

Department of Electronics and Communication Engineering

MINUTES 14<sup>th</sup> Meeting of the Board of studies held on  
16<sup>th</sup> December, 2020 at 10.00AM

Venue: Conference Hall,  
National Engineering College, K.R.Nagar, Kovilpatti- 628503  
(through Google meet)

**National Engineering College, K.R.Nagar, Kovilpatti – 628 503**  
*(An Autonomous Institution - Affiliated to Anna University, Chennai)*  
[www.nec.edu.in](http://www.nec.edu.in)

Department of Electronics and Communication Engineering

National Engineering College, K.R. Nagar, Kovilpatti – 628 503  
(An Autonomous Institution - Affiliated to Anna University, Chennai)  
www.nec.edu.in

F. No. 1-2/NEC/Branch/ECE

18<sup>th</sup>December, 2020

Dear Sir/Madam,


**Sub: *Minutes of the 14<sup>th</sup> Meeting of the Board of studies in Electronics and Communication Engineering - Reg.***

The 14<sup>th</sup> Meeting of Board of studies of the Electronics and Communication Engineering of the National Engineering College, K.R.Nagar, Kovilpatti – 628503 was conducted on 16<sup>th</sup> December, 2020 at 10.00 AM in the conference hall of National Engineering college through google meet. Thanks for the presents and valuable suggestions the minutes of the meeting is attached herewith.

It is requested to comments on the minutes, if any, may please be sent by email to hodeceug@nec.edu.in or by post, at the earliest. If no comments are received, within ten days, the minutes shall be taken as confirmed.

Thanking You,

Yours Sincerely

  
(Dr.A.Shenbagavalli) 12/12/20

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14<sup>th</sup> Board of studies Meeting in the Department of  
**Electronics and Communication Engineering**

**Venue:** Conference Hall, National Engineering College  
K.R.Nagar, Kovilpatti – 628503 (Through Google Meet)

Date & Time: 16.12.2020& 10.00 AM

**AGENDA**

ECE/BoS14.1	:	Welcome address and Opening Remarks by Chairman, Board of studies in the department of Electronics and Communication Engineering
ECE/BoS 14.2	:	Confirmation of the Minutes and action taken report of the 13 <sup>th</sup> meeting of Board of studies in the Department of Electronics and Communication Engineering held on 21 <sup>st</sup> May 2020.
ECE/BoS14.3	:	Business brought forward by the Chairman, Board of studies 14.3.1. Elective courses for UG degree programme under R-2015. 14.3.2. Core, elective and one credit courses for UG degree programme under R-2019 14.3.3. Redefining comprehension course(19EC73C) to test the employability skill.
ECE /BoS14.4	:	Any other items <ul style="list-style-type: none"><li>• Incorporating innovation skill related courses like design thinking in R-2019</li><li>• NEC innovation and start up policy</li></ul>
ECE /BoS14.5	:	Suggestions given by the BoS Members



## Department of Electronics and Communication Engineering

### MINUTES OF THE MEETING

The 14<sup>th</sup> Meeting of the Board of studies of the Electronics and Communication Engineering was held on 16<sup>th</sup> December, 2020 at 10.00 AM in the Conference Hall of the National Engineering College, K.R.Nagar, Kovilpatti- 628503.

1. The following members were present:

1.	Dr.A.Shenbagavalli Professor & Head	Chairman
2.	Dr. S.Shunmugavel, Senior Prof, Director	Internal Members
3.	Dr. S.Tamilselvi, Professor	
4.	Dr. V.R.S.Mani, Asso. Prof (SG)	
5.	Dr. T.S.Arun Samuel, Asso. Prof	
6.	Dr. T.Vijayanandh, Asst. Prof (SG)	
7.	Dr. K.J.Prasanna Venkatesan, Asst. Prof (SG)	
8.	Mr. A.Saravana Selvan, Asst. Prof (SG)	
9.	Mr. S.Cammillus, Asst. Prof (SG)	
10.	Mrs. R.Manjula Devi, Asst. Prof (SG)	
11.	Mr. C.Balamurugan, Asst. Prof (SG)	
12.	Mr. K.Subramanian, Asst. Prof (SG)	
13.	Mr. M.Satheesh Kumar, Asst. Prof (SG)	
14.	Mr. M.Sathish Kumar, Asst. Prof	
15.	Mr. B.Ganapathyram, Asst. Prof	
16.	Ms. J.E.Jeyanthi, Asst. Prof	
17.	Mrs. Viswalakshmi, Adjunct Faculty	
18.	Dr. M. Meenakshi, Professor, Department of ECE, College of Engineering, Guindy Campus, Chennai.	
19.	Dr.M.Ganesh Madhan, Professor, Department of ECE Madras Institute of Technology,	

