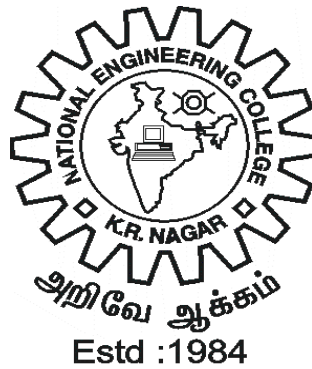


NATIONAL ENGINEERING COLLEGE

(An Autonomous Institution, Affiliated to Anna University Chennai)

K.R.NAGAR, KOVILPATTI – 628 503



16th BOARD OF STUDIES MEETING – MINUTES

Google Online Meet
PERIOD - NOV - DEC 2021

Department of Mechanical Engineering

MINUTES of 16th Meeting of the Board of Studies held on
27th November, 2021 at 10.00 a.m. (Online mode)
Google meet Link: meet.google.com/owz-ummz-mde

Venue: Seminar Hall, Department of Mechanical Engineering,
National Engineering College

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

National Engineering College, K.R.Nagar, Kovilpatti - 628503

(An Autonomous Institution -Affiliated to Anna University, Chennai)

16th Board of Studies Meeting - Mechanical Engineering

Venue: Seminar Hall, Department of Mechanical Engineering,
National Engineering College

Date & Time: 27.11.2021 & 10.00 a.m.

Online Google Meet Link: meet.google.com/owz-ummz-mde

AGENDA

| | | |
|----------------|--------|---|
| BoS / MECH16.1 | : | Welcome address and Opening Remarks by Chairman, Board of studies in the department of Mechanical Engineering |
| BoS / MECH16.2 | : | Confirmation of the Minutes of the 15 th meeting of Board of Studies in the department of Mechanical Engineering held on June 26, 2021 and Action taken report of 15 th meeting of Board of Studies |
| BoS / MECH16.3 | : | Business brought forward by the Chairman, Board of studies |
| | 16.3.1 | Introduction of Specialization courses, Conduct of Examination - ODD semester 2021-2022 for UG and PG Programmes and Examination Reforms |
| | 16.3.2 | Syllabus for Robotics Specialization courses - B.E. Mechanical Engineering Programme under Regulation 2019 |
| | 16.3.3 | Syllabus for "Product Life Cycle Management" and revision of "Product Development Laboratory" as an integrated course - B.E. Mechanical Engineering Programme under Regulation 2019. |
| | 16.3.4 | Credit transfer for open online courses other than NPTEL (like Udemy, Coursera etc.) for UG and PG programmes under Regulation 2019. |
| BoS / MECH16.4 | : | Suggestions given by the BOS Members |
| BoS / MECH16.5 | : | Any other items |

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

F. No. 1-1/NEC/MECH

27th November, 2021

Dear Sir/Madam,

Sub: Minutes of the 16th Meeting of the Board of studies in the Mechanical Engineering - Reg.

Kindly find attached herewith the Minutes of the 16th Meeting of Board of studies of the Mechanical Engineering of the National Engineering College, K.R.Nagar, Kovilpatti – 628503 held on 27th November 2021 at 10.00 a.m. (Online mode) in Seminar Hall, Department of Mechanical Engineering, National Engineering college. Hard copy of the Minutes is also being sent to you by speed post.

It is requested that comments on the Minutes, if any, may please be sent by email at hodmech@nec.edu.in or by post, at the earliest. If no comments are received, within ten days, the Minutes shall be taken as confirmed. With Kind Regards,

Yours Sincerely,

L. U - 82
27/11/21
(Dr.K.Manisekar)

Department of Mechanical Engineering

MINUTES OF THE MEETING

The 16th Meeting of the Board of studies of the Mechanical Engineering was held on 27th November 2021 at 10.00 a.m. (Online mode - Google Meet Link: meet.google.com/owz-ummz-mde) in the Seminar Hall, Department of Mechanical Engineering, National Engineering College, K.R.Nagar, Kovilpatti – 628 503.

1. The following members were present

| | | |
|-----|---|---------------------|
| 1. | Dr. K.Manisekar, Professor & Head | Chairman |
| 2. | Dr. S.Iyah Raja, Asso. Professor | Internal Members |
| 3. | Dr. D.Venkat Kumar, Asso. Professor | |
| 4. | Dr. M.Kathiresan, Asso. Professor | |
| 5. | Dr. R.Harichandran, Asso. Professor | |
| 6. | Dr. I.Sankar, Asst,Professor (S.G) | |
| 7. | Dr. D.Vignesh Kumar, Asst. Prof. (S.G) | |
| 8. | Dr. P.Ramanan, Asst. Professor (S.G) | |
| 9. | Dr. F.Michael Thomas Rex, Asst. Prof. (S.G) | |
| 10. | Mr. B.Prince Abraham, Asst. Professor | |
| 11. | Mr. S.R.Sundara Bharathi, Asst. Professor | |
| 12. | Mr. P.Samuel Ponraj, Asst. Professor | |
| 13. | Mr. A.Andrews, Asst. Professor | |
| 14. | Dr. P.Hariharasakthisudhan, Asst. Prof. (S.G) | |
| 15. | Mr. K.Thoufiq Mohammed, Asst. Professor | |
| 16. | Mr. M.Vivekanandan, Adjunct Faculty | |
| 17. | Mr. C.Suresh Kumar, Asst. Professor | |
| 18. | Mr. C.Veera Ajay, Asst. Professor | |
| 19. | Dr. W.Beno Wincy, Asst. Professor | |
| 20. | Dr. N.Karthikeyan, Asst. Professor | |
| 21. | Dr. G.Kumaresan Deputy Director (Research) & Associate Professor Institute for Energy Studies, CEG, Anna University, Chennai | |

| | | |
|-----|--|---|
| 22. | Dr.-Ing. M. Duraiselvam Professor / Production Engineering, National Institute of Technology, Trichy | |
| 23. | Dr.A.Arockiarajan Professor / Applied Mechanics, Indian Institute of Technology, Chennai | |
| 24. | Dr. K. Murugan Scientist -E, Centre for Sol-Gel coatings, ARCI, Hyderabad - 500 005, Telangana | Meritorious Alumnus Nominated by the Principal |
| 25. | Mr. R. Kanda Subburaj Chief Engineer, Project Controls, AMEC Foster Wheeler India Pvt. Ltd, Chennai | Industrial Experts |
| 26. | Mr. P. Muniyandi, Principal Scientific Officer, Controller of Quality Assurance, Bharat Earth Movers Ltd., New Thippasandra, Bangaluru - 56007 | |
| 27. | Mr. P. Sriram, Joint Executive President, Ultratech in Aditya Birla Group, Pune, Maharastra. | |
| 28. | Mr. Sivaram Sundaram, Senior Director, Comcast India Engineering Centre, Thoraipakkam, Chennai - 97 | |
| 29. | Mr. J. Sam Joebin, IV Year Student | Student Members |
| 30. | Mr. X.Cheselton, IV Year Student | |

2. The following University Nominee Dr.D.Mohanlal, Professor, Department of Mechanical Engineering, Anna University, Chennai member could not attend the meeting due to his prior commitments and unavoidable reasons and he was granted leave of absence:

| | | |
|----------------|---|---|
| BoS / MECH16.1 | : | WELCOME ADDRESS AND OPENING REMARKS BY CHAIRMAN, BOARD OF STUDIES IN THE DEPARTMENT OF MECHANICAL ENGINEERING |
|----------------|---|---|

| | | |
|-------------------|---|--|
| | | The Chairman, BOS of the Mechanical Engineering welcomed and introduced the members of 16 th Board of Studies and thanked each one of them for sparing their valuable time to attend the meeting. |
| BoS / MECH 16.2 | : | TO CONFIRM THE MINUTES OF FIFTEENTH BOS MEETING HELD ON 26 th June, 2021 |
| | | The minutes of the Fifteenth Board of Studies meeting held on 26 th June, 2021 were communicated to the members. The comments received have been incorporated and placed for confirmation. The same was approved by the 15 th Academic council. (Enclosed in Annexure - I) |
| BoS / MECH 16.3.1 | : | TO CONFIRM AND APPROVE the introduction of Specialization courses, Conduct of Examination - ODD semester 2021-2022 for UG and PG Programmes and Examination Reforms. (Enclosed in Annexure - II) |
| | | RESOLVED TO APPROVE the introduction of Specialization courses, Conduct of Examination - ODD semester 2021-2022 for UG and PG Programmes and Examination Reforms. |
| BoS / MECH 16.3.2 | : | TO CONFIRM AND APPROVE the syllabus for Robotics Specialization courses - B.E. Mechanical Engineering Programme under Regulation 2019. (Enclosed in Annexure - III) |
| | | RESOLVED TO APPROVE the syllabus for Robotics Specialization courses - B.E. Mechanical Engineering Programme under Regulation 2019. |
| BoS / MECH 16.3.3 | : | TO CONFIRM AND APPROVE the Syllabus for "Product Life Cycle Management" and revision of "Product Development Laboratory" as an integrated course - B.E. Mechanical Engineering Programme under Regulation 2019. (Enclosed in Annexure - IV) |

| | |
|---------------------|---|
| | RESOLVED TO APPROVE the Syllabus for "Product Life Cycle Management" and revision of "Product Development Laboratory" as an integrated course – B.E. Mechanical Engineering Programme under Regulation 2019. |
| BoS / MECH 16.3.4 : | TO CONFIRM AND APPROVE Credit transfer for open online courses other than NPTEL (like Udemy, Coursera etc.,) for UG and PG programmes under Regulation 2019. |
| | RESOLVED TO APPROVE Credit transfer for open online courses other than NPTEL (like Udemy, Coursera etc.,) for UG and PG programmes under Regulation 2019. |
| BoS / MECH 16.4 : | Suggestions Given by the Members |
| 16.4.1 : | "19ME42E - Operations and Production Management" programme elective course title may be changed as "Production and Operations Management" |
| 16.4.2 : | Safety standards for working in Heights, lifting heavy materials, confined spaces, Heavy voltage area can be included in "19ME48E - Industrial Safety Engineering" programme elective course. |
| 16.4.3 : | Appreciated the initiation of Introducing Specialization courses and hybrid mode of conduct of examination and Examination reforms. |
| 16.4.4 : | Drones and Automated Guided Vehicle (AGV) topics may be added in the "Introduction to robotics" open elective course. |
| 16.4.5 : | The robotic specialization course may be taught effectively by using a Mini robot and robot simulation software. |
| 16.4.6 : | Stages of PLM, Marketing techniques related PLM, financial aspects of PLM, case studies with specific applications. Application Lifecycle Management (ALM) topics may be included in "Product Lifecycle Management" open elective course. |
| 16.4.7 : | The concept of prototyping may be elaborated in "Product Development Laboratory" integrated course. |

| | |
|--------|---|
| 16.4.8 | <p>: Credit transfer of open online courses other than NPTEL (like Udemy, Coursera etc.,)</p> <ol style="list-style-type: none"> a) Students can register the courses from the open online forum (like Udemy, Coursera etc.,) with prior guidelines given by the Dean Academic with the approval of Head of the department. b) For internal marks, continuous assessments can be considered which is conducted by the Udemy, Coursera etc., c) For external marks, external assessment can be conducted as a separate exam for the selected courses. Before conducting the exam, it is to be ensure that the question setting faculty should be familiarized on the particular course. |
|--------|---|

The members had a brainstorming discussion and interaction among themselves. After discussion, fruitful suggestions were incorporated appropriately in the curriculum and syllabus of Regulation 2019.

Based on the suggestions given by the members, BOS resolved to recommend the following to the Academic Council for further approval.

- a. Introduction of Specialization courses, Conduct of Examination - ODD semester 2021-2022 for UG and PG Programmes and Examination Reforms.
- b. Syllabus for Robotics Specialization courses - B.E. Mechanical Engineering Programme under Regulation 2019.
- c. Syllabus for "Product Lifecycle Management" and revision of "Product Development Laboratory" as an integrated course - B.E. Mechanical Engineering Programme under Regulation 2019.
- d. Credit transfer for open online courses other than NPTEL (like Udemy, Coursera etc.,) for UG and PG programmes under Regulation 2019.

Dr.R.Harichandran, Associate Professor / Mechanical Engineering thanked all the members for their kind cooperation and the meeting came to an end.

