Department of Electronics and Communication Engineering

JUIT Waknaghat

A meeting of Board of Studies of the Department of Electronics and Communication Engineering was held on 23-07-2021 at 03:00 PM in online mode.

The following members were present

1.	Prof. Samir Dev Gupta	Dean Academics & HoD CSE Department
2.	Prof. Ashok Gupta	Dean Academics and Research
3.	Dr. Rajiv Kumar	Chairman
4.	Prof. D. Ghosh	External Member
5.	Dr. Balwinder Singh	External Member
6.	Dr. Shruti Jain	Member Secretary
7.	Dr. Shweta Pandit	Member
8.	Dr. Salman Raju	Member
9.	Dr. Sunil Datt Sharma	Member
10.	Dr. Vikas Baghel	Member
11.	Dr.Emjee P	ECE Department
12.	Dr.Nafis U Khan	ECE Department
13.	Mr. Munish Sood	ECE Department
14.	Mr. Anuj Maurya	ECE Department
15.	Dr. Ashish Kumar	HoD, Civil Engineering Department
16.	Dr. Pradeep Kumar Gupta	Representative CSE & IT Department
17.	Dr. Anil Kant	Representative BT& BI Department
18.	Dr. Neel Kanth	Representative Mathematics Department
19.	Mr. Pramod Kumar	Co-opted Member for online issue

Leave of absence

Leave of absence was granted to the Prof. C.C. Tripathi by the Chairman Board of Studies.

The Chairman welcomed all the members who were present for the meeting. The meeting was thereafter deliberated by Dr. Shruti Jain on agenda items as had been approved by the Chairman.

Item No. 1 : **To approve the minutes of last meeting of the BoS held on December 12, 2020.**

Dr. Shruti Jain has presented the last minutes of meeting and overview the course structure of M.Tech (ECE), M.Tech. in IoT and B.Tech. in ECM which was approved in the last BoS.

The minutes of the last BoS meeting were approved by the BoS members.

Item No. 2 : **Interchange of following two courses in 160 credit scheme – Automatic Control Systems & Lab (4 credits) of 3rd sem and Fundamentals of Signals and Systems & Lab (5 credits) of 4th sem for 2021-2022 batch onwards.**

Dr. Rajiv Kumar said that Fundamentals of Signals and Systems course is pre-requisite of many ECE courses similar to Modern Analog and Digital Communication, therefore it is not appropriate to run both these courses in the same semester. Therefore, the shifting of Fundamentals of Signals and Systems course and Lab from 4th semester to 3rd semester and Automatic Control Systems & Lab from 3rd to 4th semester is proposed for approval.

The viewpoints of the BoS members were asked to which Dr. Balwider Singh was of opinion to have balanced credits after swapping. In addition, Dr. Debashish Ghosh also agreed with the proposal and conveyed that since for the Automatic Control Systems course, knowledge of Laplace transform, ROC etc is required which will be covered in Fundamentals of Signals and Systems course.

Other BoS members also agreed for the shifting of the courses as proposed.

Approved.

Item No. 3 : **To review the structure of 160 credit ECE scheme with reference to Professional Electives (PE) courses and Open electives (OE) courses.**

Dr. Rajiv Kumar said that it is proposed to move most of the PEs and OEs to the 5th , 6th , and 7th semester in order to reduce the burden of 8th semester students. He informed that however, the number of credits for PE and OE in the new proposed scheme will remain same. Afterwards, Dr. Rajiv Kumar has presented the existing position of OEs and PEs where he said that there are three OEs and one PE in 6th semester, one OE and two PEs in 7th semester and one OE and three PEs in 8th semester.

Dr. Ashok Gupta has asked for the comparison of the proposed revised scheme with the other department to which Dr. Rajiv Kumar informed that this new scheme is matched with the CSE and Civil department.

Further, in the proposed scheme there will be three PEs and one OE in 6th semester, two OEs and two PEs in 7th semester, and two OEs and one PE in 8th semester. All PEs and OEs are of 3 credits with 3 hours.

Approved.

