



# NEW HORIZON COLLEGE OF ENGINEERING

Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC  
Accredited by NAAC with 'A' Grade, Accredited by NBA

## Department of Basic Sciences and Humanities

### BS -BOARD OF STUDIES MEETING

**DATE:** 24<sup>th</sup> July 2021

**VENUE:** Dept of BSH, CS Block, NHCE

**TIME:** 10 am onwards

*Ravath*  
24/7/21  
Chairman - BOS - Physics  
New Horizon College of Engineering (Autonomous)  
Bangalore - 560103

*J. S. R.*  
Chairman - BOS - Chemistry  
New Horizon College of Engineering (Autonomous)  
Bangalore - 560103

*[Signature]* 24/7/21  
Chairman - BOS - Mathematics  
New Horizon College of Engineering (Autonomous)  
Bangalore - 560103

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**NEW HORIZON COLLEGE OF ENGINEERING**  
**DEPARTMENT OF BASIC SCIENCES AND HUMANITIES**  
**BS -BOARD OF STUDIES MEETING**

- **Agenda 1:** Discussion on syllabus for
  1. **Engineering Physics**
  2. **Engineering Physics Lab**
  3. **Engineering Chemistry**
  4. **Engineering Chemistry Lab**
  5. **Applied Mathematics – I**
  6. **Applied Mathematics – II**
  7. **Applied Mathematics – III (AUT, CIV & MEE branches)**
  8. **Applied Mathematics – III (CSE & ISE branches)**
  9. **Applied Mathematics – III (ECE & EEE branches)**
  10. **Applied Mathematics – III (AIM & CEE branches)**
  11. **Applied Mathematics – IV (AUT, CIV & MEE branches)**
  12. **Discrete Mathematics and Graph Theory (CEE, CSE & ISE branches)**
  13. **Applied Mathematics – IV (ECE & EEE branches)**
  14. **Mathematical Statistics (AIM branch)**
  15. **Basic Applied Mathematics – I & II**  
(For third semester and fourth semester Lateral Entry students-Common to all branches)

(Including discussion on Course Outcomes, RBT levels, Programme Outcomes, Text Books and Reference Books).

- **Agenda 2:** Syllabus finalization and approval
- **Agenda 3:** Discussion on CIE and SEE

**DATE:** 24<sup>th</sup> July 2021  
**VENUE:** Dept. of BSH  
**TIME:** 10 am Onwards  
**MODE:** Online Platform

**NEW HORIZON COLLEGE OF ENGINEERING**

**DEPARTMENT OF BASIC SCIENCES- BS AND HUMANITIES  
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. Hitesh Kumar. 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, Bengaluru
		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 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. S. Manjunath, Professor and Head, Department of Mathematics, BNMIT, Bengaluru-70.
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) Dr.Parashuram .L (Chemistry) Dr. A. B. Madhu Mohana Raju (Mathematics)
9	Special Invitee		Dr. Manjunatha , Principal
10.	Special Invitee		Dean Academics

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

### **Minutes:**

Dr. Revathi V, HOD, Dept of Physics, Chairman BOS – BS(Physics), Dr. Anusuya Devi HOD, Dept of Chemistry, Chairman BOS- BS (Chemistry) and Dr. Srinivasa G, HOD, Dept. of Mathematics, Chairman BOS- BS (Mathematics) warmly welcomed all the internal and external members of BS Board. While expressing the purpose and significance of the meeting in their address, they introduced Dr. Manjunatha, Principal New Horizon College of Engineering, Dr. Amarjeet Singh, Dean Academics to all members. The meeting was conducted through online platform. The invited members both from academic and industry, alumini were also introduced to the Board members.

We 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, we also shared the challenges at Dept of BSH, NHCE in terms of heterogeneity.