Members Present Online

| | |
|---|----------------------------|
| Dr. G.Kumaresan Deputy Director (Research) & Associate Professor Institute for Energy Studies, CEG, Anna University, Chennai | <i>Academic Experts</i> |
| Dr.-Ing. M. Duraiselvam Professor / Production Engineering, National Institute of Technology, Trichy | |
| Dr.A.Arockiarajan Professor / Applied Mechanics, Indian Institute of Technology, Chennai | |
| Dr. K. Murugan, Scientist -E, Centre for Sol-Gel Coatings, ARCI, Hyderabad - 500 005, Telangana | <i>Meritorious Alumnus</i> |
| Mr. R. Kanda Subburaj Chief Engineer, Project Controls, AMEC Foster Wheeler India Pvt. Ltd, Chennai | <i>Industrial Experts</i> |
| Mr. P. Muniyandi, Principal Scientific Officer, Controller of Quality Assurance, Bharat Earth Movers Ltd., New Thippasandra, Bangaluru - 56007 | |
| Mr. P. Sriram, Joint Executive President, Ultratech in Aditya Birla Group, Chennai. | |
| Mr. Sivaram Sundaram, Senior Director, Comcast India Engineering Centre, Thoraipakkam, Chennai - 97 | |

Members Present

| | |
|-------------------------------------|--------------------|
| Chairman | |
| Dr.K.Manisekar, Professor & Head | <i>6.4-52</i> |
| Internal Members | |
| Dr.S.Iyah Raja, Asso. Professor | <i>[Signature]</i> |
| Dr.D.Venkat Kumar, Asso. Professor | <i>[Signature]</i> |
| Dr. M.Kathiresan, Asso. Professor | <i>[Signature]</i> |

| | |
|--|------------------------|
| Dr. R.Harichandran, Asso. Professor | R.H. |
| Dr.I. Sankar, Asst.Professor (S.G) | I.Sankar |
| Dr.D. Vignesh Kumar, Asst. Prof. (S.G) | D.Vignesh Kumar |
| Dr.P.Ramanan, Asst. Professor (S.G) | P.Ram. |
| Dr.F.Michael Thomas Rex, Asst. Prof. (S.G) | F.M.T.Rex |
| Mr.B.Prince Abraham, Asst. Professor | B.Prince |
| Mr. S.R.Sundara Bharathi, Asst. Professor | S.R.Sundara Bharathi |
| Mr. P.Samuel Ponraj, Asst. Professor | P.S.Ponraj |
| Mr. A.Andrews, Asst. Professor | A.Andrews |
| Dr. P. Hariharasakthisudhan, Asst. Prof. (S.G) | P.Hariharasakthisudhan |
| Mr. K. Thoufiq Mohammed, Asst. Professor | K.Thoufiq Mohammed |
| Mr. M.Vivekanandan, Adjunct Faculty | online |
| Mr. C.Suresh Kumar, Asst. Professor | C.Suresh Kumar |
| Mr. C.Veera Ajay, Asst. Professor | C.Veera Ajay |
| Dr. W. Beno Wincy, Asst. Professor | W.Beno Wincy |
| Dr. N. Karthikeyan, Asst. Professor | N.Karthikeyan |
| Student Members Nominated by the HOD | |
| Mr. J. Sam Joebin, IV Year Student | online |
| Mr. X.Cheselton, IV Year Student | online |

h.u - 52
27/11/21
CHAIRMAN
BOARD OF STUDIES

16th BOARD OF STUDIES MEETING – DEPARTMENT OF MECHANICAL ENGINEERING ON 27.11.2021

16th BoS Meeting - Dept. of Mechanical Engineering- NEC Kovilpatti (2021-11-26 at 20:34 GMT-8)

The screenshot displays a Google Meet interface during a presentation. The main content area shows a slide with a 'Stop presenting' button. A 'People' sidebar on the right lists the following participants: Kandasubburaaj Ramiah, Karuppiah Maragan, Pechamal Muniyandi, Sivaram Sundaram, SRIPAN-GUN, and Vignesh Kumar mech. A smaller video window on the right shows Kandasubburaaj Ramiah speaking. The Windows taskbar at the bottom shows the time as 10:58 AM on 11/27/2021.

10:58 AM | 16th BoS Meeting - Dept. of Mechanic...

28°C Rain showers 48 10:58 AM 11/27/2021

42:08 / 1:16:36

Activate Windows
Go to PC settings to activate Windows.

16th BoS Meeting - Dept. of Mechanical Engineering- NEC Kovilpatti (2021-11-26 at 20:34 GMT-8)

The screenshot displays a Google Meet interface within a web browser window. The browser's address bar shows the meeting URL: `meet.google.com/uvz-umrz-mks?pli=1&authuser=0`. The meeting title is "16th BoS Meeting - Dept. of Mechanical Engineering- NEC Kovilpatti (2021-11-26 at 20:34 GMT-8)".

The interface includes a "REC" indicator in the top left corner and a status bar at the top stating "You're presenting to everyone" with a "Stop presenting" button. The main video feed shows a man with a beard and glasses. To the right is a gallery of other participants, including "Kandasubbur...", "Pichamal Muni...", "SRI PAKI-SUN", "ArockManshan A...", "Durai selvam", "DD Research", and "5 others". A larger video feed on the far right shows "Kandasubouraj Ramiah".

At the bottom, a Windows taskbar is visible with the time "11:25 AM" and the meeting title. A red progress bar at the very bottom indicates the video is at 1:08:21 / 1:16:36. An "Activate Windows" watermark is present in the bottom right corner.

Department of Electronics and Communication Engineering

MINUTES 16th Meeting of the Board of studies held on
27th November, 2021 at 10.30 AM

Venue: Conference Hall, National Engineering College
K.R.Nagar, Kovilpatti – 628503 (Through Google Meet:
<https://meet.google.com/zav-defq-jtq>)

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(An Autonomous Institution - Affiliated to Anna University, Chennai)
www.nec.edu.in

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

29th November, 2021

Dear Sir/Madam,

*Sub: Minutes of the 16th Meeting of the Board of studies in Electronics and
Communication Engineering - Reg.*

The 16th Meeting of Board of studies of the Electronics and Communication Engineering of the National Engineering College, K.R.Nagar, Kovilpatti – 628 503 was conducted on 27th November, 2021 at 10.30 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)

Department of Electronics and Communication Engineering
National Engineering College, K.R.Nagar, Kovilpatti- 628503
(An Autonomous Institution -Affiliated to Anna University, Chennai)
www.nec.edu.in

16th 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:
<https://meet.google.com/zav-defq-jtq>)

Date & Time: 27.11.2021 & 10.30 AM

AGENDA

| | | |
|-------------|---|--|
| ECE/BoS16.1 | : | Welcome address and Opening Remarks by Chairman, Board of studies in the department of Electronics and Communication Engineering |
| ECE/BoS16.2 | : | Confirmation of the Minutes and action taken report of the 15 th meeting of Board of studies in the Department of Electronics and Communication Engineering held on 26 th June 2021. |
| ECE/BoS16.3 | : | Business brought forward by the Chairman, Board of studies 16.3.1. Additional Elective courses for UG degree programme under R-2019. 16.3.2. Additional Elective courses for PG degree programme under R-2019. 16.3.3. Curriculum, Syllabus, and regulation requirements of Specialization course to be introduced under R-2019. 16.3.4. Product Development Lab (Updated Syllabus) for UG degree programme under R-2019. 16.3.5. Credit transfer for other online courses like Udeny, Coursera etc., and norms for credit transfer. 16.3.6. Conduction of End semester examinations in hybrid mode. |
| ECE/BoS16.4 | : | Any other items |
| ECE/BoS16.5 | : | Suggestions given by the BoS Members |

Department of Electronics and Communication Engineering

MINUTES OF THE MEETING

The 16th Meeting of the Board of studies of the Electronics and Communication Engineering was held on 27th November, 2021 at 10.30 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.Shanmugavel, Senior Prof, Director | Internal Members |
| 3. | Dr. S.Tamilselvi, Professor | |
| 4. | Dr.V.Vijayarangan, Professor | |
| 5. | Dr. V.R.S.Mani, Asso. Prof (SG) | |
| 6. | Mr.N.Arumugam, Asso Prof | |
| 7. | Dr.V.Suresh, Asso. Prof | |
| 8. | Dr. T.S.Arun Samuel, Asso. Prof | |
| 9. | Dr. T.Vijayanandh, Asst. Prof (SG) | |
| 10. | Dr. K.J.Prasanna Venkatesan, Asst. Prof (SG) | |
| 11. | Mr. A.Saravana Selvan, Asst. Prof (SG) | |
| 12. | Mr. S.Cammillus, Asst. Prof (SG) | |
| 13. | Mrs. R.Manjula Devi, Asst. Prof (SG) | |
| 14. | Mr. C.Balamurugan, Asst. Prof (SG) | |
| 15. | Mr. K.Subramanian, Asst. Prof (SG) | |
| 16. | Mr. M.Satheesh Kumar, Asst. Prof (SG) | |
| 17. | Mr. M.Sathish Kumar, Asst. Prof | |
| 18. | Mr. B.Ganapathyram, Asst. Prof | |
| 19. | Dr.I.Paulkani, Asst. Prof | |
| 20. | Mr.M.Vignesh, Asst. Prof | |
| 21. | Dr. M. Meenakshi, Professor, Department of ECE, College of Engineering, Guindy Campus, Chennai. | |
| 22. | Dr.M.Ganesh Madhan, Professor, | |

| | | |
|-----|--|------------------------|
| | Department of ECE Madras Institute of Technology, Anna University, Chennai. | |
| 23. | Dr.R.Pandeeswari Associate Professor Department of ECE NIT, Trichy. | Meritorious Alumnus |
| 24. | Mr.Raja Subramanian Senior Architect, Mistral Solutions Pvt Ltd Bangalore. | Industrial Experts |
| 25. | Mr.K.A.Irshadh Abdul Rasheed Associate Partner Cyber Security Ernst And Young LLP Chennai | |
| 26. | Mr. A. Gowrisankar Senior Manager- SI CALIBER INTERCONNECT SOLUTIONS Coimbatore. | Special Invitee |
| 27. | Mr.Srivatsan Srinivasan, Chief Data Scientist Cognizant, USA. | |
| 28. | Mr.Vivek.A, Vice President, Schnell Energy Equipments Pvt Ltd., Coimbatore. | |
| 29. | Dr.T.G.Venkatesh, Associate Professor, Department of Electrical Engineering, IIT Madras. | |
| 30. | Ms.A. Subitsha, III Year ECE | Student Members |
| 31. | Ms.M. Subashini, III Year ECE | |
| 32. | Mr.K. Athiguru, III Year ECE | |

Mr.Srivatsan Srinivasan, Chief Architect, Cognizant Technologies, USA,
Mr.Vivek.A, Vice President, Schnell Energy Equipments Pvt Ltd., Coimbatore,
Mr. A. Gowrisankar, Senior Manager- SI, Caliber Interconnect Solutions,

Coimbatore and Dr.T.G.Venkatesh, Associate Professor, Department of Electrical Engineering, IIT Madras could not attend the meeting due to his prior commitments and unavoidable reasons and was granted leave of absence.

BoS/ECE16.1 : 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 16th Board of Studies.

BoS/ECE 16.2 : TO CONFIRM THE MINUTES OF FOURTEENTH BOS MEETING HELD ON 26TH JUNE 2021.

The minutes of the fifteenth Board of Studies meeting held on 26th June 2021 were communicated to the members. The comments received have been incorporated and placed for confirmation. The same was approved by the 15th Academic council.

➤ Action Taken Report

(Enclosed in Annexure D)

BoS/ECE16.3.1 : Approval for additional Elective Courses for UG Degree Programme Under R-2019

Resolved to approve the additional elective courses for UG Degree Programme Under R-2019.

BoS/ECE16.3.2 : Approval for additional Elective Courses for PG Degree Programme Under R-2019

Resolved to approve the additional elective Courses for PG Degree Programme Under R-2019.

BoS/ECE16.3.3 : Approval for Curriculum, Syllabus, and regulation requirements of Specialization course to be introduced under R-2019.

Resolved to approve the Curriculum, Syllabus, and regulation

requirements of Specialization course to be introduced under R-2019.

(Enclosed in *Annexure II*)

BoS/ECE16.3.4 : Approval for **Product Development Lab (Updated Syllabus) for UG degree programme under R-2019.**

Resolved to approve the Product Development Lab (Updated Syllabus) for UG degree programme under R-2019.

