

**NATIONAL ENGINEERING COLLEGE, K.R.NAGAR, KOVILPATTI – 628 503**  
*(An Autonomous Institution - Affiliated to Anna University, Chennai)*  
[www.nec.edu.in](http://www.nec.edu.in)

Minutes of the 7<sup>th</sup> Meeting of the Board of Studies held on  
2<sup>nd</sup> December 2023 at 10.00 AM

Venue: Seminar Hall / S&H  
National Engineering College, K.R.Nagar, Kovilpatti

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**7<sup>th</sup> Board of Studies Meeting in the Department of  
SCIENCE AND HUMANITIES**

Venue: Seminar Hall / S & H  
National Engineering College, K.R.Nagar, Kovilpatti – 628 503

Date & Time: 02.12.2023 & 10.00 AM

**AGENDA**

S & H / BoS 7.1	:	Welcome address by Dr. M.A. Neelakantan, Board Chairman, Prof. and Head, Department of Science and Humanities.
S & H / BoS 7.2	:	Confirmation of the previous BoS meeting minutes (6 <sup>th</sup> ) for the first year UG and PG degree Programme in the Department of Science and Humanities held on 8 <sup>th</sup> July, 2023.
S & H / BoS 7.3	:	Presentation of Regulation 2023 curriculum structure for the second and third semesters.
S & H / BoS 7.4	:	Business brought forward by the Chairman, Board of studies. 7.4.1 Second Semester Curriculum and Syllabi of Basic Science Courses for all B.E/B.Tech. programmes under R-2023 7.4.2 Third Semester Curriculum and Syllabi of Basic Science and Employability Enhancement Courses for all B.E/B.Tech programmes under R-2023
S & H / BoS 7.5	:	Suggestions given by the BoS Members

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**F. No. 1-1/NEC/S & H**

**2<sup>nd</sup> Dec 2023**

Dear Sir/Madam,

***Sub: Minutes of the 7<sup>th</sup> Meeting of the Board of Studies in the Department of Science and Humanities-Reg.***

Kindly find the attachment of the Minutes of the 7<sup>th</sup> Meeting of the Board of Studies, Department of Science and Humanities, National Engineering College, K.R.Nagar, Kovilpatti – 628 503, held on 2<sup>nd</sup> December 2023 at 10.00 AM in the Seminar Hall, Department of Science and Humanities.

It is requested that comments on the Minutes, if any, may please be sent by email at [hodsh@nec.edu.in](mailto:hodsh@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.A.Neelakantan

### MINUTES OF THE MEETING

The 7<sup>th</sup> Meeting of the Board of Studies of the Science and Humanities was held on 02<sup>nd</sup> December 2023 at 10.00 AM, in Seminar Hall, Department of Science and Humanities, National Engineering College.

➤ The following members were present:

<b>Dr.M.A.Neelakantan,</b> Professor & Head	<b>CHAIRMAN</b>
Dr.S. Thalamuthu, Associate Professor/Chemistry	<b>INTERNAL MEMBERS</b>
Dr.S.Chithiraikumar , Assistant Professor (SG) /Chemistry	
Dr. B. Annaraj, Assistant Professor(SG)/Chemistry	
Mr.J.Thamba , Assistant Professor / Chemistry	
Dr.S. Geetha, Associate Professor/Mathematics	
Ms.S.Sasireka , Assistant Professor/Mathematics	
Ms.S.S.BasithaParveen , Assistant Professor/Mathematics	
Ms.P.Mala , Assistant Professor/Mathematics	
Dr.A.PanimayaValanRakkini, Assistant Professor(SG)/Physics	
Dr.A. Nicholson, Assistant Professor(SG)/Physics	
Dr. V.RamaSubbu, Assistant Professor/Physics	
Dr.M.Aravind, Assistant Professor/Physics	
Ms.S. Gopiga Devi, Assistant Professor/English	
Dr.K.Muthu Lakshmi, Assistant Professor/English	
Ms.S.Jeba, Soft skill Trainer	
<b>Dr.N. Sankara Subramanian</b> Professor of Physics Thiyagarajar College of Engineering, Madurai - 625 015	<b>UNIVERSITY NOMINEE</b>
<b>Dr. Raju K. George</b> Professor of Mathematics, Dean (R&D, IPR) Indian Institute of Space Science and Technology, Thiruvananthapuram	<b>ACADEMIC EXPERTS</b>
<b>Dr.M.Dharmendira Kumar</b> Professor of Chemistry Department of Applied Science and Technology A.C.Tech. Anna University, Chennai	
<b>Dr.N.Rajendran</b> Professor and Head Department of Chemistry	