**NEW HORIZON COLLEGE OF ENGINEERING**  
**DEPARTMENT OF BSH**  
**BS - BOARD OF STUDIES MEETING**

**TITLE OF AGENDA:**

Discussion and Scrutinization of I Year BE Physics, Chemistry theory, Lab syllabus  
(common to all branches) and Mathematics syllabus (I & II year syllabus)

**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, the meet was opened individually for discussing the syllabus for the academic year 2021-22 under Applied Mathematics (for BE), Engineering Physics, Engineering Physics Lab, Engineering Chemistry, Engineering Chemistry Lab courses.

## **Minutes of Meeting Physics**

### **Agenda: Syllabus finalization and approval.**

Mapping of course outcomes with program outcomes were accepted by the members.

The following suggestions were given by BOS – Physics members in the proposed 2021-22, Engineering Physics and Engineering Physics Lab syllabus.

### **Engineering Physics**

- Alternative assessment introduced in CIE which is in addition to Assignment and Quiz

#### **Module 1**

1. To remove dual nature of light and matter, de Broglie hypothesis and start the topic with Introduction to Quantum Mechanics

#### **Module 2**

1. To add specific applications of ferroelectrics – Ferroelectric RAM
2. To remove classification of magnetic materials (dia, para and ferro)

#### **Module 3**

1. No change, proposed syllabus retained

#### **Module 4**

1. To remove band theory and classification of solids based on band theory

#### **Module 5**

1. To remove TEM, FTIR
2. To change module name as Instrumentation Physics
3. Problems based on XRD

### **Engineering Physics Lab**

- All the proposed experiments of Engineering Physics Lab are approved.
- It was suggested to make 12 experiments compulsory

### **Agenda: Discussion on CIE and SEE**

The existing assessment pattern of CIE is slightly modified (50 Marks =IA-25+ one quiz -10, one assignment -7.5, Alternative Assessment - 7.5) and SEE (50 Marks) was accepted and approved by the board.



## Minutes of Meeting Chemistry

Dr. Anusuya Devi, Professor and HOD, Chairman of BOS- Chemistry started the meet with the opening remarks and presented the recent achievements of the New Horizon College of Engineering and highlighted the research activities of the department.

Dr. Parashuram L presented the Engineering Chemistry syllabus.

The Engineering Chemistry and Engineering Chemistry Lab course codes were modified as **21CHE12/22** and **21CHL17/27** respectively for the academic year 2021-22.

Dr. Dharma Prakash, BOS-External member has suggested including the term Chemistry instead of engineering materials in the course outcomes.

Mapping of course outcomes with program outcomes were accepted by the members.

**Module 1:** The contents of the module were accepted and no changes were suggested by the members of BOS. Dr. Amarjeet Singh, Dean Academics, NHCE has suggested to check the possibility of mapping all six course outcomes with the module.

**Module 2:** Dr. Raviraj Kusanur, BOS-External member, RVCE has recommended shifting of CVD process from the third module to the fifth module as a synthesis technique of nanomaterials since the principle is same.

**Module 3:** No changes with respect to contents were suggested and the contents of the module were accepted by the BOS members. Dr. Sandeep Kumar, Industry Expert and member of BOS has recommended to include experiments related to bomb calorimeter in the laboratory-to give practical exposure to the students.

**Module 4:** No changes with respect to contents were suggested and the contents of the module were accepted by the BOS members. Dr. Dharma Prakash has suggested to check the possibility of completing module within 9 hours.

**Module 5:** No changes with respect to contents were suggested and the contents of the module were accepted by the BOS members.

All the external members of BOS have appreciated the design and suitability of the syllabus with respect to energy, environment and industrial aspects. Dr. Dharma Prakash and Dr. Amarjeet

Singh have expressed to rethink about the syllabus coverage within the stipulated time of 45 hours, so that it will not tax upon faculty as well as students. For which, Dr. Anusuya has expressed that the same quantum of the syllabus was taught in the last two academic years, faculty members were able to complete the syllabus well within the time and the results were more than 94%. in Engineering Chemistry.