	Anna University, Chennai.	
20.	Dr. Suvra Sekhar Das Associate Professor, Sanyal School of Telecommunication, IIT, Kharagpur	
21.	Dr.Klutto Milleth, Chief Technologist Centre of Excellence in Wireless Technology IIT Madras IIT Madras Research Park Taramani Chennai .	
22.	Mr.Srivatsan Srinivasan Chief Architect Cognizant, USA	Alumni Member
23.	Dr.R.Pandeeswari Associate Professor Department of ECE NIT, Trichy.	
24.	Mr.S.Vijay bharat Associate Vice President Mistral Solutions Pvt Ltd Chennai	
25.	Mr.S.Lakshmanan Senior HR VVDN Technologies Pvt Ltd Chennai	Industrial Experts
26.	Mr.K.A.Irshadh Abdul Rasheed Associate Partner Cyber Security Ernst And Young LLP Chennai	
27.	Mr. Mathankumar Viswanathan Manager (Software) VVDN Technologies Pvt Ltd Chennai	
28.	Mr. Sethuraman Thangavelu Manager (Software) VVDN Technologies Pvt Ltd Chennai	Special Invitee

29.	Mr. VigneshAnanthan Manager (Hardware) VVDN Technologies Pvt Ltd Chennai	
30.	Mr.S.Shunmugavel, Final Year ECE	Student Members
31.	Ms.K.Mari Priyadarshini, Final Year ECE	

BoS/ECE14.1 : WELCOME ADDRESS AND OPENING REMARKS BY CHAIRMAN, BOARD OF STUDIES IN THE DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

The Chairman, BoS of the Electronics and Communication Engineering welcomed and introduced the members of 14<sup>th</sup> Board of Studies.

BoS/ECE 14.2 : TO CONFIRM THE MINUTES OF THIRTEENTHBOS MEETING HELD ON 21<sup>ST</sup> MAY 2020.

The minutes of the **Thirteenth Board of Studies meeting** held on 21<sup>st</sup> May 2020 were communicated to the members. The comments received have been incorporated and placed for confirmation. The same was approved by the 13<sup>th</sup> Academic council.

➤ Action Taken Report

(Enclosed in *Annexure I*)

BoS/ECE14.3.1 : **Approval for Elective Courses for UG Degree Programme Under R-2015**

Resolved to approve the following two elective courses framed by Industrial expert for UG Degree Programme Under R-2015

1. Cyber Security: Governance, Risk and Compliance- 1 Credit
2. Edge Analytics and Internet of Things- 3 Credit

**Approval for Core, Elective and One-Credit Courses for UG**



- BoS/ECE14.3.2 : **Degree Programme Under R-2019.**  
Resolved to approve the Core, Elective and One-Credit Courses for UG Degree Programme Under R-2019.  
(Enclosed in *Annexure II*)
- BoS/ECE14.3.3 : **Approval to Redefine the Comprehension Course (19EC73C)**  
Resolved to approve and redefined the Comprehension Course (19EC73C) to test the Employability Skill of the students.
- BoS/ECE14.3.4 : **Approval for incorporating Innovation Skill related Courses like Design Thinking in R-2019**  
Resolved to approve a course called 'Innovation through Design Thinking' in R-2019.
- BoS/ECE14.3.5 : **Approval for NEC Innovation and Startup Policy**  
Resolved to approve the NEC innovation and startup policy
- BoS/ECE 14.5 : **SUGGESTIONS GIVEN BY THE BOS MEMBERS**
- 14.5.1 : The syllabus content of the core course 19EC61C-Wireless Communication under R-2019 may be lessened and finetuned.
- 14.5.2 : It is recommended to include a one credit Advanced communication lab in the seventh semester under R-2019.
- 14.5.3 : The content of the core course 19EC71C-Microwave and Optical Communication under R-2019 need to be redefined. Unit 1, unit 2 and unit 3 content may be reduced. RADAR topic in unit 3 may be removed.
- 14.5.4 : The redundant topics in elective course 19EC01E-Speech and Audio Processing under R-2019 may be removed.
- 14.5.6 : The first unit of the elective course 19EC03E-Mixed Signal Design under R-2019 needs to be modified.
- 14.5.7 : The topics ARMA, AR and MA Model parameters can be shifted from unit 1 to unit 3 in elective course 19EC04E-Adaptive

Signal processing under R-2-1019.