(Enclosed in *Annexure III*)

BoS/ECE16.3.5 : Approval for **Credit transfer for other online courses like Udemy, Coursera etc., and norms for credit transfer.**

Resolved to approve Credit transfer for other online courses like Udemy, Coursera etc., and norms for credit transfer

BoS/ECE 16.4 : **SUGGESTIONS GIVEN BY THE BOS MEMBERS**

16.4.1 : In the "PCB Design and Fabrication" elective course under R2019 regulation, design and fabrication part can be included as practical section in 5th unit and this course may be defined as an Integrated course (Theory + Lab). It is also suggested that CPW topic may be introduced in Unit-1 and the course content of the Unit 1, 3 & 4, may be reduced.

16.4.2 : In the elective course "PLC and SCADA" under R-2019 it is recommended to modify the title of Unit-5.

16.4.3 : In "Computer Networks: Practical Approach" elective course under Cyber Security Specialization in R2019 regulation, it is suggested to include the practical modules separately in Unit-5.

16.5.4 : In "Cyber Threat Intelligence and SOC", elective course under Cyber Security Specialization in R2019 regulation, it is suggested to reframe the flow of content like SOC, Security Monitoring, Incident Response, Cyber Threat Intelligence and Threat Hunting.

16.5.5 : In "Vulnerability Assessment and Penetration Testing Laboratory" elective course under Cyber Security Specialization in R2019 regulation, it is recommended to divide the practical experiments in the following order of Infrastructure & Network Penetration testing (35%), Application Security (35%) and Cloud Security (30%).

16.5.6 : In "Introduction to Internet of Things" elective course under Internet of


















- Things Specialization in R2019 regulation, it is recommended to incorporate the topic MQTT in Unit-1.
- 16.5.7 : In "Database Management System for IoT" elective course under Internet of Things Specialization in R2019 regulation, it is recommended to incorporate the topic SQLite database and time series database in the course content.
- 16.5.8 : In "IoT: Architecture, Standards and Protocols" elective course under Internet of Things Specialization in R2019 regulation, it is recommended to incorporate cloud aspect of MQTT, and AWS may be introduced in the course content.
- 16.5.9 : In "Wireless Technologies for IoT" elective course under Internet of Things Specialization in R2019 regulation, it is recommended to incorporate the topic Ultra-Wide Band may be introduced in the course content.
- 16.5.10 : For transferring the credit through other online courses like Udemy, Coursera, Pluralsight, Cybrary, etc., it is necessary to review the standards of Pluralsight and Cybrary platforms.
- 16.5.11 : The conduction of MCQs using gadgets can be integrated in other assessments and it is not recommended to be incorporated in the End semester offline exams.

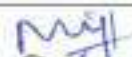
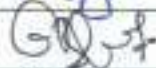






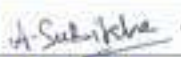


The members had a brainstorming discussion and interaction among themselves. Based on the suggestions given by the members, BOS resolved to recommend the following to the Academic Council for further approval.

1. Additional Elective courses for UG degree programme under R-2019
2. Additional Elective courses for PG degree programme under R-2019
3. Curriculum, Syllabus, and regulation requirements of Specialization course to be introduced under R-2019.
4. Product Development Lab (Updated Syllabus) for UG degree programme under R-2019.
5. Credit transfer for other online courses like Udemy, Coursera etc., and norms for credit transfer.

Dr.K.J.Prasanna Venkatesan, Assistant Professor (Sr.Grade)/ECE thanked all the members for their kind cooperation and the meeting came to an end.

Members Present:

| S.No | BoS Members | Signature |
|------|---|---|
| 1. | Dr. A. Shenbagavalli Professor & Head, Department of Electronics and Communication Engg |  |
| 2. | Dr. M.Ganesh Madhan Professor, Dept. of ECE, Madras Institute of Technology campus, Anna University, Chennai - 600044. |  |
| 3. | Dr.M.Meenakshi Professor, Dept. of ECE, College of Engineering, Guindy Campus, Chennai - 600025 |  |
| 4. | Dr.R.Pandeeswari Associate Professor Department of ECE NIT, Trichy. |  |
| 5. | Mr.Raja Subramanian Senior Architect, Mistral Solutions Pvt Ltd Bangalore |  |
| 6. | Mr.K.A.Irshadh Abdul Rasheed Associate Partner Cyber Security Ernst And Young LLP, Chennai |  |
| 7. | Dr.S.Shanmugavel, Senior Prof, Director |  |
| 8. | Dr. S.Tamilselvi, Professor |  |
| 9. | Dr.V.Vijayarangan, Professor |  |
| 10. | Dr. V.R.S.Mani, Asso. Prof (SG) |  |
| 11. | Mr.N.Arumugam, Asso Prof |  |
| 12. | Dr.V.Suresh, Asso. Prof |  |
| 13. | Dr. T.S.Arun Samuel, Asso. Prof |  |
| 14. | Dr. T.Vijayanandh, Asst. Prof (SG) |  |
| 15. | Dr. K.J. Prasanna Venkatesan, Asst. Prof (SG) |  |
| 16. | Dr. A.Saravana Selvan, Asst. Prof (SG) |  |
| 17. | Mr. S.Cammillus, Asst. Prof (SG) |  |

| | | |
|-----|---------------------------------------|---|
| 18. | Mrs. R.Manjula Devi, Asst. Prof (SG) |  |
| 19. | Mr. C.Balamurugan, Asst. Prof (SG) |  |
| 20. | Mr. K.Subramanian, Asst. Prof (SG) |  |
| 21. | Mr. M.Satheesh Kumar, Asst. Prof (SG) |  |
| 22. | Mr. M.Sathish Kumar, Asst. Prof |  |
| 23. | Mr. B.Ganapathy Ram, Asst. Prof |  |
| 24. | Dr.I.Paulkani, Asst. Prof |  |
| 25. | Mr.M.Vignesh, Asst. Prof |  |
| 26. | Ms.A. Subitsha, III Year ECE |  |
| 27. | Ms.M. Subashini, III Year ECE |  |
| 28. | Mr.K. Athiguru, III Year ECE |  |


CHAIRMAN
BOARD OF STUDIES

Annexure - I

Minutes of 15th BoS Meeting - Action Taken Report

| S. No | Suggestion given by expert members | Action taken |
|-------|---|--------------|
| 1. | In the course 19EC35E Nano electronics, it is recommended to change the title of unit 5 (FET based Biosensors) to "Nano Electronic Sensors and Applications" | Implemented |
| 2. | In the course 19EC36E Advanced Microprocessors under R-2019 it is recommended to modify the distribution of handling hours to be even. It is also suggested to include recent processors in addition to ARM CORTEX. Unit 5 may be reduced, and multicore processor may be included. | Implemented |
| 3. | It is recommended to add more content related to ATE, types of ATE testers in the elective course 19EC37E Fundamentals of Chip testing under R-2019. Also, it is suggested to add revised books in reference. | Implemented |
| 4. | It is suggested to compare the elective course 19EC38E-ARM Processor architecture and Program under R-2019 with Advanced Microprocessor 19EC36E under R-2019 and the redundant/overlapping topics may be removed. | Implemented |
| 5. | The word "Component" may be removed from the title of the course 19EC39E - Embedded Linux System components. | Implemented |
| 6. | Title of the Unit 4 in the course 19EC45E Bio-Medical Electronics may be modified with respect to the content included. | Implemented |
| 7. | In elective course 19EC46E - Power electronics under R-2019, unit 3 and unit 4 may be combined. It is also recommended to include heat sink design and | Implemented |

| | | |
|-----|---|-------------|
| | power supply design in the course content. | |
| 8. | It is recommended to change the title of the course 19EC47E- High Speed Electronics under R-2019 as High Frequency Electronics. Applications with examples may be included in unit 1. | Implemented |
| 9. | In the course 19EC63E Machine Learning Techniques, applications may be included in the course content. | Implemented |
| 10. | Syllabus contents of the course 19EC01N Basics of Communication Systems has to be reduced. Basics of wireless communication may be included in unit 4 and 5. It is suggested to include this course as Professional Elective in EEE department. | Implemented |
| 11. | The topics on EMI/EMC, radar sensing may be introduced in the course 19EC06N Automotive Electronics under R-2019. | Implemented |
| 12. | In the course 19EC08N ARM Processor and Programming, title of the units may be modified properly. | Implemented |
| 13. | In the course 19EC09N Fundamental of DSP, it is suggested to include applications of DSP and unit 5 may be replaced with DSP multi rate/ Digital signal processors. | Implemented |
| 14. | It is recommended to change the unit titles of the course 19OE08 Embedded and Real Time Systems as follows Unit 1 - Introduction to embedded system. (Introduction to Embedded Computing) Unit 2 - Real time peripherals (Peripheral Interfacing) Unit 5 - UCOS-III Architecture (Task Management and Memory Management with UCOS - III) | Implemented |
| 15. | It is suggested to check the sequence of experiments and include isolator and circulator in the course | Implemented |

| | | |
|-----|--|-------------|
| | 19EC17L Computational Electromagnetics Lab under R2019 | |
| 16. | It is recommended to include Log Analytics, attacks, Security incidents in the course 19EC09L Network Traffic Analysis using Wireshark under R2019 | Implemented |

16th BOARD OF STUDIES MEETING – DEPARTMENT OF ECE ON 27.11.2021

The screenshot displays a Google Meet session with the following details:

- Meeting Title:** 16th BoS Meeting - ECE-NEC, Kovilpatti.
- Presenter:** VIGNESH M AP-ECE is presenting.
- Participants (Grid):**
 - Dr. Ganesh Madhan
 - Meenakshi M
 - Dr. Pandeeswaral Ramesamy
 - SUBASHINI M ECE2019
 - vijayanandhi ece
 - Prasanna Venkatesan K.J
 - ATHI GURU K ECE2019
 - Manjula devi ECE
 - Dr.I.PAULKANI AP-ECE
 - SUBITSHA ATHI
 - Raja Subramanian N
 - subramanian ece
 - 3 others
 - You
- People List (Right Panel):**
 - Mute all
 - Add people
 - Host controls
 - Prasanna Venkatesan K.J
 - Raja Subramanian N
 - Sathishkumar M
 - shriabagavalli ece
 - SUBASHINI M ECE2019
 - SUBITSHA ATHI
 - subramanian ece
 - VIGNESH M AP-ECE
 - VIGNESH M AP-ECE
- System Information (Bottom):**
 - Time: 10:55 AM
 - Location: 16th BoS Meeting-ECE-NEC, Kovilpatti.
 - Weather: 25°C, Light rain
 - Date: 11/27/2021

REC

VIGNESH M AP-ECE is presenting



VIGNESH M AP-ECE



Dr.Ganesh Madhan

SUBASHINI M ECE2019

Meenakshi M

vijayanandh ece

Ishadh Abdul Raheem

12 others

You

11:24 AM | 16th BoS Meeting - ECE - NEC, Kovilpatti.



Department of Computer Science and Engineering

MINUTES of 16th Meeting of the Board of Studies held on
27th November, 2021 at 11.00 AM

Meeting Mode: Through Hybrid mode - offline and online (Google meet)
Venue: CSE seminar Hall, National Engineering College
K.R.Nagar, Kovilpatti - 628 503
Google Meet Link: <https://meet.google.com/pyd-nwey-nxf>

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

16th Board of Studies Meeting in the Department of
Computer Science and Engineering

Meeting Mode: Through Hybrid mode - offline and online(GoogleMeet)

Venue: CSE Seminar Hall, National Engineering College

K.R.Nagar, Kovilpatti – 628 503

Google Meet Link: <https://meet.google.com/pyd-nwey-nxf>

Date & Time: 27.11.2021 & 11.00 AM

Agenda

- BoS / CSE 16.1 : Welcome address and Opening Remarks by Chairman, Board of Studies in the department of Computer Science and Engineering
- BoS / CSE 16.2 : Confirmation of the Minutes of the 15th meeting of Board of studies in the department of Computer Science and Engineering held on 25th June 2021 and Action taken report of 15th meeting of Board of studies
- BoS / CSE 16.3 : Business brought forward by the Chairman, Board of studies
- 16.3.1. Specialization (Artificial Intelligence & Machine Learning, Block chain Technology) – Curriculum, Regulation requirements for B.E-CSE programme under R2019
- 16.3.2. Additional elective courses for M.E-CSE under R2019.
- 16.3.3. Additional one credit courses for B.E-CSE Under R2019.
- 16.3.4. Refinement of existing courses.
- 16.3.5. Detailed syllabus for product development laboratory in 6th Semester.
- 16.3.6. End semester examinations in hybrid mode.
- BoS / CSE 16.4 : Any other items.
- BoS / CSE 16.5 : Suggestions given by the BoS Members

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

F. No. 1-1/NEC/CSE

27th November, 2021

Dear Sir,

Sub: Minutes of the 16th Meeting of the Board of studies in the Computer Science and Engineering -Reg.

