Department of Basic Sciences and Humanities

4th BS -BOARD OF STUDIES MEETING

AY 2019-20

DATE: 16th May 2019

VENUE: Dept of BSH, CS Block, NHCE

TIME: 10 am onwards

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NEW HORIZON COLLEGE OF ENGINEERING

DEPARTMENT OF BASIC SCIENCES AND HUMANITIES

4th BS -BOARD OF STUDIES MEETING

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- **Agenda 2:** Discussion on syllabus for

    1. **Engineering Physics**
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    8. **Applied Mathematics-IV/ Discrete Mathematics and Graph Theory**
    9. **Basic Applied Mathematics-I**
    10. **Basic Applied Mathematics-II**

(Including discussion on course outcomes, RBT levels, Programme outcomes, Text books and Reference books).
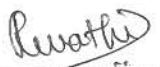
- **Agenda 3:** Syllabus finalization and approval

- **Agenda 4:** Discussion on CIE and SEE

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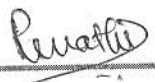
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NEW HORIZON COLLEGE OF ENGINEERING

DEPARTMENT OF BASIC SCIENCES- BS AND HUMANITIES
4th BS -BOARD OF STUDIES MEETING

MEMBERS OF THE BOARD OF STUDIES

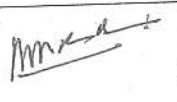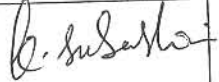| Sl No.	Category	Nomination of the Committee	Name of the Person
1	Head of the Dept.- Physics	Chairperson	Dr. Revathi V, Professor and HOD
	Head of the Dept.- Chemistry		Dr.Anusuya Devi V S, Professor and HOD
	Head of the Dept.- Mathematics		Dr.Srinivasa G, Professor and HOD
2	Faculty Members at different level veering different specializations	1	Dr. Prashanth K S, Asso.Prof, Physics
		2	Dr. Jisha P K , Sr. AP, Physics
		3	Dr. Raghu, Sr. Asst Prof ,Chemistry
		4	Ms. Subashini, Sr. AP, Chemistry
		5	Dr. Vijilius Helena Raj, Professor & COE, Mathematics
		6	Dr. Kavitha J. Associate Professor, Mathematics
3	Subjects Experts from outside the College nominated by Academic Council	1	Dr. M N Ravishankar, Professor, Dept of Physics, Dayanand Sagar College of Engineering, Bangalore
		2	Dr. K Fakruddin, Professor & Head, Dept of Physics, Ghousia College of Engineering, Ramanagaram
		3	Dr. Raviraj A Kusanur Associate Professor & HOD Department of Chemistry, R.V. College of Engineering, Bengaluru
		4	Dr.Dharma Prakash Professor, Department of Chemistry, BMS College of Engineering, Bengaluru
		5	Dr. N. Shivakumar Professor and Head Department of Mathematics, R.V. College of Engineering, Bengaluru-560059

			6	Dr. N. L. Ramesh Professor and Head Department of Mathematics, M. S. Ramaiah Institute of Technology, Bengaluru-54
5	Expert from outside college, nominated by Vice-Chancellor	Member		Dr. Pranesha, Professor, Department of Physics, BMS College of Engineering, Bengaluru
6	Representative from Industry/corporate sector/ allied area relating to placement nominated by Academic Council	Member		Dr. Sandeep Kumar, Professor, Raman Research Institute, Bangalore.
7	Meritorious alumnus nominated by Principal	Member		Mr.Nithin P V, MEE 2012-16 Batch Graduate Student, University of North Carolina, Charlotte, USA
8	Co-opted member			Dr. Ramachandra Naik (Physics) Mr.Parashuram .L (Chemistry) Mr. Ch.Subrahmanyam(Mathematics)
9	Special Invitee			Dr. Manjunatha , Principal
10.	Special Invitee			Dr. C S R Prashanth , Dean Academics