Dr. Anusuya presented the percentage of each RBT level covered in the teaching and evaluation of Engineering Chemistry. She discussed about CIE and SEE scheme. IN CIE one assignment has been removed and alternate assessment tool was introduced for 10 marks in order to encourage students to think innovatively and participate in external co curricular activities.

Dr. Dharma Prakash appreciated the lab COs and all the members mentioned that COs are intact and precise.

The list of experiments of engineering chemistry lab proposed was accepted by all the BOS members.

The introduction of “Innovative experiment designed by student” was greatly appreciated by all the external members.

Dr. Sandeep Kumar and Dr. Dharma Prakash have recommended constituting a panel to evaluate the innovative experiment designed by student and suitably reward them. For which, Dr. Anusuya has expressed that students will be awarded 12.5 marks in the regular laboratory assessment for their innovative ideas and experimentation.

Dr. Raviraj Kusanur expressed about including course objectives of the syllabus.

All the suggestions and recommendations of the members of the BOS - BS Chemistry were incorporated in the syllabus of 21CHE12/22 and 21CHL17/27.

Dr. Anusuya, Chairman - BOS BS Chemistry proposed vote of thanks and meeting was concluded at 3pm.

## Minutes of Meeting Mathematics

### Agenda: Syllabus finalization and approval.

The following suggestions were given by BOS – Mathematics members in the proposed 2021-22, Applied Mathematics-I (Common to all branches) in first semester, Applied Mathematics-II (Common to all branches) in second semester, Applied Mathematics-III (AUT, CIV & MEE branches), Applied Mathematics-III (CSE & ISE branches), Applied Mathematics-III (ECE & EEE branches), Applied Mathematics-III (AIM & CEE branches) in third semester, Applied Mathematics-IV (AUT, CIV & MEE branches), Discrete Mathematics and Graph Theory (CEE, CSE & ISE branches), Applied Mathematics-IV (ECE & EEE branches), Mathematical Statistics (AIM branch) in fourth semester, Basic Applied Mathematics-I & II (for third semester and fourth semester Lateral Entry Students-Common to all branches) syllabus.

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

**Module 1 to Module 4:** No change, proposed syllabus retained.

**Module 5:** Applications of matrices to Chemical equation and Network flow included.

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

**Module 1:**  $e^{ax} f(x)$ ,  $x f(x)$ ,  $a x^n$  types included.

**Module 2 to Module 5:** No change, proposed syllabus retained.

#### 3. Applied Mathematics-III (AUT, CIV & MEE branches) in third semester:

**Module 1, Module 3, Module 4:** No change, proposed syllabus retained.

**Module 2:** Numerical Differentiation topics removed from Module 5 and included in the beginning of the Module 2. Also, Numerical solution of one-dimensional wave equation, heat equation and two-dimensional Laplace's equation added in Applications part.

**Module 5:** Discrete Fourier Transform and Fast Fourier Transform concepts added in place of Numerical Differentiation.

#### 4. Applied Mathematics-III (CSE & ISE branches) in third semester:

**Module 1, Module 2, Module 4:** No change, proposed syllabus retained.

**Module 3:** Brachistochrone problem is included in Applications part.

**Module 5:** Central Limit Theorem (without proof) added.

**5. Applied Mathematics-III (ECE &EEE branches) in third semester:**

**Module 1, Module 2, Module 4 and Module 5:** No change, proposed syllabus retained.

**Module 3:** Brachistochrone problem included in Applications part.

**6. Applied Mathematics-III (AIM & CEE branches) in third semester:**

**Module 1 to Module 5:** Drafted and proposed syllabus accepted with few changes.

**Module 1:**

**Numerical Methods-1:**

Numerical solution of algebraic and transcendental equations: Regula-falsi method and Newton-Raphson Method-Problems. Interpolation: Newton's forward and backward formulae for equal intervals, Newton divided difference and Lagrange's formulae for unequal intervals (without proofs)-Problems.