Item No. 4 : **To consider the review, assessment and approval of 1st and 2nd Semester's syllabi of M.Tech. *Electronics and Communication Engineering*.**

Dr. Sunil Datt presented and informed the committee that there are total six courses in first and second semester of ECE. Dr. Balwinder Singh queries about Object Oriented Programming (OOPs) course mentioned in the structure and was of opinion that this course the students already study in their B.Tech. program. Dr. Rajiv Kumar mentioned about OOPs course in M.Tech. structure will be advanced version of B.Tech. OOPs program to which Dr. Balwinder Singh agreed.

Dr. Sunil Datt Sharma afterwards presented the courses available for Departmental electives. Dr. Balwinder Singh mentioned to have the courses similar to the one

studied in B.Tech. level under DE-V and has suggested to have advanced form of these courses for the M.Tech. structure.

Dr. Ashok Gupta advised to have at least one OE bucket available to the students in order not to restrict the student within the department boundaries. He was of opinion of the interdisciplinary course structure. Dr. Balwinder Singh also agreed with his suggestion. In this context, it is mentioned to convert one DE to OE. Dr. Balwinder Singh said to have OE as it is also mentioned in the AICTE modular syllabus policy for both M.Tech. Dr. Debashish Ghosh said that both AICTE policy and University norms could be added.

Based on the suggestion of committee members, Departmental Elective VI was converted into Open Electives and the electives of particular bucket has been shifted to another buckets of Department Elective. Changes has been incorporated and added as *Annexure I*.

All course syllabi have been approved with incorporating the recommendations and suggestions of BoS members.

Item No. 5 : **To consider the review, assessment and approval of 1st and 2nd Semester's syllabi of M.Tech. in ECE with specialization in *Internet of Things***

This agenda item is also presented by Dr. Sunil Datt Sharma and informed the committee members that there are same core courses as that of M.Tech. in ECE scheme.

Dr. Ashok Gupta advised to have at least one OE bucket available to the students in order not to restrict the student within the department boundaries. He was of opinion of the interdisciplinary course structure.

Based on the suggestion of committee members, Departmental Elective VI was converted into Open Electives and the electives of particular bucket has been shifted to another bucket of Department Elective. Changes has been incorporated and added as *Annexure II*.

Also, there is following change in the two course names:

a) IoT Signal Processing to Signal Processing for IoT
b) Data Acquisition and Intelligent signal Processing to Intelligent Signal Processing

All course syllabi have been approved with incorporating the recommendations and suggestions of BoS members.

Item No. 6 : **To consider the review, assessment and approval of all syllabi of new B.Tech. branch: *Electronics and Computer Engineering (ECM)*.**

Dr. Shruti Jain informed that the course structure of ECM was already approved in the last BoS. The syllabus of various courses was designed in consultation with the faculty members of CSE department. She informed that there is total 90 courses (with professional elective) in the ECM excluding first year, second year, Basic Science and Engineering Science courses. She informed that we are left with the designing of two lab courses namely *Wireless Sensor Networks Lab and Game theory with Computer Applications lab*, which are elective courses lab, due to the unavailability of the resources.

She informed that all the syllabus was reviewed by different faculty members of the department and suggestions has been incorporated by the coordinator.

Dr. Ashok Gupta was of opinion to fix the syllabus at least in tentative form beforehand to which Dr. Shruti Jain informed that 99% of the scheme's courses are final.

Rest all course syllabi have been approved as recommended.

Item No. 7 : **Any other permission with the chair.**

1. **Reporting item: To approve the syllabi for newly floated Open Electives for 2018 batch onwards**

Following six courses were approved

1. Automation and Robotics
2. Machine Learning for Wireless Communications
3. Signal Processing for Machine Learning
4. Digital Systems
5. Artificial Intelligence Techniques for Genomic Signal Processing
6. Image Sensing and Reconstruction

2. **Reporting item: To approve the syllabi for newly floated Professional Electives for 2018 batch onwards**

Following courses were approved

1. AVR Based Embedded System Design
2. AVR Based Embedded System Design Lab

3. **Correction in course contents of Electrical Sciences**

As recommended was approved

The meeting concluded at 4:30 PM with a vote of thanks by **Dr. Rajiv Kumar**, Chairman Board of Studies.