MEMBERS PRESENT

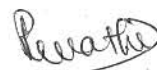| S.NO	NAME	DESIGNATION AND AFFILIATION	PHONE NO.	SIGNATURE
1.	Dr. Revati V	Professor and HOD, Physics, NHCE	9901415367	Revathi
2.	Dr. Prashanth K S, Asso.Prof, Physics	Asso.Prof, Physics, NHCE	9986248364	[signature]
3.	Dr. Jisha P K , Sr. AP, Physics	Sr. AP, Physics, NHCE	7829730339	APK sha
4.	Dr. M N Ravishankar,	Professor, Dept of Physics, Dayanand Sagar College of Engineering, Bangalore	9480489556	[signature]
5.	Dr. K Fakruddin,	Professor & Head, Dept of Physics, Ghousia College of Engineering, Ramanagaram	9886419379	[signature]
6.	Dr. Anusuya Devi V S	Professor and HOD Chemistry,NHCE	9916661012	[signature]
7.	Dr. M S Raghu	Sr. AP, Chemistry, NHCE	9844626569	[signature]
8.	Ms. Subhashini K	Sr. AP, Chemistry, NHCE	9611336446	R. Subash
9.	Dr. Raviraj A Kusanur	**Associate Professor & HOD** Chemistry, RVCE	9448823443	[signature]
10.	Dr.Dharma prakash	**Professor**, Chemistry, BMSCE	—	Absent
11.	Dr.Srinivasa G,	Professor and HOD-Mathematics, NHCE	9449817583	[signature]
12.	Dr. Vijilius Helena Raj,	Professor & COE, Mathematics, NHCE		Absent
13.	Dr. Kavitha J. Associate Professor, Mathematics	Associate Professor, Mathematics,NHCE	9449250181	J. Kavith
14.	Dr. N. Shivakumar	Professor and Head Department of Mathematics, R.V. College of Engineering,	9845276890	[signature]

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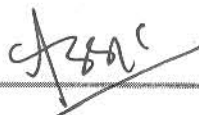
15.	Dr. N. L. Ramesh	Professor and Head Department of Mathematics, M. S. Ramaiah Institute of Technology.	—	Absent
16.	Dr. Pranesha T.S	**Professor,** Dept of Physics, BMSCE	9886278593	*Pranesha*
17.	Dr. Sandeep Kumar	Professor, Raman Research Institute	Sandeep Kumar 9449309554	*Sandeep Kumar*
18.	Mr.Nithin P V,	Quality Manager, Microtech CNC.	9342214220	*Nithin PV*
19.	Dr. Ramachandra Naik	Assistant Professor, Physics, NHCE	7204908041	*(sign)*
20.	Mr. Parasuram L	Assistant Professor, Chemistry, NHCE	9019882623	*(sign)*
21.	Ch.Subrahmanyam	Sr asst. Prof, Mathematics, NHCE	8050429329	*(sign)*

WELCOME ADDRESS BY THE CHAIRMAN OF THE BOS AND INTRODUCTION OF MEMBERS

Minutes:

Dr. Anusuya Devi VS, HOD, Dept Chemistry, Chairman BOS Chemistry warmly welcomed all the internal and external members of BS Board. While expressing the purpose and significance of the meeting in her address, she introduced Dr. Manjunatha, Principal New Horizon College of Engineering, Dr. Prashanth , Dean Academics to all members, in absentia. Then she individually introduced invited members both from academic and industry, followed by HODs, - Dr, Srinivasa G ,HOD- Mathematics & Chairman BOS Mathematics), and Dr. Revati V, HOD- Physics & Chairman BOS Physics along with the other internal BOS members of Mathematics, Physics and Chemistry.

She also gave a brief introduction on leadership at NHEI and NHCE; and presented the dynamics of BSH through its Vision, Mission and Goals: Through slides presentation, she also shared the challenges at Dept of BSH, NHCE in terms of heterogeneity.

TITLE OF AGENDA: Discussion and Scrutinization of I Year BE Physics, Chemistry and Mathematics syllabus (common to all branches)

Minutes:

Welcome and Introduction session of members was followed by introducing the Scheme of I & II Semesters Applied Mathematics, Engineering Physics, Engineering Physics lab, Engineering Chemistry and Engineering chemistry lab.

Thereafter, Dr. Anusuya opened the meet individually for discussing the syllabus for the academic year 2019-20 under Applied Mathematics (for BE), Engineering Physics, Engineering Physics Lab, Engg Chemistry, Engg Chemistry Lab subjects.

Minutes of Meeting Physics

Agenda 3: Syllabus finalization and approval.

The following suggestions were given by BOS – Physics members in the proposed 2019-20, Engineering Physics and Engineering Physics Lab syllabus.

Engineering Physics

- To include problems in all the modules.