Kindly find attached herewith the Minutes of the 16th Meeting of Board of studies of the Computer Science and Engineering of the National Engineering College, K.R.Nagar, Kovilpatti – 628 503 held on 27th November 2021 at 11.00 AM through hybrid mode - offline and online (Google meet) in the CSE Seminar hall of National Engineering college. Hard copy of the Minutes is also being sent to you by speed post.

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

Yours Sincerely

V. L. 
27/11/2021
Dr.V.Gomathi

Department of Computer Science and Engineering

MINUTES OF THE MEETING

The 16th Meeting of the Board of studies of the Computer Science and Engineering was held on 27th November, 2021 at 11.00 AM through hybrid mode - offline and online Google Meet in the CSE Seminar hall of National Engineering college.

The following members were present in the seminar hall

| | | |
|-----|---|---|
| 1. | Dr.V.GOMATHI Professor & Head | Chairman |
| 2. | Dr.D.Manimegalai, Professor& COE | Internal BoS members |
| 3. | Dr.V.Kalaivani, Professor | |
| 4. | Dr.K.MohaideenPitchai, Associate Professor (SG) | |
| 5. | Dr.M.Jayalakshmi, Associate Professor | |
| 6. | Dr.M.Bhuvanewari, Assistant Professor (SG) | |
| 7. | Dr.J.Naskath, Assistant Professor (SG) | |
| 8. | Ms.R.Rajakumari, Assistant Professor (SG) | |
| 9. | Mr.D.Vijayakumar,Assistant Professor (SG) | |
| 10. | Dr.S.Kalaiselvi, Assistant Professor (SG) | |
| 11. | Dr.G.Sivakamasundari, Assistant Professor (SG) | |
| 12. | Ms.G.R.Hemalakshmi, Assistant Professor (SG) | |
| 13. | Ms.V.Anusuya Devi ,Assistant Professor(SG) | |
| 14. | Mr.SrinivasanRajendren, Service Delivery Manager, Tata Consultancy Services, Chennai. | Industrial Experts & Alumni |
| 15. | Ms.G.Maria Justin Mary IT-Lead Remedy Application, Honeywell Technology Solutions, Madurai. | |
| 16. | Mr.Manikanda Raman Viswanathan, Principal Architect, Cognizant Digital Operations, CTS, Chennai. | Adjunct faculty and Alumni |
| 17. | Ms. Suji S, III year CSE | Student Members Nominated by the HOD |
| 18. | Mr. Narain C A, III year CSE | |

| Experts attended the meeting Online(Google Meet) | | |
|--|--|-------------------------|
| 19. | Dr. K. S. Easwarakumar Professor, Dept. of Computer Science and Engineering, CEG Campus Anna University, Chennai. | Anna university Nominee |
| 20. | Dr. C.Krishna Mohan Professor & Head Dept. of Computer Science and Engineering, Indian Institute of Technology Hyderabad, Hyderabad. | Academic Experts |
| 21. | Dr. C. Mala Professor, Dept. of Computer Science and Engineering, National Institute of Technology Trichy, Trichy. | |
| 22. | Dr.G.R.Karpagam, Professor, Dept. of Computer Science and Engineering, PSG College of Technology, Avinashi Road, Peelamedu. Coimbatore. | |
| 23. | Mr.D.Siddharthan, Delivery Manager, Wipro Technologies Pvt. Ltd, Chennai. | Industrial Experts |

Dr.G.Kousalya, Professor & Head of the Department, Dept. of Computer Science and Engineering, Coimbatore Institute of Technology and Mr.Roy Antony Arnold, Lead - Education and Research, Infosys Pvt Ltd., Chennai could not attend the meeting due to their prior commitments and unavoidable reasons and were granted leave of absence.

BoS / CSE 16.1 : WELCOME ADDRESS AND OPENING REMARKS BY
CHAIRMAN, BOARD OF STUDIES IN THE DEPARTMENT
OF COMPUTER SCIENCE AND ENGINEERING

The Chairman, BoS of the Computer Science and Engineering welcomed and introduced the members of 16th Board of Studies and thanked each one of them for sparing their valuable time to attend the meeting.

BoS/ CSE 16.2 : TO CONFIRM THE MINUTES OF 15th BOS MEETING HELD ON 25th June, 2021

The minutes of the 15th Board of Studies meeting held on 25th June 2021 were communicated to the members. The comments received have been incorporated and placed for confirmation. The same was approved by the 15th Academic council.

➤ **Action Taken Report**

(Enclosed in Annexure D)

BoS/CSE 16.3.1 : TO CONFIRM AND APPROVE OF SPECIALIZATION (AI & ML, BLOCK CHAIN TECHNOLOGY) – CURRICULUM, REGULATION REQUIREMENTS FOR B.E CSE PROGRAMME UNDER R2019

RESOLVED TO approve specialization (AI&ML, Block chain technology) – curriculum, regulation requirements for B.E-CSE programme under R2019

BoS/ CSE 16.3.2 : TO CONFIRM AND APPROVE OF ADDITIONAL ELECTIVE COURSES FOR M.E-CSE UNDER R2019

RESOLVED TO approve additional elective courses for M.E-CSE under R2019

BoS/ CSE 16.3.3 : TO CONFIRM AND APPROVE OF ADDITIONAL ONE CREDIT COURSES FOR B.E-CSE UNDER R2019

RESOLVED TO approve additional one credit courses for B.E-CSE under R2019

BoS/ CSE 16.3.4 : TO CONFIRM AND APPROVE OF REFINEMENT OF EXISTING COURSES UNDER R2019

RESOLVED TO approve refinement of existing courses under R2019

BoS/ CSE 16.3.5 : **TO CONFIRM AND APPROVE OF DETAILED SYLLABUS FOR PRODUCT DEVELOPMENT LABORATORY IN 6th SEMESTER**

RESOLVED TO approve detailed syllabus for product development laboratory in 6th semester

BoS/ CSE 16.3.6 : **TO CONFIRM AND APPROVE OF END SEMESTER EXAMINATIONS IN HYBRID MODE**

RESOLVED TO approve end semester examinations in hybrid mode

BoS/CSE 16.4 : **ANY OTHER ITEMS, IF ANY, WITH THE PERMISSION OF THE CHAIRMAN OF THE BOS**

On the whole, this new initiative was very much appreciated by all members. The challenges faced by the students (if any) should be periodically discussed with them. They also congratulated the faculty members for their team efforts towards continuing Education.

BoS/ CSE 16.5 : **SUGGESTIONS GIVEN BY THE BOS MEMBERS**

16.5.1 : List of courses for B.E. specialization in Artificial Intelligence & Machine Learning are appreciated by Anna University nominee and commented that syllabus is fine.

16.5.2 : Anna University nominee suggested that the specialization courses may be taken from PG courses. The same has been followed in Anna University, Chennai.

- 16.5.3 : One or two NPTEL courses may be mandatory for B.E specialization courses.
- 16.5.4 : Number of batches for specialization courses may be increased, if student registration is beyond 40, by keeping batch size as 40.
- 16.5.5 : The syllabus contents for B.E. specialization in blockchain technology may be reduced and revised. The case study and practicals may be included in blockchain technology specialization course
- 16.5.6 : Two new elective courses such as 19CT28E-Vehicular adhoc networks, 19CT29E-Cloud management and security are introduced in M.E-CSE under R2019. Evaluation pattern of M.E courses and Ph.D course works are discussed
- 16.5.7 : One credit course, 19CS30L Microprocessor and microcontroller is introduced in the B.E-CSE under R2019. The content of syllabus is appreciated by Industrial expert members.
- 16.5.8 : Refinement of courses in B.E and M.E under R2019 are presented. In 19CS66C- Product Development Laboratory course, content is 100 % refined as per industrial expectation. In unit 1, customer need identification, target specifications and concept selection and in unit 2, prototyping and demonstration topics are included. Mentor activities and end semester assessments are refined. Theory hour is included to deliver the design thinking concept to

students and practical hours are revised.

- 16.5.9 : In 19CT20E - Data Science course, Unit 1, 2, 5 contents are refined and statistical concepts and exploratory data analytics concepts are included. 60 % of the course contents are refined.
- 16.5.10 : In 19CT26E Data Science laboratory course, contents are refined as per theory course refinement and mini project is included. 50% of the course contents are refined.
- 16.5.11 : In, 19CS51C- Java Programming course, unit 3 and unit 4 contents such as collection framework and swing framework are refined. In this course, 40% of the contents are refined as per new trends in industries.
- 16.5.12 : In 19CS36C - Software Engineering Methodologies, 19CS15E-Artificial Intelligence, 19CS28L- Python for Machine Learning courses, COs are refined.
- 16.5.13 : End semester examinations reforms are presented. MCQ section may be removed in the end semester examination pattern and it may be considered for internal assessment. Descriptive pattern only may be considered for end semester examination and not hybrid mode.

The members had a brainstorming discussion and interaction among themselves. After discussion, fruitful suggestions were incorporated appropriately in the Syllabi.

Based on the suggestions given by the members, BOS resolved to recommend the following to the Academic Council for further approval.

- Specialization (AI & ML, Block chain Technology) - Curriculum, Regulation requirements for B.E CSE programme under R2019.
- Additional elective courses for M.E-CSE under R2019.
- Additional one credit courses for B.E-CSE under R2019.
- Refinement of existing courses.
- Detailed Syllabus for Product Development Laboratory in 6th Semester.
- End semester Examinations in hybrid mode.

Dr.J.Naskath, Assistant Professor (SG), thanked all the members for their valuable suggestions and cooperation and the meeting came to an end.

Members Present

| | |
|--|--|
| Dr.V.Gomathi Chairman | V. L. $\frac{27/11/2021}{\uparrow}$ |
| <i>Internal Members</i> | |
| Dr.D.Manimegalai Professor | D. M. $\frac{27/11/21}{\downarrow}$ |
| Dr.V.Kalaivani Professor | V. Kal. $\frac{27/11/2021}{\downarrow}$ |
| Dr.K.Mohaideen Pitchai Associate Professor (SG) | K. Mohaideen $\frac{27/11/2021}{\downarrow}$ |
| Dr.M.Jayalakshmi Associate Professor | M. Jayalakshmi $\frac{27/11/2021}{\downarrow}$ |
| Dr.M.Bhuvaneshwari Assistant Professor (SG) | M. B. $\frac{27/11/2021}{\downarrow}$ |
| Dr.J.Naskath Assistant Professor (SG) | J. Naskath $\frac{27/11/21}{\downarrow}$ |
| Ms.R.Rajakumari Assistant Professor (SG) | R. Rajakumari $\frac{27/11/2021}{\downarrow}$ |
| Mr.D.Vijayakumar Assistant Professor (SG) | D. Vijayakumar $\frac{27/11/21}{\downarrow}$ |
| Dr.S.Kalaiselvi Assistant Professor (SG) | S. Kalaiselvi $\frac{27/11/21}{\downarrow}$ |
| Dr.G.Sivakamasundari Assistant Professor (SG) | G. Sivakamasundari $\frac{27/11/2021}{\downarrow}$ |
| Ms.G.R.Hemalakshmi Assistant Professor (SG) | G. R. Hemalakshmi |
| Ms.V.Anusuya Devi Assistant Professor(SG) | V. Anusuya Devi $\frac{27/11/2021}{\downarrow}$ |

| Experts attended the meeting Offline | |
|--|-----------------------------------|
| <i>Industrial Experts</i> | |
| Mr.Srinivasan Rajendren Service Delivery Manager, Tata Consultancy Services, Chennai. | <i>R Srinivasan</i> 27/11 |
| <i>Adjunct faculty and Alumni</i> | |
| Mr.Manikanda Raman Viswanathan Principal Architect, Cognizant Digital Operations, CTS,Chennai. | <i>M</i> 27/11 |
| <i>Alumni</i> | |
| Mrs.G.Maria Justin Mary IT-Lead Remedy Application, Honeywell Technology Solutions, Madurai. | <i>G Maria Justin</i> 27/11/21 |
| <i>Student Members Nominated by the HOD</i> | |
| Ms. Suji S, III year CSE | <i>Suji S</i> |
| Mr. Narain C A, III year CSE | <i>Narain C A</i> |
| Experts attended the meeting Online | |
| <i>Anna University Nominee</i> | |
| Dr. K. S. Easwarakumar Professor, Dept. of Computer Science and Engineering, CEG Campus, Anna University, Chennai. | |
| <i>Academic Experts</i> | |
| Dr. C.Krishna Mohan Professor & Head, Dept. of Computer Science and Engineering, Indian Institute of Technology Hyderabad, Hyderabad. | |
| Dr. C. Mala Professor, Dept. of Computer Science and Engineering, National Institute of Technology, Tiruchirappalli, Tiruchirappalli. | |
| Dr.G.R.Karpagam Professor, Dept. of Computer Science and Engineering, PSG College of Technology, Avinashi Road, Peelamedu, Coimbatore. | |
| <i>Industrial Experts</i> | |
| Mr.D.Siddharthan, Delivery Manager, Wipro Technologies Pvt. Ltd, Chennai. | |