Annexure I

Master of Technology in Electronics & Communication Engineering

SEMESTER - I								
S. No.	**Course Code**	**Name of the Subjects**		**Course Hours**			**Total**	**Credits**
			C/E	L	T	P		
1		Embedded Systems and Applications	C	3	0	0	3	3
2		Sensor and Smart Instrumentation	C	3	0	0	3	3
3		Object Oriented Programming	C	3	0	0	3	3
4		Departmental Elective - I	E	3	0	0	3	3

5		Departmental Elective - II	E	3	0	0	3	3
6		Departmental Elective - III	E	3	0	0	3	3
7		Advanced Communication Lab	C	0	0	6	3	3
						Total	**21**	**21**
SEMESTER - II								
S.No.	**Course Code**	**Subject Names**		**Course Hours**			**Total**	**Credits**
			C/E	**L**	**T**	**P**		
1		Digital System design using verilog HDL	C	3	0	0	3	3
2		Artificial Intelligence and Expert Systems	C	3	0	0	3	3
3		Network Security Protocols	C	3	0	0	3	3
4		Departmental Elective - IV	E	3	0	0	3	3
5		Departmental Elective - V	E	3	0	0	3	3
6		Open Elective	E	3	0	0	3	3
7		Advanced Signal Processing Lab	C	0	0	6	3	3
						Total	**21**	**21**
SEMESTER - III								
S. No.	**Course Code**	**Name of the Subjects**		**Course Hours**			**Total**	**Credits**
			C/E	**L**	**T**	**P**		
1		Literature Review / Seminar	C	0	0	6	6	3
2		Dissertation Part - I	C	0	0	28	28	14
						Total	**34**	**17**
SEMESTER - IV								
S.No.	**Course Code**	**Subject Names**		**Course Hours**			**Total**	**Credits**
			C/E	**L**	**T**	**P**		
1		Seminar	C	0	0	6	6	3
2		Dissertation Part - II	C	0	0	28	28	14
						Total	**34**	**17**

LIST OF ELECTIVES FOR M. TECH ECE								
ELECTIVE - I								
S.No.	**Course Code**	**Subject Names**		**Course Hours**			**Total**	**Credits**
			C/E	**L**	**T**	**P**		
1		Advanced Cognitive Radio	E	3	0	0	3	3
2		Advanced Software Defined Radio	E	3	0	0	3	3
3		Fault Tolerant Communication Networks	E	3	0	0	3	3
4		Advanced Next Generation Communication	E	3	0	0	3	3
Elective - II								
1		Advanced Control Systems	E	3	0	0	3	3
2		Networked Distributed Control	E	3	0	0	3	3
3		Fundamentals of MIMO Systems	E	3	0	0	3	3
4		Mobile Adhoc and Sensor Network	E	3	0	0	3	3
Elective - III								
1		Architecture and Algorithms for DSP Systems	E	3	0	0	3	3
2		Statistical & Adaptive Signal Processing	E	3	0	0	3	3
3		Statistical Signal Processing	E	3	0	0	3	3
4		Radar and Sonar Signal Processing	E	3	0	0	3	3
5		Computational Intelligence and Applications	E	3	0	0	3	3
Elective - IV								
1		Biomedical signal and Image Processing	E	3	0	0	3	3
2		Advanced Digital Image Processing	E	3	0	0	3	3
3		CMOS Digital Design Techniques	E	3	0	0	3	3
4		Real Time Embedded System	E	3	0	0	3	3
5		VLSI in Biomedical Processing System	E	3	0	0	3	3
Elective - V								
1		Anteena and Radio Wave Propagation	E	3	0	0	3	3