**Module 2:**

**Numerical Methods 2:**

Numerical solution of ordinary differential equations of first order and of first degree: Modified Euler's method and Runge-Kutta method of fourth-order-Problems. Milne's predictor and corrector methods-Problems.

Numerical integration: Simpson's 1/3<sup>rd</sup> rule, Simpson's 3/8<sup>th</sup> rule, Weddle's rule (without proofs)-Problems.

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

**Module 3:**

**Fourier series:**

Periodic function, Dirichlet's conditions, Fourier series of periodic functions of period  $2\pi$  and arbitrary period  $2l$ , half range series. Fourier series and half Range Fourier series of periodic square wave, half wave rectifier, full wave rectifier, Saw-tooth wave with graphical representation, practical harmonic analysis.

**Module 4:**

**Fourier Transforms:**

Infinite Fourier transforms, Fourier Sine and Cosine transforms, Inverse Fourier transform.

**Z - Transform:**

Definition, Z-transforms of some standard functions, properties, damping rule, shifting rule(without proof), initial and final value theorems, inverse Z- transforms.

**Applications:** Solving difference equations using Z-transform.

**Module 5:**

**Discrete Fourier Transform and Fast Fourier Transform:**

Definition of N-Point DFT, problems for 4-points and inverse DFT for four points only. FFT algorithm to compute the Fourier transforms 4-point only.

**Statistical Methods:**

Fitting of the curves of the form  $y = a + b x$ ,  $y = a + b x + c x^2$ ,  $y = a e^{bx}$ ,  $y = a x^b$ , and  $y = a b^x$  by the method of least square, Correlation and Regression, Regression coefficients, line of regression –Problems.

**7. Applied Mathematics-IV (AUT, CIV & MEE branches):**

**Module 1, Module 2, Module 4:** No change, proposed syllabus retained.

**Module 3:** Generalized Cauchy's integral formula added.

**Module 5:** Test of hypothesis of large samples for means and proportions, Central limit theorem (without proof) and Confidence limits for means are included.

**8. Discrete Mathematics and Graph Theory (CEE, CSE & ISE branches):**

**Module 1:** NAND and NOR connectives are included.

**Module 2, Module 3:** No change, proposed syllabus retained.

**Module 4:** Distance and Centers in tree are removed.

**Module 5:** Dual of planar graphs added. Combinational and geometric graphs are removed.

**9. Applied Mathematics-IV (ECE & EEE branches):**

**Module 1, Module 2, Module 4:** No change, proposed syllabus retained.

**Module 3:** Generalized Cauchy's integral formula added.

**Module 5:** Central limit theorem (without proof) concept included.

**10. Mathematical Statistics (AIM branch):**

**Module 1 to Module 5:** Drafted and proposed syllabus accepted with few changes.

**Module1:****Measures of Dispersion, Skewness and Kurtosis:**

Dispersion, Measures of dispersion, Percentile, Range, Quartile deviation, Mean deviation, Coefficient of dispersion, Coefficient of variation, Moments, Skewness, Kurtosis.

**Module 2:**

**Combinatorics and Probability:**

Random variables, Permutations and Combinations, Probability, Axioms of probability, Events, Addition rule, Conditional probability, Multiplication rule, Baye's theorem.

**Module 3:**

**Probability Distributions:**

Random variables (discrete and continuous), probability density functions. Discrete Probability distributions: Binomial and Poisson Distributions-Problems. Continuous Probability distributions: Exponential and Normal Distributions-Problems.

**Module 4:**

**Joint Probability Distributions and Stochastic process:**

Concept of joint probability-Joint probability distribution, Discrete and Independent random variables. Expectation, Covariance, Correlation coefficient.

Probability vectors, Stochastic matrices, Fixed points, Regular stochastic matrices. Markov chains, Higher transition probabilities. Stationary distribution of regular Markov chains and absorbing states.

