3	1900640310003	Jay Babu Gupta	III	P	P	P	P	P	P	A	P	P	P	P	P	P	A	P	P	P	
4	1900640310004	Neha Sharma	III	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
5	1900640310005	Shubhangi Shakya	III	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	
6	1900640310006	Tanya Tiwari	III	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	
7	1900640310007	Vimal Gupta	III	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	
8	1806431001	Aastha Garg	V	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
9	1806431002	Abhay Goyal	V	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	
10	1806431003	Arpit Yadav	V	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	
11	1806431004	Devashish Verma	V	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	
12	1806431005	Dhurv Chaudhary	V	P	P	P	P	P	P	P	A	P	P	P	P	A	P	P	P	P	
13	1806431006	Gaurav Raj	V	P	P	A	P	A	P	P	P	P	P	P	A	P	P	P	P	P	
14	1806431007	Gurman Singh Bhatia	V	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	

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15	1806431009	Harsh Yadav	V	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
16	1806431010	Hemant Parihar	V	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
17	1806431011	Lalita	V	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
18	1806431012	Moni Priya	V	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P
19	1806431013	Piyush Pratap Singh	V	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
20	1806431015	Priyanshi Pachouri	V	P	P	P	A	P	P	P	A	P	P	P	P	P	P	P	P	P	P
21	1806431016	Shruti Mehra	V	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P
22	1806431017	Vikas Tripathi	V	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
23	1900640319001	Aashi Gupta	V	P	P	P	P	P	P	P	P	P	P	A	P	P	A	P	P	P	P
24	1900640319002	Pragati Singh	V	A	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P

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HINDUSTAN COLLEGE OF SCIENCE & TECHNOLOGY,
FARAH -MATHURA



Certificate of Completion

Department of ELECTRONICS & COMMUNICATION ENGINEERING
Academic Session 2020-21

This is to certify that Ms Tanya Tiwari (Roll No: 1900640310006), III semester, Department of Electronics & Communication Engineering has successfully completed 30 hours of Value Added Course VEC2003 titled "Internet of Things (IOT) with Data Analysis".

[Signature]
Head of Department

[Signature]
Course Coordinator

[Signature]
Director

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HINDUSTAN COLLEGE OF SCIENCE & TECHNOLOGY,
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Certificate of Completion

Department of ELECTRONICS & COMMUNICATION ENGINEERING
Academic Session 2020-21

This is to certify that Mr Harsh Yadav (Roll No: 1806431009), V semester, Department of Electronics & Communication Engineering has successfully completed 30 hours of Value Added Course VEC2003 titled "Internet of Things (IOT) with Data Analysis".

[Signature]
Head of Department

[Signature]
Course Coordinator

[Signature]
Director

[Signature]
Director
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