2		Antenna Theory and Techniques	E	3	0	0	3	3
3		RF IC Design	E	3	0	0	3	3
4		Analog IC Design	E	3	0	0	3	3

Annexure II

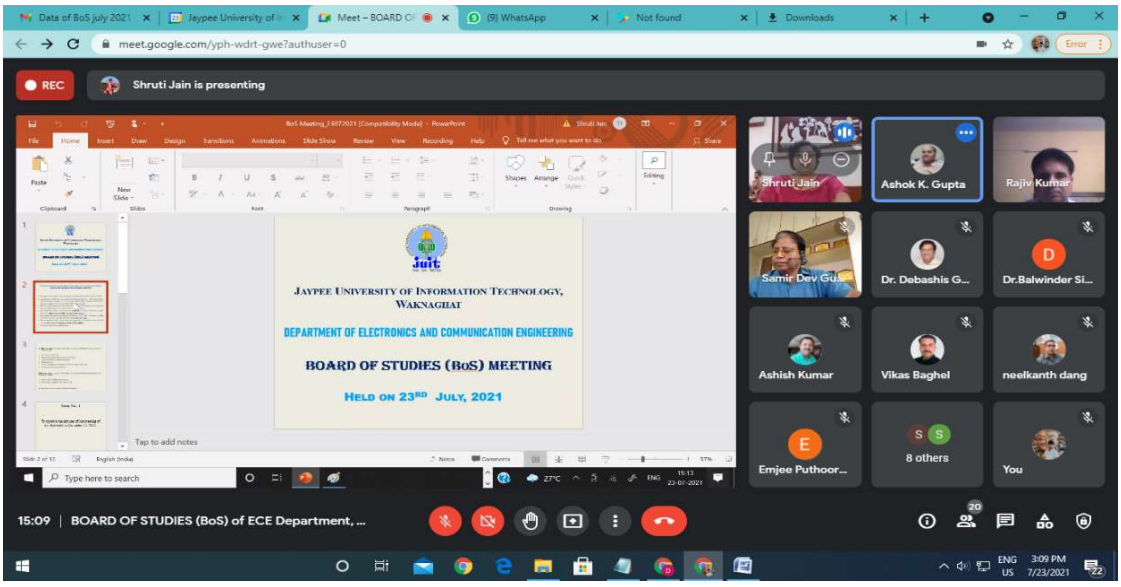
Master of Technology in Internet of Things (ECE)

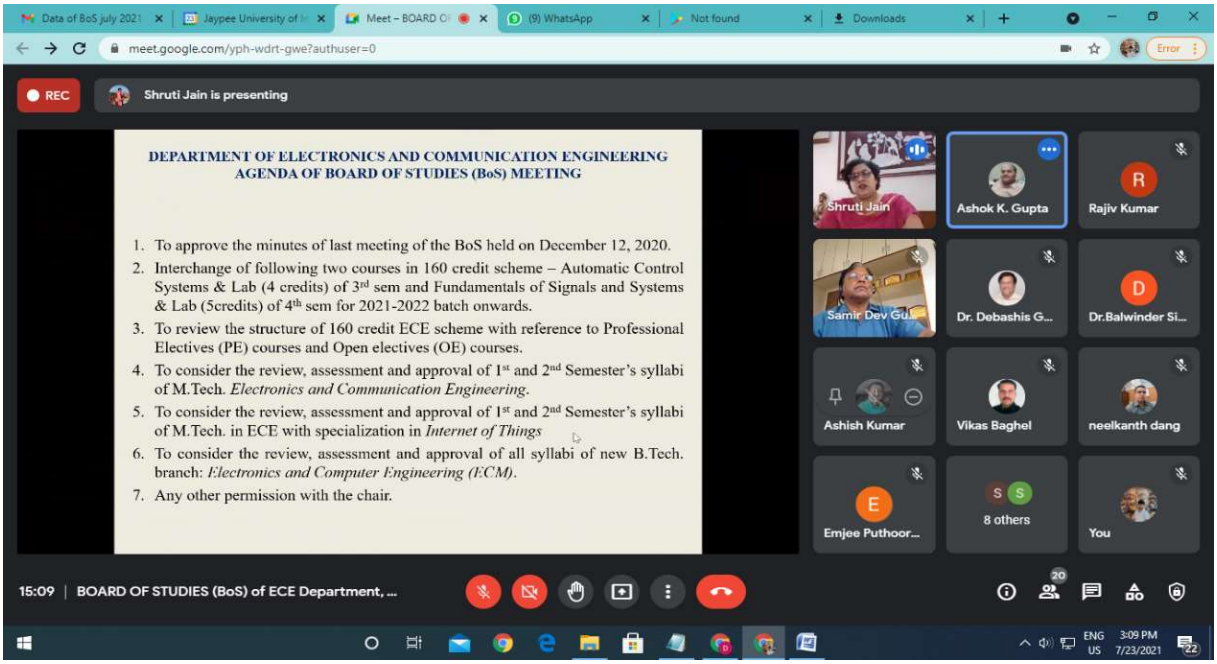
SEMESTER - I								
S. No.	**Course Code**	**Name of the Subjects**		**Course Hours**			**Total**	**Credits**
			C/E	**L**	**T**	**P**		
1		Embedded Systems and Applications	C	3	0	0	3	3
2		Sensor and Smart Instrumentation	C	3	0	0	3	3
3		Object Oriented Programming	C	3	0	0	3	3
4		Departmental Elective - I	E	3	0	0	3	3
5		Departmental Elective - II	E	3	0	0	3	3
6		Departmental Elective - III	E	3	0	0	3	3
7		Advanced IoT Lab - I	C	0	0	6	3	3
						Total	**21**	**21**
SEMESTER - II								
S.No.	**Course Code**	**Subject Names**		**Course Hours**			**Total**	**Credits**
1		Digital System design using verilog HDL	**C/E**	**L**	**T**	**P**		
2		Artificial Intelligence and Expert Systems	C	3	0	0	3	3
3		Network Security Protocols	C	3	0	0	3	3
4		Departmental Elective - IV	C	3	0	0	3	3
5		Departmental Elective - V	E	3	0	0	3	3
6		Open Elective	E	3	0	0	3	3
7		Advanced IoT Lab - II	E	3	0	0	3	3