Anna University - Chennai	
<b>Dr.R. Joseph Ponnaiah</b> Professor of English Department of Humanities and social Sciences National Institute of Technology Thiruchirappalli	
<b>Dr. M. Pandiaraj</b> Senior Scientist, Electrodics and Electrocatalysis Division CSIR-CECRI, Karaikudi	SCIENTIST
Mr. M. Sathceshkumar Final Year / EEE	STUDENT MEMBERS Nominated by the HOD
Mr.M.Sundarraaj Final Year / IT	
Mr.M.Alaguvel Final Year / ECE	
Mr.B.Arunkumar Pre final Year/ EEE	
Mr.P.Sathishkumar Pre final Year / ECE	
Mr.M.Madhubalakrishna Pre final Year / CSE	
Ms.R.HariniPriya Pre final Year / CIVIL	
Mr.P.Pone Soma Mugesh Second Year / MECH	

**S&H/ BoS 7.1: WELCOME ADDRESS BY CHAIRMAN, BOARD OF STUDIES, DEPARTMENT OF SCIENCE AND HUMANITIES**

The Chairman BoS of the Science and Humanities welcomed and introduced the Members of 7<sup>th</sup> Board of Studies and thanked them for sparing their valuable time for attending the meeting.

**S& H / BoS 7.2: TO CONFIRM THE MINUTES OF THE SIXTH BOS MEETING HELD ON 8<sup>TH</sup> JULY 2023.**

The meeting minutes of the Sixth Board of Studies meeting on 8<sup>th</sup> July 2023 were communicated to the members. The comments received have been incorporated and placed for confirmation. The 19<sup>th</sup> Academic Council approved the same.

**S & H / BoS 7.3: CURRICULUM STRUCTURE OF R – 2023 PRESENTATION**

The second and third semester curriculum structure of R-2023 was presented by Dr. M.A.Neelakantan, Professor & Head Department of Science and Humanities.

**S&H / BoS 7.4: TO CONFIRM AND APPROVE THE SYLLABI of the Second and third semester Basic Science and Employability Enhancement Courses for all B.E/B.Tech programmes**

**II-Semester Courses**

S.No	Courses	Branch	Credit
1	Professional English	Common to all	2
2	Aptitude Essentials	Common to all	1
3	Career English	Common to all	--

Mathematics			
4	Fourier Series and Calculus	MECH	4
5	Linear Algebra and Analytic Functions	ECE	4
6	Discrete Mathematics	CSE	4
7	Fourier Series and Calculus	EEE	4
8	Discrete Mathematics	IT	4
9	Fourier Series and Calculus	CIVIL	4
10	Probability and Statistics	AI&DS	4
Physics			
11	Materials Science	ECE and EEE	2
12	Semiconductor and Quantum Physics	CSE	3
13	Semiconductor Physics and Digital Electronics	IT	3
14	Semiconductor Physics and Digital Electronics	AI & DS	3
Chemistry			
15	Engineering Materials	MECH	2
16	Environmental science and Engineering	ECE	--

### III-Semester Courses

S.No	Courses	Branch	Credit
1	Aptitude Excellence	MECH, CSE, EEE & CIVIL	1
Mathematics			
4	Statistics and Numerical Methods	MECH	4
5	Probability , Random Processes and Queueing theory	ECE	4
6	Probability and Statistics	CSE	4
7	Transform, Probability and statistics	EEE	4
8	Probability and Statistics	IT	4
9	Statistics and Numerical Methods	CIVIL	4
10	Linear Algebra	AI&DS	4
Chemistry			
11	Environmental Science and Engineering	MECH	--
12	Biology for Engineers	CIVIL	3

**RESOLVED TO APPROVE** the Second and Third Semester Curriculum and Syllabi of Basic Science and Employability Enhancement Courses for all B.E/B.Tech. programmes under R-2023

**S& H /BoS 7.5: SUGGESTIONS GIVEN BY THE BoS MEMBERS**

7.5.1	English	
	Suggestions	Action Taken
	<p><b>23SH22C - Professional English</b></p> <p>Mentioned to remove grammar topics and modify the theory outcomes 1&amp;2 accordingly.</p> <p>Insisted to focus on the acquisition of language through reading instead of grammar.</p> <p>Suggested to add "Atomic Habits" by James Clear to develop reading and interpersonal skills.</p> <p>Suggested to remove "English Grammar, The Basics" by Micheal McCarthy from the textbook, as the grammar topics are asked to be removed.</p> <p>Advised to inculcate reading by introducing topics like Paragraph writing.</p> <p><b>Career English</b></p> <p>Insisted to change the topic "Spotting Errors" to "Error Spotting".</p>	<p>Topics like "Direct and Indirect Speech" and "Active and Passive Voice" are removed, and the theory outcome of the COs are changed.</p> <p>More texts are prescribed to promote reading for the natural acquisition of language.</p> <p>The suggested book is included as a textbook in the syllabus.</p> <p>The textbook is removed. *</p> <p>The suggested topic, "Paragraph Writing", is included in CO6.</p> <p>The topic is changed to "Error Spotting".</p>