Module 1

1. To remove time dependent equation & broadening of spectral lines
2. To include non existence of electrons in the nucleus.
3. Change the module heading as Quantum mechanics.

Module 2

1. Module title to be changed as Dielectric and magnetic properties
2. To remove ferroelectrics.
3. Frequency dependence of dielectric constant instead of polarisibility.
4. Introduction can be put as review and to begin from ferromagnetic properties.
5. To add tangent loss derivation.

Module 3

1. To remove industrial applications and add construction and reconstruction of hologram.
2. To remove sensor and add application as waveguide(endoscopy)
3. To introduce concept of LiFi

Module 4

1. To group the basic concepts as review of CFET
2. To add four probe method in lab

Module 5

1. To remove AFM from characterization techniques part

Engineering Physics Lab

- All the proposed experiments of Engineering Physics Lab are approved.

Agenda 4: Discussion on CIE and SEE

The existing assessment pattern 2018-19 of CIE is slightly modified (50 Marks =IA-25+ two quizzes -5+5, Two assignments-7.5 + 7.5) and SEE (50 Marks) was accepted and approved by the board.

Minutes of Meeting - Chemistry

- **Agenda 3: Syllabus finalization and approval of Engineering Chemistry**

I Module:

- Li ion battery type should be specific and it is decided as $LiCoO_2$ battery.

- The remaining part of the syllabus was accepted and approved by all the board members.

II-Module:

- Inclusive of CVD method in metal finishing was accepted by the board.

- It was suggested to remove Atomic absorption spectrophotometry, due to the high level of explanation to first year students, in place of that, conductometry was suggested to include.

- The remaining part of the syllabus was accepted and approved by all the board members.

III -Module:

- Introduction of energy crises and biomass conversion methods was highly appreciated by the board members.

- Inclusive of dye sensitized solar cells was appreciated by board members.

- The remaining part of the syllabus was accepted and approved by all the board members.

IV- Module:

- The syllabus framed was accepted and approved by all the board members.

V- Module

- Specific polymer to be mentioned in place of PEEK.

- Conducting polymers should be taught by taking poly acetylene which was the basic conducting polymer in place of PEDOT.

- Surface Plasmon resonance may be included in size dependent properties of nano materials.

- The remaining part of the syllabus was accepted and approved by all the board members.

Syllabus finalization and approval of Engineering Chemistry Lab

- All the experiments of Engineering Chemistry Lab are approved
- Introduction of Innovative project designed by student was appreciated.

COS and POS mapping

- Learning objectives must be included as per the NBA norms.

- PO6, 7 and 8 attainments may be reduced from 3 to 1

- **Agenda 4:** Discussion on CIE and SEE

The existing assessment pattern 2018-19 of CIE is slightly modified (50 Marks =IA-25+ two quizzes -5+5, Two assignments-7.5 + 7.5) and SEE (50 Marks) was accepted and approved by the board.

Minutes of Meeting Mathematics

Introduction of

1. Applied Mathematics-I (Common to all branches) in first semester

2. Applied Mathematics-II(Common to all branches) in second semester

3. Applied Mathematics-III (Branch wise) in third semester

4. Applied Mathematics-IV/ Discrete Mathematics and Graph Theory(Branch wise) in fourth semester

5. Basic Applied Mathematics-I(Common to all branches) in third semester

6. Basic Applied Mathematics-II(Common to all branches) in fourth semester

1. Applied Mathematics-I (Common to all branches) in first semester:

Module 3: Applications of double and triple integrals to find area enclosed by plane curves and volume of sphere and tetrahedron is specified very clearly.

Module 5: Solution of system of homogeneous and non-homogeneous linear equations is specified and deleted quadratic forms, reduction to canonical form-Problems.

2. Applied Mathematics-II(Common to all branches) in second semester:

Module 1: Solution of initial and boundary value problems, Inverse differential operator techniques for the functions-e^{ax}, $Sin\ (ax + b)$, $Cos\ (ax + b)$ and $ax^2 + bx + c$.
Solution of Cauchy's and Legendre's homogeneous linear equations and variation of parameters method.
Applications: Electrical Circuits-Simple problems.

Deleted simple harmonic motion and simple pendulum

Module 2: Solution of Lagrange's partial differential equation, Solution by separation of variables method.

Deleted solution of non-homogeneous partial differential equation by direct integration and homogeneous partial differential equation involving derivative with respect to one independent variable.