						Total	**21**	**21**
SEMESTER - III								
S. No.	**Course Code**	**Name of the Subjects**		**Course Hours**			**Total**	**Credits**
			C/E	**L**	**T**	**P**		
1		Literature Review / Seminar	C	0	0	6	6	3
2		Dissertation Part - I	C	0	0	28	28	14
						Total	**34**	**17**
SEMESTER - IV								
S.No.	**Course Code**	**Subject Names**		**Course Hours**			**Total**	**Credits**
			C/E	**L**	**T**	**P**		
1		Seminar	C	0	0	6	6	3
2		Dissertation Part - II	C	0	0	28	28	14
						Total	**34**	**17**

LIST OF ELECTIVES								
ELECTIVE - I								
S.No.	**Course Code**	**Subject Names**		**Course Hours**			**Total**	**Credits**
			C/E	**L**	**T**	**P**		
1		IoT Architecture and Protocols	E	3	0	0	3	3
2		Wireless Technologies for IoT	E	3	0	0	3	3
ELECTIVE - II								
S.No.	**Course Code**	**Subject Names**		**Course Hours**			**Total**	**Credits**
			C/E	**L**	**T**	**P**		
1		Industrial Automation and IIoT	E	3	0	0	3	3
2		Intelligent Robotics and Shared Autonomy	E	3	0	0	3	3

ELECTIVE - III								
S.No.	**Course Code**	**Subject Names**		**Course Hours**			**Total**	**Credits**
			C/E	**L**	**T**	**P**		
1		Signal Processing for IoT	E	3	0	0	3	3
2		Intelligent Signal Processing	E	3	0	0	3	3
ELECTIVE - IV								
S.No.	**Course Code**	**Subject Names**		**Course Hours**			**Total**	**Credits**
			C/E	**L**	**T**	**P**		
1		Image Sensing and Realtime Processing	E	3	0	0	3	3
2		Medical Image Processing and Applications	E	3	0	0	3	3
3		Applied Machine Learning for IoT	E	3	0	0	3	3
ELECTIVE - V								
S.No.	**Course Code**	**Subject Names**		**Course Hours**			**Total**	**Credits**
			C/E	**L**	**T**	**P**		
1		Antennas for IoT	E	3	0	0	3	3
2		RF technology for 5G and IoT	E	3	0	0	3	3
3		Smart Internet of Things	E	3	0	0	3	3