- 14.5.8 : In elective course 19EC06E-Digital Signal Processors under R-2019, unit 3 and unit 5 may be swapped.
- 14.5.9 : Fabrication issues and design challenges may be included in the elective course 19EC18E-Introduction to MEMES under R-2019.
- 14.5.10 : The sequence of topics may be redefined in the elective course 19EC19E-Information theory and coding under R-2019. The basics of error correcting code need to be added.
- 14.5.11 : Recent text and reference books may be included in the elective course 19EC20E-Satellite communications under R-2019.
- 14.5.12 : The content related to types of Radar and RF front end may be included in unit 1 and Radar and its applications may be added in unit 5 of the elective course 19EC21E-Radar and Navigation Aids under R-2019.
- 14.5.13 : The order and repetition of the content may to be noted in the elective course 19EC22E-Statistical Theory of Communication under R-2019 and redundancy may be eliminated
- 14.5.14 : Different types of antenna can be included in unit 1 and navigational autonomous ground vehicle system may be included in unit 5 of the elective course 19EC24E-Global Navigational Satellite System under R-2019.
- 14.5.15 : Standardization with limitations may be included in unit 4 of the elective course 19EC25E-Electromagnetic Interference and Compatibility under R-2019.
- 14.5.16 : The content may be modified without redundancy in the elective course 19EC26E-Advanced Wireless Communication under R-2019.
- 14.5.17 : Redundant content in the elective course 19EC27E-Error Control Codes under R-2019 may be removed.
- 14.5.18 : Cloud security topic may be included in the elective course of 19EC59E-Fundamentals of Cyber Security under R-2019.



Significance of the Innovation through Design Thinking course was presented by Dr.I. Sankar, AP (SG)/Mechanical Engineering Department for the approval of BoS.

NEC Innovation and Startup policy was presented by Mr.B.Ganapathyram, AP/ECE, for the approval of BoS.

Conducting few elective courses through online in the forthcoming semester was presented by Dr.S.TamilSelvi, Professor/ECE, and the members suggested that instead of having 100% of online mode, blending of online and classroom teaching may be generative.

The members had a brainstorming discussion and interaction among themselves. Based on the suggestions given by the members, BOS resolved to recommend the following to the Academic Council for further approval.

1. Elective courses for UG degree programme under R-2015
2. Core, elective and one credit courses for UG degree programme under R-2019
3. Redefining comprehension course (19EC73C) to test the employability skill
4. Any other items
  - Incorporating innovation skill related courses like design thinking in R-2019
  - NEC innovation and startup policy


Ms. J.E.Jeyanthi, AP/ECE thanked all the members for their kind cooperation and the meeting came to an end.

**Members Present Online:**






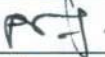

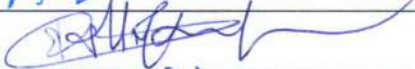






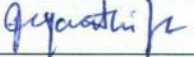


1.	<b>Dr. M.Ganesh Madhan</b> Professor, Dept. of ECE, Madras Institute of Technology campus, Anna University, Chennai – 600044.	Academic Expert
2.	<b>Dr.M.Meenakshi</b> Professor, Dept. of ECE, College of Engineering, Guindy Campus, Chennai - 600025	
3.	<b>Dr. Suvra Sekhar Das</b> Associate Professor, Sanyal School of Telecommunication, IIT, Kharagpur	
4.	<b>Dr.J.KluttoMilleth</b> Chief Technologist Centre Of Excellence in Wireless Technology IIT-Madras Research Park, Chennai	Alumni Stakeholders

5.	<b>Mr.Srivatsan Srinivasan</b> Chief Architect Cognizant, USA	
6.	<b>Dr.R.Pandeeswari</b> Associate Professor Department of ECE NIT, Trichy.	
7.	<b>Mr.S.VIJAY BHARAT</b> Associate Vice President Mistral Solutions Pvt Ltd Chennai	Industrial Expert
8.	<b>Mr.S.LAKSHMANAN</b> Senior HR VVDN Technologies Pvt Ltd Chennai	
9.	<b>Mr.K.A.IRSHADH ABDUL RASHEED</b> Associate Partner Cyber Security Ernst And Young LLP Chennai	
10.	<b>Mr. Mathankumar Viswanathan</b> Manager (Software) VVDN Technologies Pvt Ltd Chennai	Special Invitee
11.	<b>Mr. Sethuraman Thangavelu</b> Manager (Software) VVDN Technologies Pvt Ltd Chennai	
12.	<b>Mr. Vignesh Ananthan</b> Manager (Hardware) VVDN Technologies Pvt Ltd Chennai	
13.	<b>Mr.S.Shunmugavel,</b> Final Year ECE	Student Member