V. L. S.
27/11/2021
CHAIRMAN
BOARD OF STUDIES

Annexure I

Action Taken Report for Minutes of 15th BOS

As per BOS committee suggestions,

- Advanced database technology course content has been revised by including MongoDB, PostgreSQL.
- Comprehension course, Special Interest Group (SIG) category has been revised.
- SQL programming course contents has been revised by including 'Neo4j'.
- The networks related elective courses has been revised


CHAIRMAN
BOARD OF STUDIES
27/11/2021

Department of Electrical and Electronics Engineering

MINUTES 16th Meeting of the Board of studies held on
29th November 2021 at 10.00 AM

Meeting Mode: Through online (GoogleMeet)

Google Meet Link: <https://meet.google.com/nju-chox-yne>

National Engineering College, K.R.Nagar, Kovilpatti - 628 503

(An Autonomous Institution - Affiliated to Anna University, Chennai)

www.nec.edu.in

Department of Electrical and Electronics Engineering

National Engineering College, K.R.Nagar, Kovilpatti – 628 503

(An Autonomous Institution - Affiliated to Anna University, Chennai)

www.nec.edu.in

16th Board of studies Meeting in the Department of Electrical and Electronics Engineering

Meeting Mode: Through online (GoogleMeet)

Google Meet Link: <https://meet.google.com/nju-chox-yne>

Date & Time: 29.11.2021 & 10.00 AM

AGENDA

- BoS / EEE 16.1 : Welcome address and Opening Remarks by Chairman, Board of studies in the Department of Electrical and Electronics Engineering
- BoS / EEE 16.2 : Confirmation of the Minutes of the 15th meeting of Board of Studies in the Department of Electrical and Electronics Engineering held on 25th June 2021, and Action Taken report of 15th meeting of Board of studies
- BoS / EEE 16.3 : Business brought forward by the Chairman, Board of studies
- 16.3.1 Programme elective courses for UG degree programmes under R-2019
 - 16.3.2 One credit elective course for UG degree programmes under R-2019
 - 16.3.3 Specialization elective courses for UG degree programmes under R-2019
 - 16.3.4 Syllabus for Product Development Laboratory in 6th Semester
 - 16.3.5 Credit transfer for other online courses like udemy, coursera etc., and norms for credit transfer
 - 16.3.6 End semester Examinations in hybrid mode
- BoS / EEE 16.4 : Any other items
- BoS / EEE 16.5 : Suggestions given by the BoS Members

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

F. No. 1-1/NEC/EEE.

29th November, 2021

Dear Sir/Madam,

Sub: Minutes of the 16th Meeting of the Board of studies in the EEE-Reg.

Kindly find attached herewith the Minutes of the 16th Meeting of Board of studies of the Electrical and Electronics Engineering of the National Engineering College, K.R.Nagar, Kovilpatti – 628 503 held on 29th November, 2021 at 10.00 AM in National Engineering college, through GoogleMeet. Hard copy of the Minutes is also being sent to you by speed post.

It is requested that comments on the Minutes, if any, may please be sent by email at hodeeee@nec.edu.in or by post, at the earliest. If no comments are received, within ten days, the Minutes shall be taken as confirmed. With Kind Regards,

Yours Sincerely


Dr.M.Willjuice Iruthayarajan

Department of Electrical and Electronics Engineering

MINUTES OF THE MEETING

The 16th Meeting of the Board of studies of the Electrical and Electronics Engineering was held on 29th November, 2021 at 10.00 AM in National Engineering College, through GoogleMeet.

The following members were present:

| | | |
|-----|--|-----------------------|
| 1. | Dr.M.Willjuice Iruthayarajan Professor and Head/ EEE | Chairman |
| 2. | Dr.L.Kalaivani Professor/ EEE | Internal Members |
| 3. | Dr.R.V.Maheswari Professor/ EEE | |
| 4. | Dr.M.Ravindran Associate Professor (S.G) / EEE | |
| 5. | Dr.N.B.Prakash Associate Professor / EEE | |
| 6. | Dr.G.Kannayeram Assistant Professor(S.G) / EEE | |
| 7. | Dr.M.P.E.Rajamani Assistant Professor (S.G) / EEE | Academic Expert |
| 8. | Dr. V. Suresh Kumar, Professor, Department of Electrical and Electronics Engineering, Thiagarajar College of Engineering, Madurai, Tamilnadu. | |
| 9. | Dr. Rajesh Joseph Abraham Associate Professor, Department of Avionics, Indian Institute of Space Science and Technology, Valiamala P.O., Thiruvananthapuram, Kerala. | University Nominee |
| 10. | Dr. S. Usa, Professor, Department of Electrical and Electronics Engineering, CEG Campus, Anna University, Chennai. | |

| | | |
|-----|--|------------------------|
| 11. | Dr. S. Paramasivam, R&D Head, Electrical Drives, Danfoss Industries Ltd., Chennai | Industrial Expert |
| 12. | Dr. Santosh Kumar Annadurai GE T&D Ltd., GIS R&D Centre, Unit R&D Head, Padappai, Chennai. | |
| 13. | Mr. M. Ramesh Senior Technical Engineer, Hardware Design and Development, Data Patterns India Pvt. Ltd., Chennai. | |
| 14. | R. Jayakumar, Assistant Vice President, Wipro Technology Ltd., Bangalore | Meritorious Alumnus |
| 15. | Mr. J. S. Jekhan, Third Year / EEE | Student Members |
| 16. | Ms. J. Joyslin Janet, Third Year / EEE | |

The Industrial Experts Dr. Hariram Satheesh, Principal Scientist, ABB Global Industries and Services Ltd, Bangalore & Mr.S.Subramanian, Senior Maintenance Engineering (I), Kudankulam Nuclear Power Project, Kudankulam, could not attend the meeting due to his prior commitments and unavoidable reasons and were granted leave of absence.

| | | |
|----------------|---|---|
| BoS / EEE 16.1 | : | WELCOME ADDRESS AND OPENING REMARKS BY CHAIRMAN, BOARD OF STUDIES IN THE DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING |
| | | The Chairman, BOS of the Electrical and Electronics Engineering welcomed and introduced the members of 16 th Board of Studies and thanked each one of them for sparing their valuable time to attend the meeting. |
| BoS / EEE 16.2 | : | TO CONFIRM THE MINUTES OF FIFTEENTH BOS MEETING HELD ON 25 th JUNE 2021 |
| | | The minutes of the Fifteenth Board of Studies meeting held on 25 th June 2021 were communicated to the members vide letter No. F. No. 1-1/NEC/EEE, Dated 25.06.2021. The comments received have been incorporated and placed for confirmation. The same was approved by the 15 th Academic council. |

| | | <u>Action Taken Report</u> (Enclosed in Annexure D) |
|------------------|---|---|
| BoS / EEE 16.3.1 | : | TO CONFIRM AND APPROVE THE SYLLABUS OF PROGRAMME ELECTIVE COURSES FOR UG (B.E. – EEE) PROGRAMME UNDER R-2019 |
| | | RESOLVED TO approve the syllabus of programme elective courses for UG (B.E. – EEE) PROGRAMME under R-2019. |
| Bos/EEE 16.3.2 | : | TO CONFIRM AND APPROVE THE SYLLABUS OF ONE CREDIT ELECTIVE COURSE FOR UG (B.E. – EEE) PROGRAMME UNDER R-2019 |
| | | RESOLVED TO approve the syllabus of One Credit Elective course “Switchgear and Protection Laboratory” for UG (B.E. – EEE) PROGRAMME under R-2019. |
| Bos/EEE 16.3.3 | : | TO CONFIRM AND APPROVE THE SYLLABUS OF SPECIALIZATION ELECTIVE COURSES FOR UG DEGREE PROGRAMME UNDER R-2019 |
| | | RESOLVED TO approve the syllabus of specialization elective courses for UG DEGREE PROGRAMME under R-2019. |
| Bos/EEE 16.3.4 | : | TO CONFIRM AND APPROVE THE SYLLABUS OF PRODUCT DEVELOPMENT LABORATORY COURSES IN SIXTH SEMESTER FOR UG DEGREE PROGRAMME UNDER R-2019 |
| | | RESOLVED TO approve the syllabus of “Product Development Laboratory” courses in 6 th Semester for UG DEGREE PROGRAMME under R-2019. |
| Bos/EEE 16.3.5 | : | TO CONFIRM AND APPROVE CREDIT TRANSFER FOR OTHER ONLINE COURSES LIKE UDEMY, COURSERA ETC., AND NORMS FOR CREDIT TRANSFER FOR UG DEGREE PROGRAMME UNDER R-2019 |

| | | |
|----------------|---|---|
| | | The proper guidelines from UGC, AICTE and Anna University may be followed for the credit transfer for other online courses like Udemy, Coursera etc. |
| Bos/EEE 16.3.6 | : | TO CONFIRM AND APPROVE CONDUCTION OF END SEMESTER EXAMINATIONS IN HYBRID MODE FOR UG AND PG DEGREE PROGRAMME |
| | | Guidelines from Tamilnadu government and Anna university may be followed for conducting End semester examinations. |
| Bos/EEE 16.4 | : | ANY OTHER ITEMS, IF ANY, WITH THE PERMISSION OF THE CHAIRMAN OF THE BOS |
| 16.4.1 | : | The External Members have suggested that some new specialization Elective domains may be given in future along with "Vehicle Electronics and Control". |
| 16.4.2 | : | For taking specialization Elective courses, Guest lectures may be arranged with the help of industry persons. |
| 16.4.3 | : | For reviewing UG/PG students project, Industrial experts may be assigned as evaluator. |
| | | |
| Bos/EEE 16.5 | : | SUGGESTIONS GIVEN BY THE BOS MEMBERS |
| 16.5.1 | : | In the course "Electrical Drives", Unit-III Title may be modified as Design of Controllers for DC Drives and manual for drives may be given in reference. |
| 16.5.2 | : | In the course "Power System Dynamics and Control", reference book may be updated. |
| 16.5.3 | : | In the course "Power Electronics for Renewable Energy Systems", the content related to generators may be reduced in the syllabus. |
| 16.5.4 | : | In the course "EHV Power Transmission", syllabus may be reframed to include FACTS, HVDC, Electromagnetic Fields, online condition Monitoring, etc. |
| 16.5.5 | : | In the course "HVDC Transmission Systems", Topologies related to advanced converters may be included in Unit – II. |
| 16.5.6 | : | In the courses "Soft Computing for Electrical Engineering" and |

| | |
|---------|---|
| | “MEMS and NEMS, updated versions of books may be included in text and reference books. |
| 16.5.7 | : In the course “Embedded Systems”, course content may be expanded with overview of latest smart storage memories, and industry related approaches in embedded systems |
| 16.5.8 | : In the course “DSP Based System Design”, the contents such as Application related to signal processing, video and image processing. |
| 16.5.9 | : In the course, “Electric Vehicle Machines and Drive Systems”, conventional vehicle drive system and its issues may be included in Unit I. In Unit II and III, content related with motors may be given as overview. |
| 16.5.10 | : In the course, “Battery Management System and modeling”, basics of batteries may be given in Unit-I. content related with battery charging, discharging and its performance on EV applications may be added in Unit II. EV charging station, Battery disposal and recycling techniques may be included in Unit V. |
| 16.5.11 | : In the Course, “ Control of Hybrid Electric Vehicles” analysis of Hybrid EV system may be given in detail. Case studies related to energy storage system modeling may be added. |
| 16.5.12 | : In the Course, “Autonomous Intelligent Vehicle”, sensors related to state estimation of vehicle may be included. Radar tracking system may be added. |
| 16.5.13 | Based on the agenda Bos/EEE 16.3.5 the external BOS members suggested to follow AICTE and Anna University guidelines and get proper approval from academic council. |
| 16.5.14 | Based on the agenda Bos/EEE 16.3.6 regrading conduction of end semester examinations in hybrid mode has to be followed with respect to Tamilnadu Government and Anna University guidelines and get proper approval from academic council. |

The members had a brainstorming discussion and interaction among themselves. After discussion, fruitful suggestions were incorporated appropriately in the Curriculum and Syllabi. Based on the suggestions given by the members, BOS resolved to recommend the Academic Council for further approval.