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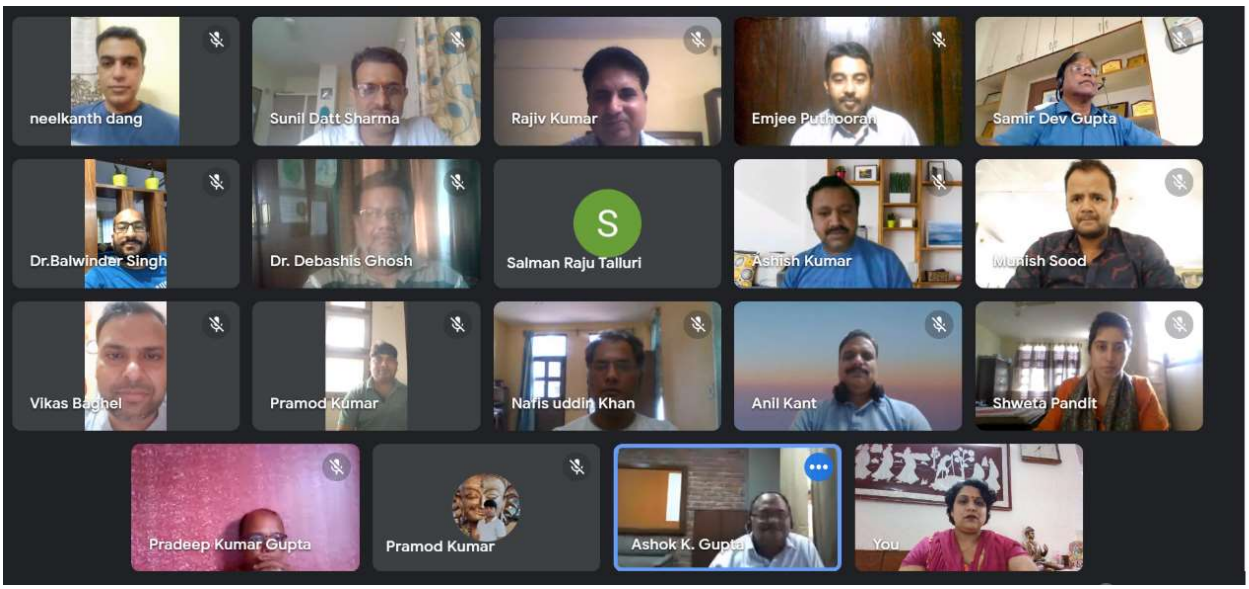
REC
Shruti Jain is presenting
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
AGENDA OF BOARD OF STUDIES (BoS) MEETING
1. To approve the minutes of last meeting of the BoS held on December 12, 2020.
2. Interchange of following two courses in 160 credit scheme – Automatic Control Systems & Lab (4 credits) of 3rd sem and Fundamentals of Signals and Systems & Lab (5credits) of 4th sem for 2021-2022 batch onwards.
3. To review the structure of 160 credit ECE scheme with reference to Professional Electives (PE) courses and Open electives (OE) courses.
4. To consider the review, assessment and approval of 1st and 2nd Semester's syllabi of M.Tech. Electronics and Communication Engineering.
5. To consider the review, assessment and approval of 1st and 2nd Semester's syllabi of M.Tech. in ECE with specialization in Internet of Things
6. To consider the review, assessment and approval of all syllabi of new B.Tech. branch: Electronics and Computer Engineering (ECM).
7. Any other permission with the chair.
Shruti Jain
Ashok K. Gupta
Rajiv Kumar
Samir Dev Gu...
Dr. Debashis G...
Dr.Balwinder Si...
Ashish Kumar
Vikas Baghel
neelkanth dang
Emjee Puthoor...
8 others
You
15:09 | BOARD OF STUDIES (BoS) of ECE Department, ...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Sunil Datt Sharma
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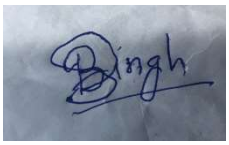
Vikas Baghel
Pramod Kumar
Naris uddin Khan
Anil Kant
Shweta Pandit
Pradeep Kumar Gupta
Pramod Kumar
Ashok K. Gupta
You

(Prof. D.Ghosh)



(Dr.Balwinder Singh)

(Prof. Samir DevGupta)

(Prof. Ashok Gupta)

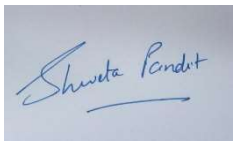
(Dr. Rajiv Kumar)

(Dr. Shruti Jain)

(Dr. Salman Raju)

(Dr. Sunil Datt Sharma)

(Dr. Vikas Baghel)



(Dr. Shweta Pandit)

(Dr.EmjeePuthooran)

(Dr.Nafis U Khan)

(Mr. Munish Sood)

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(Dr. Ashish Kumar, HoD Civil Engg)

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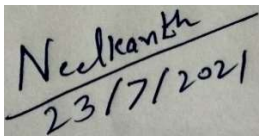
(Dr. Anil Kant, BT& BI Deptt.)



(Dr. Neel kanth, Maths Deptt)

(Mr. Pramod Kumar)