**Module 5:**

**Sampling Theory:**

Sampling, Sampling distributions, test of hypothesis of large samples for means and proportions, Central limit theorem (without proof), confidence limits for means, Student's t-distribution, F-distribution and Chi-square distribution for test of goodness of fit for small samples.

**11. Basic Applied Mathematics-I (for third semester Lateral Entry Students-Common to all branches):**

**Module 1, Module 2, Module 4, and Module 5:** No change, proposed syllabus retained.

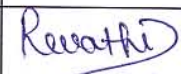

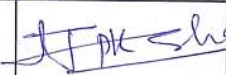
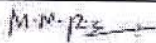
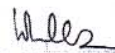

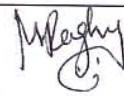

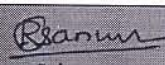





**Module 3:** Problems on Reduction formula  $\tan^n x$  included.


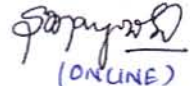


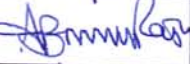


**12. Basic Applied Mathematics-II (for fourth semester Lateral Entry Students-Common to all branches):**

**Module 1, Module 2, Module 4, and Module 5:** No change, proposed syllabus retained.

**Module 3:**  $e^{ax} f(x)$  type included.

## MEMBERS PRESENT

S.NO	NAME	DESIGNATION AND AFFILIATION	PHONE NO.	SIGNATURE
1.	Dr. Revathi V	Professor and HOD, Physics, NHCE	9901415367	
2.	Dr. Prashanth K S	Asso.Prof, Physics, NHCE	9986248364	
3.	Dr. Jisha P K	Asso.Prof, Physics, NHCE	7829730339	
4.	Dr. M N Ravishankar	Professor, Dept of Physics, Dayanand Sagar College of Engineering, Bangalore	9480489556	 M.N.RAVISHANKAR ONLINE
5.	Dr. K Fakruddin	Professor & Head, Dept of Physics, Ghousia College of Engineering, Ramanagaram	9886419379	 Dr. K. Fakruddin Professor & H.O.D. Physics Ghousia College of Engineering, Ramanagara - 562159 ONLINE
6.	Dr. Anusuya Devi V S	Professor and HOD Chemistry, NHCE	7019714060	
7.	Dr. M S Raghu	Sr. AP, Chemistry, NHCE	9844626569	
8.	Ms. Subhashini K	Sr. AP, Chemistry, NHCE	9611336446	
9.	Dr. Raviraj A Kusanur	Associate Professor & HOD Chemistry, RVCE	9448823443	 ONLINE
10.	Dr. Dharma prakash	Professor, Chemistry, BMSCE	9731265431	 ONLINE
11.	Dr. Srinivasa G,	Professor and HOD- Mathematics, NHCE	9449817583	
12.	Dr. Vijilius Helena Raj,	Professor & COE, Mathematics, NHCE	9448969034	
13.	Dr. Hithesh Kumar	Associate Professor, Mathematics, NHCE	9530347475	
14.	Dr. N. Shivakumar	Professor and Head Department of Mathematics, R.V. College of Engineering,	9845276890	 (ONLINE)

15.	Dr. N. L. Ramesh	Professor and Head Department of Mathematics, M. S. Ramaiah Institute of Technology.	9448351607	 (ONLINE)
16.	Dr. Dr. S. Manjunath	Professor and Head, Department of Mathematics, BNMIT	9845420712	 (ONLINE)
17.	Dr. Sandeep Kumar	Professor, Raman Research Institute	9448309554	Sandeep Kumar (ONLINE)
18.	Mr. Nithin P V	Mechanical Engineer Andritz Hydro, NC	704-345-4536	NITHIN P.V. ONLINE
19.	Dr. Ramachandra Naik	Assistant Professor, Physics, NHCE	7204408041	
20.	Mr. Parasuram L	Assistant Professor, Chemistry, NHCE	9019882623	
21.	Dr. A. B. Madhu Mohana Raju	Asso. Prof., Mathematics, NHCE	9441035789	
22.	Dr. Amarjeet Singh	Dean Academics, NHCE	9315432675	
23.	Dr. Manjunatha	Principal, NHCE	9901916000	



## 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.

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.