Dr.N.B.Prakash, Associate Professor/EEE thanked all the members for their kind cooperation and the meeting came to an end.


CHAIRMAN
BOARD OF STUDIES

Annexure – I

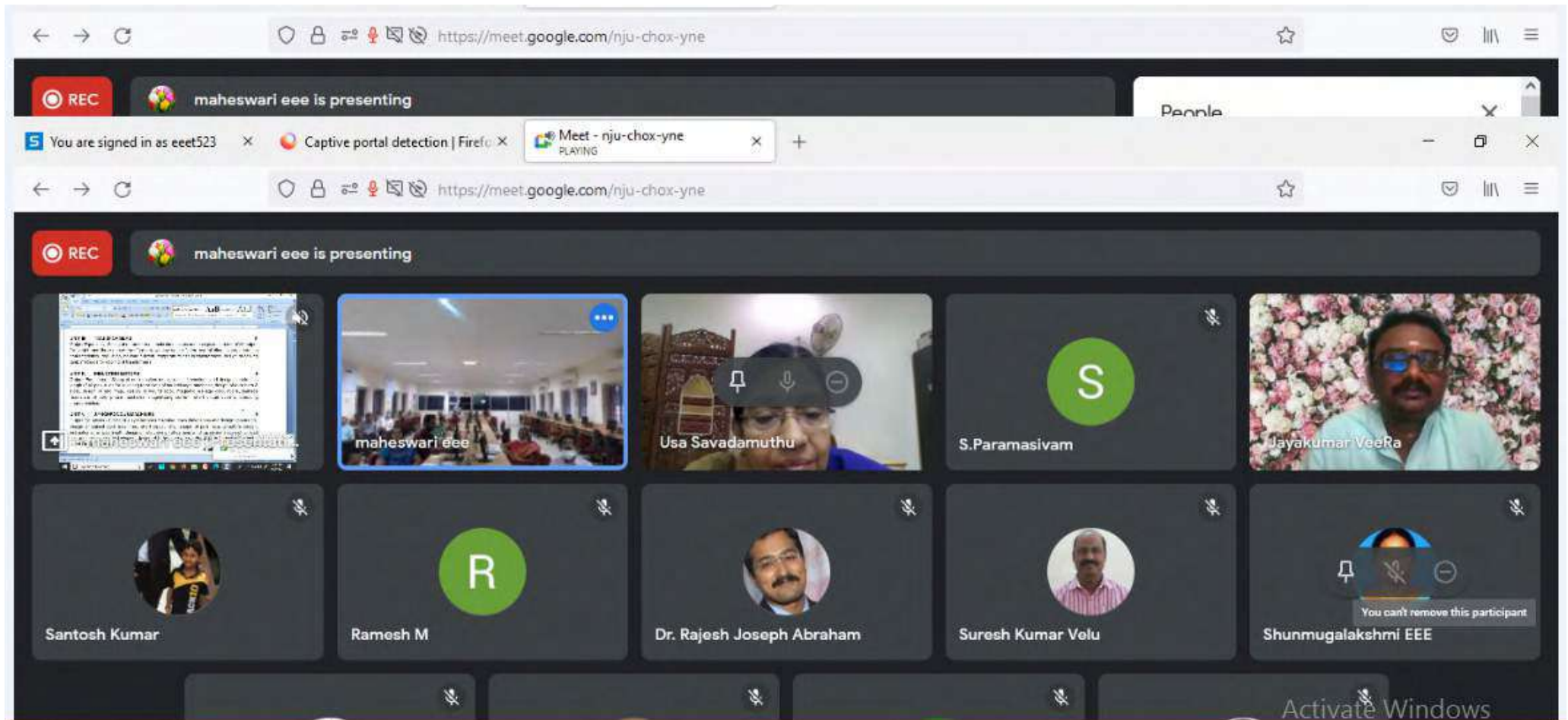
Action Taken on Suggestions from 15th BOS Meeting

| Suggestions | Action Taken |
|---|---|
| The course "Switchgear and Protection Laboratory" is suggested to give as one credit elective laboratory course instead of core course in seventh semester. | Corrections are incorporated in the curriculum and Syllabus |
| In the course "Special Electrical Machines", topics such as PCB motor and flux switch machine may be included in Unit – V. | Corrections are incorporated in the Syllabus |
| In the course "Power Electronics for Renewable Energy Systems", the content of the syllabus may be framed with broad concepts of converters and inverters. | |
| In the course "Power Electronics for Renewable Energy Systems", the content related to generators may be reduced in the syllabus. | |
| In the course "Power System Transients", Unit – III may be included with the contents of Grounding and Earthing requirements, Earthing resistance, and Safety measures against lightning. | |
| In the course "Power System Transients", Unit – IV may be completely changed to incorporate the contents such as protection and suppression of transients. | |
| In the course "Power System Transients", Unit – V may be included with the contents of Modelling of Lightning and over-voltage scenario. | |
| For the course "CAD of Electrical Apparatus", L T P C may be changed to convert the course for incorporating tutorial classes. | Corrections are incorporated in the Curriculum |
| In the course "CAD of Electrical Apparatus", the title of Unit – II may be changed. | |
| In the course "CAD of Electrical Apparatus", Unit – IV and Unit – V may be given equal weightage to include application related topics. | |

| | |
|---|--|
| In the course "CAD of Electrical Apparatus", some more reference books may be added. | Corrections are incorporated in the Syllabus |
| In the course "Insulation Technology", the additional content of moisture interaction with insulation may be added in Unit – II. | |
| In the course "Insulation Technology", the contents of effect of moisture and importance of purity may be added in Unit – IV. | |
| In the course "Insulation Technology", some contents may be added related to alternate insulation, and degradable and non degradable insulation. | |
| In the course "Logic and Distributed Control System", the content of Unit – I may be included with Scan time and Scan cycle, Case study of multiple parameters and logics and Inputs-Outputs. | |
| In the course "Logic and Distributed Control System", contents such as Time synchronization, Time stamping of events may be included in Unit – III. | |
| In the course "Logic and Distributed Control System", the content of Unit – IV may be included with the topics such as Watchdog controller for error detection, H/W or S/W defects, and Master slave concept. | |
| In the course "Logic and Distributed Control System", the contents such as Topology of lower and upper level controls and monitoring, GPS clock synchronizer in DCS may be included in Unit – V. | |
| In the course "Robotics and Automation", some more reference books may be included. | Corrections are incorporated in the Syllabus |
| In the course "Mobile Robots and Control", the contents related to remote control through wireless communication and connected robots may be added in Unit – V | |


EEE Board Chairman

16th BOARD OF STUDIES MEETING – DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING ON 29.11.2021



16th BOARD OF STUDIES MEETING – DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING ON 29.11.2021

The image shows a Google Meet interface. At the top, a browser window displays the URL <https://meet.google.com/nju-chox-yne>. The main meeting area shows a presentation slide from a Microsoft Word document titled 'Syllabus for EE 805 - Microsoft Word'. The slide content is as follows:

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

- CO1: discuss the concepts of multi quadrant dynamics of drives. (K2)
- CO2: explain the steady state analyze of fully controlled converter fed separately excited dc drives. (K2)
- CO3: design of controller for electrical drives. (K2)
- CO4: explain the various speed control strategies of induction motor. (K2)
- CO5: describe the various control techniques of synchronous motor. (K2)

UNIT I DRIVE CHARACTERISTICS 9
Electric drive – Equations governing motor steady state stability – multi quadrant Dynamics: acceleration, deceleration, starting & stopping – typical load torque characteristics – Selection of motor.

UNIT II CONVERTER / CHOPPER FED DC DRIVE 9
Steady state analysis of fully controlled converter fed separately excited DC drive – Continuous and discontinuous conduction – Time ratio and current limit control – Four quadrant operation of converter / chopper fed drive.

On the right side of the meeting, a grid of participants is visible:

- maheswari eee (presenting)
- U: Usa Savadamuthu
- J: Jayakumar VeeRa
- S: S.Paramasivam
- Santosh Kumar
- R: Ramesh M
- Dr. Rajesh Josep...
- Suresh Kumar V...
- Shunmugalaksh...

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Department of Information Technology

National Engineering College, K.R.Nagar, Kovilpatti – 628 503.

(An Autonomous Institution - Affiliated to Anna University, Chennai)

www.nec.edu.in

16th Board of studies Meeting in the Department of
Information Technology

Meeting Mode: Through online (GoogleMeet)

Google Meet Link: meet.google.com/jip-xxdf-ird

Date & Time: 25.11.2021 & 03.30 p.m.

Agenda

| | | |
|---------------|---|--|
| BoS / IT 16.1 | : | Welcome address and Opening Remarks by Chairman, Board of studies in the department of Information Technology |
| BoS / IT 16.2 | : | Confirmation of the Minutes of the 15 th meeting of Board of studies in the department of Information Technology held on 23 rd JUNE 2021 and Action taken report of 15 th meeting of Board of studies |
| BoS / IT 16.3 | : | Business brought forward by the Chairman, Board of studies 16.3.1 Curriculum Restructuring of R2019 16.3.2 Syllabus Reformation of R2019 16.3.3 Specialization course to be offered in UG degree programme under R-2019 – Data Science 16.3.4 Credit Transfer for other online courses like udemy, coursera etc., and norms for credit transfer 16.3.5 End Semester Examination - Reforms |
| BoS / IT 16.4 | : | Any other items |
| BoS / IT 16.5 | : | Suggestions given by the BoS Members |

Department of Information Technology

National Engineering College, K.R.Nagar, Kovilpatti – 628 503
(An Autonomous Institution - Affiliated to Anna University, Chennai)
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F. No. 16.1/NEC/ IT/2020-21


25th Nov, 2021

Dear Sir/Madam,

Sub: Minutes of the 16th Meeting of the Board of studies in the Information Technology - Reg.

Kindly find attached herewith the Minutes of the 16th Meeting of Board of studies of the Information Technology of National Engineering College, K.R.Nagar, Kovilpatti – 628503 held on 25th Nov, 2021 at 03.30 PM through Google Meet. Hard copy of the Minutes is also being sent to you by speed post.

It is requested that comments on the Minutes, if any, may please be sent by email at hodit@nec.edu.in or by post, at the earliest. If no comments are received, within ten days, the Minutes shall be taken as confirmed. With kind Regards,

Yours Sincerely

(Dr.K.G.Srinivasagan)

Department of Information Technology

MINUTES of 16th Meeting of the Board of studies held on
25th Nov, 2021 at 03.30 PM

Meeting Mode: Through online (GoogleMeet)

Google Meet Link: meet.google.com/iip-xxdf-ird

National Engineering College, K.R.Nagar, Kovilpatti – 628 503
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MINUTES OF THE MEETING

The 16th Meeting of the Board of studies of the Information Technology was held on 25th Nov 2021 at 03.30 PM through Google Meet.