Module 3: Curl-physical significance and problems, Vector identities: div(grad Ø), div(Curl A), Curl(grad Ø)

Deleted derivative of vector valued function, vector identity: curl (curl A) and in applications stoke's problems.

Module 4: Deleted series solution of Bessel's differential equation, Legendre's differential equation, Rodrigue's formual (without proof) and orthogonality problems.

Module 5: Periodic functions (without proof)

Deleted unit impulse function problems and in applications LCR circuit problems.

3. <u>**Applied Mathematics-III (Branch wise) in third semester:**</u>

<u>**For AUE/CVE/MEE**</u>

Module 1: Lagrange's formulae for unequal intervals (without proofs)-Problems

Deteted solution of system of equations using Gauss Seidel and relaxation method

Module 2: Applications: Application of numerical integration to velocity of a particle and volume of solids.

Deleted numerical solution of Boundary value problems and poisson's equation

Module 3: Correlation and Regression lines – Problems, Variation of a function and a functional, variational problems, Euler's equation and Isoperimetric problems.

Applications: Minimal surface of revolution and Hanging cable.

Deleted Discrete and Fast Fourier Transforms

Module 5: Inverse Fourier sine and cosine transforms and Derivatives of first order and second order using Newton's forward differences and Newton's backward Differences are specified clearly.

For CSE/ISE

Module 1: Lagrange's formulae for unequal intervals (without proofs)-Problems

Deteted solution of system of equations using Gauss Seidel and relaxation method

Module 2(retained from Engineering Mathematics-III & IV): In Applications: Application of numerical integration to velocity of a particle and volume of solids

Deleted numerical solution of Boundary value problems and poisson's equation

Module 3: Correlation and Regression lines – Problems, Variation of a function and a functional, variational problems, Euler's equation and Isoperimetric problems.

Applications: Minimal surface of revolution and Hanging cable.

Module 4 (retained from Engineering Mathematics- IV): deleted cumulative density function.

Module 5 (retained from Engineering Mathematics- IV): F-distribution included

Deleted standard error and stochastic process concepts.

For ECE/EEE

Module 1: Lagrange's formulae for unequal intervals (without proofs)-Problems

Deteted solution of system of equations using Gauss Seidel and relaxation method

Module 2: Applications: Application of numerical integration to velocity of a particle and volume of solids.

Deleted numerical solution of Boundary value problems and poisson's equation

Module 3: Correlation and Regression lines – Problems, Variation of a function and a functional, variational problems, Euler's equation and Isoperimetric problems.

Applications: Minimal surface of revolution and Hanging cable.

Deleted Discrete and Fast Fourier Transforms

Module 5: Inverse Fourier sine and cosine transforms, inverse Z- transforms by partial fractions method is specified clearly.

4. **Applied Mathematics-IV (Branch wise) in fourth semester:**

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For AUE/CVE/MEE:

Module 1: Numerical Solutions of second order ordinary differential equations by Runge-Kutta method of fourth-order-Problems

Deleted Picard's and Taylor's series method, Adams-Bashforth predictor and corrector methods, Numerical Solutions of simultaneous first order differential equations by Picad's method and Runge-Kutta method of fourth-order.

Module 2: Problems using Milne-Thompson's method.
Applications: Flow problems-Velocity potential, Stream functions and complex potential functions.

Deleted $w = z^2$, $w = e^z$ and $w = z + (1/z)$ and included in module 3.

Module 3: $w = z^2$, $w = e^z$ and $w = z + (1/z)$ is included
Deleted Cauchy's integral formula, power series and Laurent's series

Module 4 (retained from Engineering Mathematics- IV): deleted cumulative density function and Joint Probability distributions.

Module 5 (retained from Engineering Mathematics- IV): F-distribution and Mathematical Logic: Connectives and Truth tables, Logical Equivalence, The laws of logic and logical implication included
Deleted standard error and stochastic process concepts.

For ECE/EEE:

Module 1: Numerical Solutions of second order ordinary differential equations by Runge-Kutta method of fourth-order-Problems

Deleted Picard's and Taylor's series method, Adams-Bashforth predictor and corrector methods, Numerical Solutions of simultaneous first order differential equations by Picad's method and Runge-Kutta method of fourth-order.

Module 2: Problems using Milne-Thompson's method.