Chairman BOS- Chemistry & HOD- Chemistry Dr. Anusuya thanked the members for their useful suggestions and active participation in the BOS meeting.

Chairman BOS- Mathematics & HOD- Mathematics Dr. Srinivasa G thanked the members for attending the meeting in spite of their busy schedule.

All three HODs applauded the valuable inputs in deliberation in the meeting and appreciated their contribution of worthy suggestions.



Date: 26/07/21

**Circular**

NHCE/DA/EVEN2020/04

**BOS: Minutes of Meeting Report**

Department Name: *BSH - Physics*

Date of BOS conducted: *24.07.21.*

**Topic: Percentage of syllabus change in BOS meeting**

**BE: Program**

Year	Semester	Current Subject Code (Before BOS)	Proposed Subject Code (After BOS)	Percentage change of syllabus for (AY 2020-2021 to AY 2021-22)	Remarks if any
I Year	I & II	<i>19PHY 12/22 19PHL 10/26.</i>	<i>21PHY 12/22A 21PHL 16/26A</i>	<i>25% 5%</i>	<i>Theory Lab.</i>
II Year	III & IV				
III Year	V & VI				
IV Year	VII & VIII			<i>NA</i>	

**PG: Program : MBA/MCA/M/Tech**

Year	Semester	Current Subject Code (Before BOS)	Proposed Subject Code (After BOS)	Percentage change of syllabus for (AY 2020-2021 to AY 2021-22)	Remarks if any
I Year	I & II				
II Year	III & IV		<i>NA</i>		

*[Signature]*  
Dean-Academics *26/07/2021*

*[Signature]*  
Principal



*[Signature]*  
**M.O.D. - PHYSICS**  
**NEW HORIZON COLLEGE OF ENGINEERING**  
**BANGALORE**



# NEW HORIZON COLLEGE OF ENGINEERING

Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC  
Accredited by NAAC with 'A' Grade, Accredited by NBA  
New Horizon Knowledge Park, Ring Road, Bellandur Post, Bengaluru 560 103

## Department of BSH- Physics

Board of Studies Academic Year: 2021-22

Date of BOS conducted:

### Annexure-I

### Percentage Of Syllabus Change Recommended And Approved

UG Program: BE

Year	Semester	Current Subject Code (Before BOS)	Proposed Subject Code (After BOS)	% change of syllabus	Remarks if any
I Year	I & II	19PHY12/22	21PHY12A/22A	20%	Not Applicable
		19PHL16/26	21PHL16A/26A	10%	
II Year	III & IV				
III Year	V & VI				
IV Year	VII & VIII				

PG: Program : MBA/MCA/M/Tech

Year	Semester	Current Subject Code (Before BOS)	Proposed Subject Code (After BOS)	% change of syllabus for	Remarks if any
I Year	I & II				Not Applicable
II Year	III & IV				

*Ruatha*

**BOS-Chairman**

Chairman - BOS - Physics  
New Horizon College of Engineering (Autonomous)  
Bangalore - 560103

Dated: 24/7/21

*[Signature]*  
**Dean-Academics**



*[Signature]*  
**Principal**

**Department of BSH- Physics**

**Board of Studies Academic Year: 2021-22**

Date of BOS conducted: 24-07-2021

**Annexure-II**

**BOS: Minutes of Meeting Report**

**Topic:** Subject/name and code whose syllabus has not been changed in BOS meeting (unchanged subject).

**UG Program:** BE

Year	Semester	Current Subject Code (Before BOS)	Current Subject Name (Before BOS)	Justification for not Changing
I	I			Not Applicable
	II			
II	III			NA
	IV			
III	V			NA
	VI			
IV	VII			NA
	VIII			