1. The following members were present:

| | | |
|-----|--|-----------------------------|
| 1. | Dr.K.G.Srinivasagan | Chairman |
| 2. | Dr.R.Muthukkumar, Asso. Prof. | Internal Members |
| 3. | Dr.S.Chidambaram, Asst. Prof. (SG) | |
| 4. | Dr.S.Rajagopal, Asst. Prof. (SG) | |
| 5. | Dr.V.Jackins, Asst. Prof. (SG) | |
| 6. | Mr.G.Pandiyarajan, Asst. Prof. | |
| 7. | Ms.V.Anitha, Asst. Prof. | |
| 8. | Ms.S.Santhi, Asst. Prof. | |
| 9. | Dr.S.Swamynathan, Professor, Department of Information Science &Technology, Anna University, Chennai. | University Nominee |
| 10. | Dr.P.Yogesh, Professor, Department of Information Science &Technology, Anna University, Chennai. | Academic/Alumni Expert |
| 11. | Dr. Shajulin Benedict, Assistant Professor, Department of Computer Science and Engineering, IIT - Kottayam. | Special Invitee |
| 12. | Dr. Debasis Samanta, Associate Professor Department of Computer Science & Engineering, IIT - Kharagpur. | Special Invitee |
| 13. | Mr.Antony Arravindh, Senior Project Manager, HCL Technologies, Chennai. | Alumni/Industrial Expert |
| 14. | Dr.K.M.Suceendran, General Manager, Tata Consultancy Services, Chennai. | Industrial Expert |
| 15. | Anandh.A, Third year | Student Members |
| 16. | Anto Rosario.S, Third year | |

| | | |
|-----------------|---|---|
| BoS / IT 16.1 | : | WELCOME ADDRESS AND OPENING REMARKS BY CHAIRMAN, BOARD OF STUDIES IN THE DEPARTMENT OF INFORMATION TECHNOLOGY |
| | | The Chairman, BoS of the Information Technology welcomed and introduced the members of 16 th Board of Studies and thanked each one of them for sparing their valuable time to attend the meeting. |
| BoS / IT 16.2 | : | TO CONFIRM THE MINUTES OF FOURTEENTH BOS MEETING HELD ON 16 th NOV, 2021. |
| | | The minutes of the Fifteenth Board of Studies meeting held on 23 rd Nov, 2021 were communicated to the members. The comments received have been incorporated and placed for confirmation. The same was approved by the 15 th Academic council. ➤ Action Taken Report (Enclosed in <i>Annexure D</i>) |
| BoS / IT 16.3.1 | : | TO CONFIRM AND APPROVE CURRICULUM RESTRUCTURING OF R2019 |
| | | RESOLVED TO APPROVE curriculum restructuring of R2019 |
| BoS / IT 16.3.2 | : | TO CONFIRM AND APPROVE SYLLABUS REFORMATION OF R2019 |
| | | RESOLVED TO APPROVE syllabus Reformation of R2019 |
| BoS / IT 16.3.3 | : | TO CONFIRM AND APPROVE SPECIALIZATION COURSE TO BE OFFERED IN UG DEGREE PROGRAMME UNDER R-2019 – DATA SCIENCE |
| | | RESOLVED TO APPROVE specialization course to be offered in UG degree programme under R-2019 – Data Science |
| BoS / IT 16.3.4 | : | TO CONFIRM AND APPROVE CREDIT TRANSFER FOR OTHER ONLINE COURSES LIKE UDEMY, COURSERA ETC., AND NORMS FOR CREDIT TRANSFER |
| | | RESOLVED TO APPROVE credit transfer for other online courses like udemy, coursera etc., and norms for credit |

| | | |
|-----------------|---|--|
| | | transfer |
| BoS / IT 16.3.5 | : | TO CONFIRM AND APPROVE END SEMESTER EXAMINATION - REFORMS |
| | | RESOLVED TO APPROVE end semester examination - reforms |
| BoS / IT 16.4 | : | SUGGESTIONS GIVEN BY THE BOS MEMBERS |
| 16.4.1 | : | Business Process Management – a core course may be shifted from seventh semester to sixth semester. A program elective course may be shifted from sixth semester to seventh semester |
| 16.4.2 | : | In Product Development Laboratory units may be refined with some specification elaborations using design thinking course. Units may be added with some software tools that help to apply design thinking concepts in product development. |
| 16.4.3 | : | Courses under specialization may be sequentially ordered before offering to students to ensure continuity. |
| 16.4.4 | : | In Introduction to Data Science course repetition of contents may be avoided under each unit. Contents related to statistical techniques may be included. |
| 16.4.5 | : | In Machine Learning Techniques course fundamental introduction regarding Supervised Learning, Semi-supervised Learning and Unsupervised Learning may be included. Concepts related to Classification and Clustering Techniques may be elaborated. |
| 16.4.6 | : | In Data Analytics Concepts and Tools course units may be organized based on one standard text book. |
| 16.4.7 | : | In Business Intelligence in Data Science course instead of Business Intelligence, recent areas like Data Science with IoT, Cloud Computing, Health Data Analysis, Social Media Analysis, Smart city applications may be considered. |
| 16.4.8 | : | There are more basic courses in Udemy and Coursera for which allocating mentor, monitoring and documenting the student's progress may be focused. |
| 16.4.9 | : | Hybrid mode of examination may be avoided since University is insisting to conduct examinations only through offline. |
| 16.4.10 | : | Innovation through Design Thinking course may be given in |

| | |
|--|--|
| | Fourth Semester for the 2020 - 2024 batch students as an one time amendment. |
|--|--|

The members had a brainstorming discussion and interaction among themselves. After discussion, fruitful suggestions were incorporated.

Based on the suggestions given by the members, BOS resolved to recommend the following to the Academic Council for further approval.

- a) Curriculum Restructuring of R2019
- b) Syllabus Reformation of R2019
- c) Specialization course to be offered in UG degree programme under R-2019 – Data Science
- d) Credit Transfer for other online courses like udemy, coursera etc., and norms for credit transfer
- e) End Semester Examination - Reforms

Ms.S.Santhi, Asst. Prof., thanked all the members for their kind cooperation and the meeting came to an end.

Members Present Online:

| | | |
|-----|--|-----------------------|
| 1. | Dr.K.G.Srinivasagan, Prof & Head ,Board Chairman | Chairman |
| 2. | Dr.R.Muthukkumar, Asso. Prof. | Internal Members |
| 3. | Dr.S.Chidambaram, Asst. Prof. (SG) | |
| 4. | Dr.S.Rajagopal, Asst. Prof. (SG) | |
| 5. | Dr.V.Jackins, Asst. Prof. (SG) | |
| 6. | Mr.G.Pandiyarajan, Asst. Prof. | |
| 7. | Ms.V.Anitha, Asst. Prof. | |
| 8. | Ms.S.Santhi, Asst. Prof. | |
| 9. | Dr.S.Swamynathan, Professor, Department of Information Science &Technology, Anna University, Chennai. | University Nominee |
| 10. | Dr.P.Yogesh, Professor, Department of Information Science &Technology, Anna University, Chennai. | Academic Experts |
| 11. | Dr. Shajulin Benedict, Assistant Professor, Department of Computer Science and Engineering, IIT - Kottayam. | Special Invitee |

| | | |
|-----|--|-------------------------------------|
| 12. | Dr. Debasis Samanta, Associate Professor Department of Computer Science & Engineering, IIT - Kharagpur. | |
| 13. | Mr. Antony Arravindh, Senior Project Manager, HCL Technologies, Chennai. | Industrial Experts and Alumni |
| 14. | Dr.K.M.Suceendran, General Manager, Tata Consultancy Services, Chennai. | Industrial Expert |
| 15. | Anandh.A, Third year | Student Members |
| 16. | Anto Rosario.S, Third year | |


CHAIRMAN
BOARD OF STUDIES

ANNEXURE I

Actions taken for Minutes of 15th BoS Meeting

As per BOS Committee suggestion,

- **Social and Cloud Computing** category has been renamed as '**Advanced Computing**'.
- **Block Chain Technology** subject has been moved to '**Advanced Computing**' category.
- **Digital Marketing** subject has been moved to '**Mobile Computing**' category.
- Network and security related subjects has been grouped together under a new category and named as '**Networking and Security**'.
- **Social Networking** subject has been moved to '**Advanced Computing**' category.


CHAIRMAN

BOARD OF STUDIES

ANNEXURE II

The following new courses are approved to be passed under R-2019 in UG degree programme as a Specialization in Data Science Domain.

| Name of the Specialization: Data Science | | | | | | |
|---|--------------------|-------------------------------------|-----------|----------|----------|-----------|
| List of Courses | | | | | | |
| S.No | Course code | Title | L | T | P | C |
| 1. | 19IT10N | Introduction to Data Science | 3 | 0 | 0 | 3 |
| 2. | 19IT11N | Machine learning Techniques | 3 | 1 | 0 | 4 |
| 3. | 19IT12N | Data Engineering Concepts and Tools | 3 | 1 | 0 | 4 |
| 4. | 19IT13N | Web data mining | 3 | 1 | 0 | 4 |
| 5. | 19IT14N | Business Intelligence and analytics | 3 | 0 | 0 | 3 |
| Total Credits | | | 15 | 3 | 0 | 18 |


CHAIRMAN

BOARD OF STUDIES

16th BOARD OF STUDIES MEETING – DEPARTMENT OF IT ON 25.11.2021

iip-xxdf-ird (2021-11-25 at 02:07 GMT-8)

You're signed in as [name] | Sign out | REC network | [subject] | [subject] | Meet - iip-xxdf-ird

meet.google.com/iip-xxdf-ird

REC | You're presenting to everyone | Stop presenting

HOD IT | Anthony Arrows | Succendran KM

Dr. Shajulin Ben... | Debasis Soman... | Succendran KM

Nuthu Kumar R | 3 others

Succendran KM

3:40 PM | iip-xxdf-ird

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2:38 / 1:26:14

Data Science - Syllabus - Microsoft Word

Home Insert Page Layout References Mailings Review View

Clipboard Font Paragraph Styles Find Replace Select Editing

Times New Roman 12 A A

AaBbCcDd AaBbCcDd AaBbCc AaBbCc

1 Normal 1 No Spac... Heading 1 Heading 2

Change Styles

INTRODUCTION TO DATA SCIENCE

L T P C
3 0 0 3

Course Outcomes:

Upon completion of course, students would be able to:

- CO1: explain how data are collected, managed and stored using data science (K2)
- CO2: describe various statistical and probability techniques used in the data science. (K2)
- CO3: explain the key concepts in data visualization approaches in the real-world applications. (K2)
- CO4: analyze various data analytics techniques for the dataset. (K3)
- CO5: apply various application tools used in data science. (K3)

UNIT I INTRODUCTION 9

Benefits and uses of data science and big data – Facets of data – The data science process; Overview-Defining goals-Retrieving data – Cleaning, integrating and transforming data – Exploratory data analysis- Build the model – The big data ecosystem and data science – An introductory working example of Hadoop.

UNIT II STATISTICAL TECHNIQUES 9

Page: 1 of 7 Words: 1,009

4:00 PM 11/25/2021



Dr.Yogesh P

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Department of Civil Engineering

MINUTES of the 13th Meeting of the Board of Studies held on
01st December 2021, 10:00 am

Venue: Through Google Meet (Online)

https://drive.google.com/file/d/1751FGv6xgcMv7_qRvLTbkfcTHPUadyxv/view?usp=sharing

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Department of Civil Engineering

National Engineering College, K.R.Nagar, Kovilpatti– 628503

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13th Board of Studies Meeting in the Department of Civil Engineering

Venue: Through Google Meet (Online)

https://drive.google.com/file/d/1751FGv6xgcMv7_qRvLTbkfcTHPUadyxv/view?usp=sharing

National Engineering College, K.R.Nagar, Kovilpatti– 628503

Date & Time: 01.12.2021 & 10.00 am

Agenda

| | | |
|-----------------|---|--|
| BoS / CIVIL13.1 | : | Welcome address and Opening Remarks by Chairman, Board of studies in the department of Civil Engineering |
| BoS / CIVIL13.2 | : | Confirmation of the Minutes of the 12 th meeting of Board of studies in the department of Civil Engineering held on 23 rd June 2021 and Action taken report of 12 th meeting of Board of studies |
| BoS / CIVIL13.3 | : | Business brought forward by the Chairman, Board of studies 13.3.1 Discussion about the Specialization course, Honor & Minor degree and Examination Reforms 13.3.2 The Syllabus of Specialization course for UG Degree Programme under Regulation 2019. 13.3.3 The Syllabus of Product Development Laboratory (PEC) course for UG Degree Programme under Regulation 2019 13.3.4 Discussion about to transfer the credit from Udemy, Coursera. |
| BoS / CIVIL13.4 | : | Any other items. |
| BoS / CIVIL13.5 | : | Suggestions given by the BoS Members |

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

F. No. 1-1/NEC/Civil Engg.

01.12.2021

Dear Sir/Madam,

Sub: Minutes of the 13th Meeting of the Board of Studies in the Civil Engineering - Reg.