Applications: Flow problems-Velocity potential, Stream functions and complex potential functions

Deleted $w = z^2$, $w = e^Z$ and $w = z + (1/z)$ and included in module 3.

Module 3: $w = z^2$, $w = e^Z$ and $w = z + (1/z)$ is included

Deleted Cauchy's integral formula, power series and Laurent's series

Module 4 (retained from Engineering Mathematics- IV): deleted cumulative density function.

Module 5 (retained from Engineering Mathematics- IV): F-distribution included

Deleted standard error and stochastic process concepts.

<u>For CSE/ISE:</u> Introduced **Discrete mathematics and Graph theory** in place of Applied Mathematics-IV.

5. **Basic Applied Mathematics-I (Common to all branches) in third semester:**

   Module 1: Deleted Taylor's theorem for function of one variable.

   Module 2: Jacobians of order two is specified clearly.

   Module 3: Deleted $\sin^m x \cos^n x$ and Bernoulli's problems

   Module 5: Deleted quadratic forms, reduction to canonical form by orthogonal transformation-Problems.

6. **Basic Applied Mathematics-II(Common to all branches) in fourth semester:**

   Module 1: Deleted vector triple product

   Module 2: Solenoidal and irrotational vector fields-problems are included.

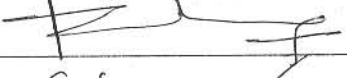   Deleted vector identities
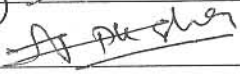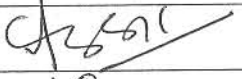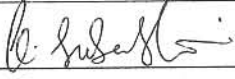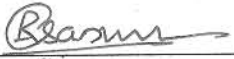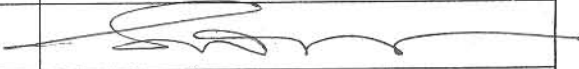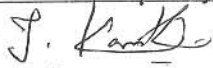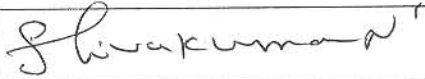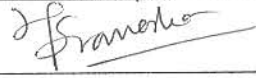
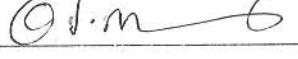   **Module 3:** Solution of initial and boundary value problems, Inverse differential operator techniques for the functions-e^{ax}, $Sin (ax + b)$ and Cos (ax + b) is specified clearly.

   Module 4: Periodic functions (without proof), Heaviside function (without proof) –Problems is included very clearly.

   Module 5: Deleted logarithmic and inverse trigonometric functions-problems

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Name and signature of all attendees

S.NO	NAME	SIGNATURE
1.	Dr. Revati V	*Revathi*
2.	Dr. Prashanth K S, Asso.Prof, Physics	
3.	Dr. Jisha P K , Sr. AP, Physics	
4.	Dr. M N Ravishankar,	
5.	Dr. K Fakruddin,	
6.	Dr. Anusuya Devi V S	
7.	Dr. M S Raghu	
8.	Ms. Subhashini K	
9.	Dr. Raviraj A Kusanur	
10.	Dr.Dharma prakash	
11.	Dr.Srinivasa G,	
12.	Dr. Vijilius Helena Raj,	Absent due to personal work
13.	Dr. Kavitha J. Associate Professor, Mathematics	*J. Kavitha*
14.	Dr. N. Shivakumar	*Shivakumar N*
15.	Dr. N. L. Ramesh	Absent due to NBA visit in MSRIT
16.	Dr. Pranesha T S	*Pranesha*
17.	Dr. Sandeep Kumar	*Sandeep Kumar*
18.	Mr.Nithin P V,	*Nithin PV*
19.	Dr. Ramachandra Naik	
20.	Mr. Parasuram L	
21.	Ch.Subrahmanyam	*Ch.S.M*

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VOTE OF THANKS BY THE CHAIRMAN-BOS

Chairman BOS-Physics & HOD-Physics, Dr. Revathi. V took the lead in acknowledging the presence of each of the members. She thanked all external members from academic and Research institutes along with HODs of each subject and faculty members under BOS –BS.

She applauded their valuable inputs in deliberation in the meeting and appreciated their contribution of worthy suggestions.

The presence of alumini member Mr.Nithin P V, (2012-16 Batch Mechanical Engg. Student) was greatly acknowledged for his insightful inputs by the Chairman BOS.