7.5.2	Mathematics	
	<p><b>For II Semester</b>  <b>23ME/CE21C-Fourier Series, Complex analysis and Calculus</b>  Suggested to add Identification of frequencies (as an application to Harmonic Analysis) in CO1.</p> <p>Recommended to include Fluid flow problem(as an application to analytic function) in CO3.</p> <p>Suggested to change the title "Fourier series and Calculus".</p> <p><b>23EE21C-Fourier Series &amp; Transform, Complex analysis and Calculus</b>  Suggested to change the title "Fourier series and Calculus".</p> <p><b>23EC21C-Linear Algebra and Calculus</b>  Recommended to include the Rank and Nullity theorem in CO2.</p> <p>Include the Moore-Penrose inverse as a pseudo inverse in CO3.</p> <p><b>23AD23C-Probability and Statistics</b>  Recommended to add the Central Limit Theorem in CO2.</p>	<p>The topic Identification of frequencies is included in CO1.</p> <p>Fluid flow problem is added in CO3.</p> <p>The title is changed to "Fourier series, Complex analysis and Calculus"</p> <p>The title is changed to "Fourier series &amp; Transform, Complex analysis and Calculus."</p> <p>Rank and Nullity theorem is included in CO2.</p> <p>Moore-Penrose inverse is added in CO3.</p> <p>In CO2, the Central Limit Theorem is added.</p>



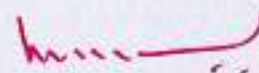
<p>Suggested to include confidence interval for mean in CO4.</p> <p><b>For III Semester</b>  <b>23ME32C- Statistics and Numerical Methods</b></p> <p>Suggested to include confidence interval for mean in CO2.</p> <p>Suggested to add the Gauss Jacobi method and Simpson's Rule as Simpson's 1/3 rule and Simpson's 3/8 rule in CO4.</p> <p>Recommended to remove the Newton's forward and backward interpolation and replace it with Lagrange's interpolation. Suggested to remove the Numerical double integration method in CO4.</p> <p><b>23AD33C-Linear Algebra</b></p> <p>Suggested to include Rank Nullity Theorem in CO3</p> <p>Recommended to add Algebraic and Geometric multiplicity of Eigenvalues in CO4</p> <p>Include Moore- Penrose inverse as pseudo inverse in CO5.</p> <p>Suggested to include the application of Generalised Eigenvectors – Spring and Mass in 2D in CO4</p>	<p>In CO4, the Confidence Interval for mean is included.</p> <p>Confidence Interval for mean is included in CO2.</p> <p>Gauss Jacobi method is included. Simpson's 1/3 rule method and Simpson's 3/8 rule are mentioned in CO4.</p> <p>Lagrange's interpolation replaced Newton's forward and backward interpolation, and Numerical double integration method is removed.</p> <p>Rank and Nullity theorem is included in CO3.</p> <p>Algebraic and Geometric multiplicity of Eigenvalues is added in CO4.</p> <p>Moore-Penrose inverse is added in CO5.</p> <p>In CO4, the Applications of Generalised Eigenvectors – Spring and Mass in 2D are included.</p>
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	<p>The following books are suggested to be included in the syllabi</p> <ol style="list-style-type: none"> <li>1. Michael D .Greenberg, Advanced Engineering Mathematics, 2<sup>nd</sup> edition, Pearson Education,2021.</li> <li>2. Raju.K.George and Abhijith Ajayakumar, A course in Linear Algebra , Springer,2024</li> <li>3. Gilbert Strang , Linear Algebra and its Applications,4<sup>th</sup> Edition , Wellesley-Cambridge Press 2011.</li> <li>4. V.Sundara Pandian , Numerical Linear Algebra , PHI Learning Limited, 2014.</li> <li>5. Erwin Kreyszig, “Advanced Engineering Mathematics”, 10<sup>th</sup> Edition, Wiley India, 2017.</li> </ol> <p><b>23GN04C-Aptitude Excellence</b> Suggested to include percentile in CO4. Suggested to include graphing of data in 2D and 3D in CO5</p>	<p>Suggested books are included in the syllabi.</p> <p>Suggested topics are included in CO4 and CO5.</p>
7.5.3	<b>Physics</b>	
	<p><b>For II Semester</b> <b>23EC/EE23C-Materials Science</b> Suggested to modify the CO3 statement.</p> <p>Recommended to include the topic applications of Nd-Fe magnets under CO3.</p>	<p>The CO3 statement is modified as "apply the magnetic and dielectric properties for relevant electrical and electronics engineering applications</p> <p>The topic of Nd-Fe magnets is included under CO3.</p>