### Members Present

<b>Board Chairman</b>	
<b>Dr. A. Shenbagavalli</b> Professor & Head Department of Electronics and Communication Engineering	



<i>Internal Members</i>	
Dr. S.Shanmugavel, Senior Prof, Director	
Dr. S.Tamilselvi, Professor	
Dr. V.R.S.Mani, Asso. Prof (SG)	
Dr. T.S.Arun Samuel, Asso. Prof	
Dr. T.Vijayanandh, Asst. Prof (SG)	
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Mrs. R.Manjula Devi, Asst. Prof (SG)	
Mr. C.Balamurugan, Asst. Prof (SG)	
Mr. K.Subramanian, Asst. Prof (SG)	
Mr. M.Satheesh Kumar, Asst. Prof (SG)	
Mr. M.Sathish Kumar, Asst. Prof	
Mr. B.Ganapathyram, Asst. Prof	
Ms. J.E. Jeyanthi, Asst. Prof	
Mrs. Viswalakshmi, Adjunct Faculty	
Ms.K.Mari Priyadarshini, Final Year ECE	

  
CHAIRMAN

BOARD OF STUDIES



# 14<sup>th</sup> BOARD OF STUDIES MEETING – DEPARTMENT OF ECE ON 16.12.2020

The screenshot displays a Google Meet interface. At the top, the browser address bar shows the meeting URL: <https://meet.google.com/bgi-vixm-zfs?authuser=1>. The meeting title is "Jeyanthi J.E ECE is presenting". The current time is 11:30 AM on 12/16/2020.

The main content area shows a PDF document titled "Professional Electives.pdf" with the following text:

**UNIT I BASIC THEORY 9**  
Introduction to EMI and EMC, Intra and inter system EMI, Elements of Interference, Sources and Victims of EMI, Conducted and Radiated EMI emission and susceptibility, Case Histories, Radiation hazards to humans, Various issues of EMC, EMC Testing categories, EMC Engineering Application.

**UNIT II COUPLING MECHANISM 9**  
Electromagnetic field sources and coupling paths, coupling via the supply network, Common mode coupling, Differential mode coupling, Impedance coupling, Inductive and Capacitive coupling, Radiative coupling, ground loop coupling, Cable related emissions and coupling, Transient sources, Automotive transients.

**UNIT III EMI MITIGATION TECHNIQUES 9**  
Working principle of Shielding and Murphy's Law, LF Magnetic shielding, Apertures and shielding effectiveness, Choice of Materials for H, E, and free space fields, Gasketing and sealing, PCB Level shielding, Principle of Grounding, Isolated grounds, Grounding strate...

The right side of the screen shows a grid of participants, including Dr. Ganesh Madh..., Tamil Selvi S, Prasanna Venkat..., Klutto Milleth, Manjula devi ECE, shenbagavalli ece, Vignesh Ananthan, Meenakshi M, vijayanandh ece, Dr. VRS Mari, Sethuraman Tha..., BGR ECE, Vijay Bharat S, Irshadh Abdul Ra..., and Sathesh Kumar ...

At the bottom, the meeting controls are visible, including "Meeting details", "Raise hand", "Turn on captions", and "Jeyanthi J.E ECE is presenting".

**REC** Jeyanthi J.E ECE is presenting

Professional Elective.pdf - Adobe Acrobat Reader DC

Home Tools NEC SP 2020 V1... CORE SUBJECTS.p... R-2015 elective.pdf Minutes of 13th B... Action Taken Rep... ONE CREDIT ELEC... Professional Electi... x Sign In

19 / 67 1546

**19EC26E ADVANCED WIRELESS COMMUNICATION**

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**COURSE OUTCOMES**

Upon completion of this course, the students will be able to

- CO1 : Understand the multiple access technique and physical layer parameters for Long Term Evolution. (K2)
- CO2 : Apply MIMO basics for the fourth Generation wireless communication technologies. (K2)
- CO3 : Understand the multiple access technique required for 5G wireless communications. (K2)

meet.google.com is sharing your screen. Stop sharing. Hide.

Sethuraman Th...

Meeting details

People (29) Chat

- B BGR ECE
- cammulis ece
- D irector
- D Dr. Pandeeswari Ramas...
- D Dr. VRS Mani
- D Dr.Ganesh Madhan
- Irshadh Abdul Rasheed
- Jeyanthi J.E ECE
- Jeyanthi J.E ECE
- Jeyanthi J.E ECE Presentation
- Klutto Milleth
- M Maniula devi ECE