Kindly find attached herewith the Minutes of the 13th Meeting of Board of studies of the Civil Engineering of the National Engineering College, K.R.Nagar, Kovilpatti – 628503 held on 01.12.2021 at 10.00 AM through Google Meet (online). Hard copy of the Minutes is also being sent to you by speed post.

It is requested that comments on the Minutes, if any, may please be sent by email at hodcivil@nec.edu.in or by post, at the earliest. If no comments are received, within ten days, the Minutes shall be taken as confirmed. With Kind Regards,

Yours Sincerely



Dr.C.PuthiyaSekar

Department of Civil Engineering

MINUTES OF THE MEETING

The 13th Meeting of the Board of Studies of the Civil Engineering was held on 01st December 2021 at 10:00 am through online Google Meet conducted by Civil Department, National Engineering College, K.R.Nagar, Kovilpatti- 628503.

The following members were present:

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| 1 | Dr.C.PuthiyaSekar Professor & Head | Chairman |
| 2 | Dr.C.Chella Gifta AP(SG)-Civil | Internal Members |
| 3 | Mr.S.Danielraj AP-Civil | |
| 4 | Mr.S.M. Murali Ram Kumar AP-Civil | |
| 5 | Mr.B.Gowtham AP-Civil | |
| 6 | Dr.K.Chinnaraju, Professor, Department of Civil Engineering, College of Engineering Guindy campus, Anna University, Chennai-600 025. | University Nominee |
| 7 | Dr. S. Arul Jayachandran, Professor, Department of Civil Engineering, Indian Institute Technology Madras, Chennai -600 036. | Academic Expert |
| 8 | Dr.T.Velrajan, Professor, Department of Civil Engineering, Thiagarajar college of Engineering, Madurai- 625 015. | |
| 9 | Mr.J.Colins Johnny, Assistant professor, University College of Engineering , Thoothukudi campus,Thoothukudi Email: colinsjohnny@gmail.com Contact: 99621 99011, 0461-2310044 | |
| 10 | Dr.P.D.Arumairaj, Principal Consultant, AlzumGeoCivil Integrated Services, Thadagam Road, Coimbatore -6414 025. | Industrial Expert |
| 11 | Dr.P.Jayabalan Professor , Department of Civil Engineering, National Institute of Technology Trichy | |

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| BoS / CIVIL 13.1 | <p>: WELCOME ADDRESS AND OPENING REMARKS BY CHAIRMAN, BOARD OF STUDIES IN THE DEPARTMENT OF CIVIL ENGINEERING</p> <p>The Chairman, BoS of the Civil Engineering welcomed and introduced the members of 13th Board of Studies and thanked each one of them for sparing their valuable time to attend the meeting.</p> |
| BoS / CIVIL 13.2 | <p>: TO CONFIRM THE MINUTES OF TWELFTH BOS MEETING HELD ON 23RD JUNE, 2021</p> <p>The minutes of the Twelfth Board of Studies meeting held on 23rd JUNE, 2021 were communicated to the members. The comments received have been incorporated and placed for confirmation. The same was approved by the 15th Academic council meeting.</p> <p style="padding-left: 40px;">➤ Action Taken Report (Enclosed in Annexure D)</p> |
| BoS/CIVIL 13.3.2 | <p>: TO CONFIRM AND APPROVE THE SYLLABUS OF SPECIALIZATION COURSE FOR UG DEGREE PROGRAMME UNDER REGULATION 2019.</p> <p>RESOLVED TO approve the syllabus of specialization course for UG Degree Programme under Regulation 2019.</p> |
| BoS/CIVIL 13.3.3 | <p>TO CONFIRM AND APPROVE THE SYLLABUS OF PRODUCT DEVELOPMENT LABORATORY (PEC) COURSE FOR UG DEGREE PROGRAMME UNDER REGULATION 2019.</p> <p>RESOLVED TO approve the syllabus of product development laboratory course (PEC) for UG Degree Programme under Regulation 2019.</p> |
| BoS / CIVIL 13.4 | <p>: ANY OTHER ITEMS, IF ANY, WITH THE PERMISSION OF THE CHAIRMAN OF THE BOS</p> <p>The BoS members had a discussion with the internal members regarding the Curriculum & the syllabus of Programme Eletive Courses under R-2019</p> |
| BoS / CIVIL 13.5 | <p>: SUGGESTIONS GIVEN BY THE BOS MEMBERS</p> |

The suggestions given by the BoS Members on Specialization, Honor & Minor Degree and Examination Reforms under R 2019.

- 13.5.1 The implementation of new Clauses 6.11.1 ,6.11.2, 6.11.3 and 6.11.4 related to the Specialization, Honor Degree and Minor Degree Courses are presented to the experts of the BoS committee. The recommendations suggested by the AICTE is explained and awaiting for the approval from Anna university is brought to notice of the members. Committee members reviewed the features of this new initiative and suggested to implement it well defined regulations and guidelines.
- 13.5.2 Since Govt of Tamilnadu is very specific about the conduct of end semester examination in Physical mode , BoS members asked to ensure the removal of online examination for Part A , and recommended to conduct examination it in a conventional mode of writing in answer scripts.
- 13.5.3 Suggestions regarding the credit transfer with the completion of online courses like Udemy and Coursera were requested. Members recommended to use these resources as a learning platform and insisted to conduct the evaluation as per the regular pattern followed in other laboratory course examinations .
- 13.5.4 While discussing the specialization course titled "Remote Sensing and Geographical Information system , the expert members requested to offer more exclusive course contents with high relevance to the specialization and not to repeat the contents available in the Remote sensing Techniques and GIS under PEC category.
- 13.5.5 Department of Civil Engineering has become a nodal center of Indian Institute of Remote Sensing , Department of Space , Govt of India and the support offered by them in conducting these specialized course is discussed with the expert members of the Board of Studies .
- 13.5.6 It is suggested to begin all the CO statements of with the verbal words and recommended to reframe the CO statement matching exactly with the content available in each units.
- 13.5.7 For Remote Sensing and GIS for Engineering applications theory course, it is recommended to include more content relevant to the GIS application (Water shed management, Corporation Planning) for a Civil Engineering Students and less in Remote sensing area.

- 13.5.8 In Total Station and GPS Surveying Course it is decided to offer only the basic principles involved in EDM for this outdated technology .
- 13.5.9 The missing CO statements in each course were mentioned by the members and advised to include in the syllabus.
- 13.5.10 Equipment available for the two laboratory courses were enquired and suggested to include Setting out of Buildings using total station and GPS in Serial No 8 of Total Station and GPS laboratory.
- 13.5.11 It is highly suggested to customize the name of Product Development Laboratory (PEC) as Product /Process Development Laboratory for Civil Engineering Curriculum.
- 13.5.12 BoS members have discussed the Name of the Degree awarded to the students after completion of specialization/Minor/ Honor degree courses, CGPA requirement, minimum number of students to attend course, exit options etc. They recommended to strengthen all infrastructure facilities and faculties before the implementation of the new process.
- 13.5.13 Members had the brainstorming discussion about the employability and the market demand of Remote sensing and GIS and finally it is concluded with many opportunities arising in the infrastructures development of the country.
- 13.5.14 Members suggested to increase the credit of courses which are taught for 45 hours from 2 to 3 and recommended to offer mostly 3 credits in this specialized courses.
- 13.5.15 Overall, BoS Expert committee appreciated this new initiative and recommended to include specialized courses in other domain of Civil Engineering.

The members had a brainstorming discussion and interaction among themselves. After discussion, fruitful suggestions were incorporated appropriately in the Specialization course, Curriculum and Syllabi.

Based on the suggestions and recommendations given by the members, BoS resolved to recommend the following to the Academic Council for further approval.

- a) The Syllabus of Specialization course for UG Degree Programme under Regulation 2019.
- b) The Syllabus of Product Development Laboratory (PEC) course for UG Degree Programme under Regulation 2019.
- c) Discussion about to transfer the credit from Udemy, Coursera.

Mr.B.Gowtham AP-Civil thanked all the members for their kind cooperation and the meeting came to an end.

External Members Present Online:

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| 1. | Dr.K.Chinnaraju, Professor, Department of Civil Engineering, College of Engineering Guindy campus, Anna University, Chennai-600 025. | University Nominee |
| 2. | Dr. S. Arul Jayachandran, Professor, Department of Civil Engineering, Indian Institute Technology Madras, Chennai -600 036. | Academic Expert |
| 3. | Dr.T.Velrajan, Professor, Department of Civil Engineering, Thiagarajar college of Engineering, Madurai- 625 015. | Academic Expert |
| 4. | Mr.J.Colins Johnny, Assistant professor, University College of Engineering , Thoothukudi campus, Thoothukudi – 628008 | Academic Expert |
| 5. | Dr.P.Jayabalan, Professor, Department of Civil Engineering, National Institute of Technology, Trichy. | Industrial Expert |
| 6. | Dr.P.D.Arumairaj, Principal Consultant, AlzumGeoCivil Integrated Services, Thadagam Road, Coimbatore -6414 025. | Industrial Expert |

Internal Members Present Online

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| Dr.C.PuthiyaSekar Professor & Head Department of civil Engineering | Chairman |
| Dr.C.Chella Gifta AP(SG)-Civil | Internal Members |
| Mr.S.Danielraj AP-Civil | |
| Mr.B.Gowtham AP-Civil | |
| Mr.S.M.Murali Ram Kumar AP-Civil | |



CHAIRMAN

BOARD OF STUDIES

ANNEXURE I

Action taken for Minutes of 12th BoS Meeting

As per BoS Committee Suggestions,

- 1 The topic named as Oil storage structures along with water tank is included in unit I of Storage Structures
- 2 The following text books were added in theory of plates.
 - a) Rudolph Szilard, "Theories and Applications of Plate Analysis", Wiley India Pvt. Ltd.
 - b) Prof. K. Bhaskar and Prof. T.K. Varadan (Retd.) Plates: Theories and Applications, 2014 John Wiley & Sons, Ltd.
 - c) Bairagi, K.A Text Book of Plate Analysis, Khanna Publisher, New Delhi
- 3 The following text books were added as a reference book in tall buildings
 - a) Wolfgang Schueller, High-rise building structures, Publisher : Wiley (January 1, 1977)
- 4 In Computer Aided Design of Structures, Unit V Software Application is removed and Unit IV content is splitted into two Units to make it as the Unit V.
- 5 The following text books were added as a reference book in industrial structures
 - a) Clarence W Dunham, Planning industrial structures, Publisher : McGraw-Hill Book Co; 1st edition (January 1, 1948).
 - b) National Building codes.
- 6 In the curriculum of R 2019, the course named as Smart Structures and Smart Materials is changed as Smart Materials and Smart Structures and also added a text book such as,
 - a) Sadhu Singh, " Experimental Stress Analysis " Khanna Publisher : (1 January 1981).
- 7 The following text books were added in Basics of Dynamics and Aseismic Design
 - a) S.R. Damodarasamy and S. Kavitha , Basics of Structural Dynamics and Aseismic Design, Publisher : PHI (1 December 2009)
- 8 The following text books were added in Design of Shell Structures
 - a) Binoy. K. Chatterji, Theory and Design of Concrete Shells, Publisher : Spon Press; Revised edition (1 November 1988)

- 9 In the curriculum of R 2019, the course named as Introduction to Timber Structures is changed as Timber Structures.
- 10 The topic named as Testing techniques for Damage Assessment is included in Seismic Evaluation and Retrofitting of structures.
- 11 The topic named as Tunnel Grouting is included in Tunneling Techniques.
- 12 The topic named as Environmental laws and regulations is removed from Soil Contamination and Remediation.
- 13 The topic named as Sedimentation tank is removed and the topic screening topic along with Rapid Sand Filter is added in Environmental Engineering Drawing.
- 14 The topic named as Radiation Analysis is removed from Analytical Instrumentation.

13th BOARD OF STUDIES MEETING – DEPARTMENT OF CIVIL ENGINEERING ON 01.12.2021

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REGISTRATION MEMORANDUM

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