	<p>Suggested to include the textbook and reference book</p> <ol style="list-style-type: none"> <li>1. Dr. M. Arumugam, Materials Science, Anuradha Publications, 2018</li> <li>2. S.O Pillai, Solid State Physics, 10<sup>th</sup> edition, NEW AGE International Publishers, 2022</li> </ol> <p><b>23IT/AD22C-Semiconductor Physics and Digital Electronics</b></p> <p>Suggested to modify the CO statements of CO3 and CO6</p> <p><b>23CS22C- Semiconductor and Quantum Physics</b></p> <p>Suggested to remove the topics Quantum structures, single electron transistor and Bloch sphere in CO5.</p>	<p>Suggested books are included in the syllabi.</p> <p>As per the suggestion, the modified CO statements are as follows:</p> <p>CO3: apply the concepts of Boolean algebra for simplification of logic function</p> <p>CO6: demonstrate the I-V characteristics of pn junction diodes.</p> <p>As per the suggestion, the mentioned topics are removed from CO5.</p>
7.5.4	<b>Chemistry</b>	
	<p><b>23ME22C-Engineering Materials</b></p> <p>It is suggested to include the "commercial and industrial applications of glasses" in CO1.</p> <p>It is suggested to remove the various domain specific applications of engineering ceramics in CO1.</p>	<p>The topic "commercial and industrial applications of glasses" is included in CO1.</p> <p>The general applications of ceramics are included instead of domain-specific applications of engineering ceramics in CO1.</p>

<p>It is suggested to include the specific synthesis method for nanomaterials in CO1.</p> <p>It is suggested to replace the commercial magnetic material applications with commercial applications of magnetic materials in CO2.</p> <p>It is suggested to include perovskites in solar cells instead of organic solar cells in CO3.</p>	<p>Synthesis of nanomaterials by laser ablation method and hydrothermal methods are included.</p> <p>In CO2, the topic "Commercial magnetic material applications" is replaced with "Commercial applications of magnetic materials."</p> <p>The perovskite is included instead of the organic solar cell in CO3.</p>
<p><b>23MC02C-Environmental science &amp; Engineering</b></p> <p>It is suggested to include the Okhla sewage water treatment plant as a case study in the CO2.</p>	<p>The perovskite is included instead of the organic solar cell in CO3.</p> <p>The topic Okhla sewage water treatment plant is included in CO2.</p>
<p><b>23CE32C-Biology for Engineers</b></p> <p>It is suggested to replace the classification based on (a) cellularity- Unicellular or multicellular as cellularity in CO1.</p> <p>It is suggested to include the Antigen-Antibody interaction in CO2.</p> <p>It is suggested to include the Industrial applications of enzymes: biosensors and bio bleaching in CO3.</p> <p>It is suggested to replace the word "decomposes of glucose" with Glycolysis and Krebs cycle in CO4.</p>	<p>The topic Okhla sewage water treatment plant is included in CO2.</p> <p>The topic classification based on (a) cellularity- Unicellular or multicellular is replaced with cellularity in CO1.</p> <p>Antigen-Antibody interaction topic is included in CO2.</p> <p>Industrial applications of enzymes: biosensors and bio bleaching topic is included in CO3.</p> <p>The topic "decomposes of glucose" is replaced with Glycolysis and Krebs cycle in CO4.</p>

<p>It is suggested to include the ELISA and Western blot in CO5.</p> <p>It is suggested to include Dr. Bibekanand and Mallick, Biology for Engineers, McGraw Hill Education, 1<sup>st</sup> edition, 2021 as one of the textbooks.</p>	<p>The topic ELISA and Western blot is included in CO5.</p> <p>The textbook Dr. Bibekanand and Mallick, Biology for Engineers, McGraw Hill Education, 1<sup>st</sup> edition, 2021, is included.</p>
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**7<sup>th</sup> BOARD OF STUDIES MEETING - DEPARTMENT OF SCI. & HUM. ON 02.12.2023**