**PG: Program : MBA/MCA/M/Tech**

Year	Semester	Current Subject Code (Before BOS)	Current Subject Name (Before BOS)	Justification for not Changing
I	I			NA
	II			
II	III			NA
	IV			

*Srinath*  
BOS-Chairman

Chairman - BOS - Physics

New Horizon College of Engineering (Autonomous)  
Bangalore - 560103

Dated: 24/7/21

*[Signature]*  
Dean-Academics



*[Signature]*  
Principal



**NEW HORIZON**  
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 New Horizon Knowledge Park, Ring Road, Bellandur Post, Bengaluru 600 103

**Department of BSH- Physics**

**Board of Studies Academic Year: 2021-22**

**Date of BOS conducted: 24-07-2021**

**Annexure-III**

**Topic: Proposed subject name and new subject code (After BOS) whose subject topics changed**

Year	Semester	Proposed Subject Name	Proposed Subject Code	Module No	List of Subject Topics Changed	% of change of s
I	I/II	Engineering Physics	21PHY12A/22A	Module-1 Module-2 Module-3 Module-4 Module-5 Module-2 Module-3 Module-4 Module-5	Module 1- Quantum computing basics, Qbits Module 2-Ferroelectrics Module 3- removed Co <sub>2</sub> laser and added quantum dot laser, Laser ablation technique Module 4- No changes Module 5- Instrumentation Physics, AFM,XPS	Module 1-2% Module 2-1% Module 3-2% Module 4- 0% Module 5- 15%
I	I/II	Engineering Physics lab	21PHL16A/26A	Expt. Transistor Characteristics removed XRD - Powder pattern Removed	Expt. Particle Size Determination Introduced	10%

*Ruswatha*

**BOS-Chairman**

Chairman - BOS - Physics  
 New Horizon College of Engineering(Autonomous)  
 Bengaluru 600103

**Dated:** 24/07/21

*[Signature]*  
**Dean-Academics**



*[Signature]*  
**Principal**



# NEW HORIZON COLLEGE OF ENGINEERING

Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC  
Accredited by NAAC with 'A' Grade, Accredited by NBA

Date: 29/07/2021

## Circular

NHCE/DA/EVEN2020/04

**BOS: Minutes of Meeting Report**

**Department Name: Mathematics**

**Date of BOS conducted: 24-07-2021**

**Topic: Percentage of syllabus change in BOS meeting**

**BE: Program**

Year	Semester	Current Subject Code (Before BOS)	Proposed Subject Code (After BOS)	Percentage change of syllabus for (AY: 2020-2021 to AY: 2021-22)	Remark if any
I Year	I & II	19MAT11	21MAT11A	4 $\frac{1}{4}$	
		19MAT21	21MAT21A	5	
II Year	III & IV	19AUT31/19CIV31/19MEE31	20AUT31A/20CIV31A/20MEE31A	12	
		19CSE31/19ISE31	20CSE31A/20ISE31A	4	
		19ECE31/19EEE31	20ECE31A/20EEE31A	2	
		19DMAT31	20DMAT31A	3	
		19AUT41/19CIV41/19MEE41	20AUT41A/20CIV41A/20MEE41A	8	
		19CSE41/19ISE41	20CSE41A/20ISE41A	1	
		19ECE41/19EEE41	20ECE41A/20EEE41A	4	
		19DMAT41	20DMAT41A	4	
III Year	V & VI	NOT APPLICABLE			
IV Year	VII & VIII	NOT APPLICABLE			

PG: Program: MBA/MCA/M/Tech

Year	Semester	Current Subject Code (Before BOS)	Proposed Subject Code (After BOS)	Percentage change of syllabus for (AY: 2020-2021 to AY: 2021-22)	Remarks if any
I Year	I & II	NOT APPLICABLE			
II Year	III & IV				

Dean-Academics



BOS Chairman  
Chairman - BOS - Mathematics  
New Horizon College of Engineering (Autonomous)  
Bangalore - 560103

Principal



# NEW HORIZON COLLEGE OF ENGINEERING

Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC  
Accredited by NAAC with 'A' Grade, Accredited by NBA

## Department of Mathematics

Board of Studies Academic Year: 2021-2022

Date of BOS conducted: 24-07-2021

### Annexure-I

### Percentage of Syllabus Change Recommended and Approved

UG Program: BE

Year	Semester	Current Course Code (Before BOS)	Proposed Course Code (After BOS)	% of change of syllabus	Remarks if any
I Year	I	19MAT11	21MAT11A	4	Theory
	II	19MAT21	21MAT21A	5	Theory
II Year	III	New 19AUT31/19CIV31/19MEE31 19CSE31/19ISE31 19ECE31/19EEE31 19DMAT31	20AIM31A/20CEE31A 20AUT31A/20CIV31A/20MEE31A 20CSE31A/20ISE31A 20ECE31A/20EEE31A 20DMAT31A	100 12 4 2 3	New Theory Theory Theory Theory
	IV	New 19AUT41/19CIV41/19MEE41 New/19CSE41/19ISE41 19ECE41/19EEE41 19DMAT41	20AIM41A 20AUT41A/20CIV41A/20MEE41A 20CEE41A/20CSE41A/20ISE41A 20ECE41A/20EEE41A 20DMAT41A	100 8 100/1 4 4	New Theory New Theory Theory
III Year	V & VI	NOT APPLICABLE			
IV Year	VII & VIII				

PG: Program: MBA/MCA/M.Tech

Year	Semester	Current Course Code (Before BOS)	Proposed Course Code (After BOS)	% of change of syllabus	Remarks if any
I Year	I & II	NOT APPLICABLE			
II Year	III & IV				

C: BOS Chairman Mathematics  
New Horizon College of Engineering (Autonomous)  
Dated: 29/07/2021

Dean-Academics

Principal







# NEW HORIZON COLLEGE OF ENGINEERING

Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC  
Accredited by NAAC with 'A' Grade, Accredited by NBA

## Department of Mathematics

Board of Studies Academic Year: 2021-2022

Date of BOS conducted: 24-07-2021

### Annexure-II

#### BOS: Minutes of Meeting Report

**Topic:** Course/name and code whose syllabus has not been changed in BOS meeting (unchanged Course).

**UG Program:** BE

Year	Semester	Current Course Code (Before BOS)	Current Course Name (Before BOS)	Justification for not Changing
I	I	NIL		
	II	NIL		
II	III	NIL		
	IV	NIL		
III	V			NOT APPLICABLE
	VI			
IV	VII			
	VIII			

**PG: Program:** MBA/MCA/M.Tech

Year	Semester	Current Course Code (Before BOS)	Current Course Name (Before BOS)	Justification for not Changing
I	I			NOT APPLICABLE
	II			
II	III			
	IV			

**BOS-Chairman** Mathematics  
New Horizon College of Engineering (Autonomous)  
Bengaluru - 560103  
Dated: 27/07/2021.

Dean-Academics

Principal



BOS H



**NEW HORIZON**  
**COLLEGE OF ENGINEERING**  
Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC  
 Accredited by NAAC with 'A' Grade, Accredited by NBA

Department of Mathematics

Board of Studies Academic Year: 2021-2022

Date of BOS conducted: 24-07-2021

**Annexure-III**

Topic: Proposed Course name and new Course code (After BOS) whose Course topics changed

Year	Semester	Proposed Course Name	Proposed Course Code	Module No.	List of Course Topics Changed	% of change of syllabus
I	I	APPLIED MATHEMATICS-I	21MAT11A	Modu.e-1: NO Change Modu.e-2: NO Change Modu.e-3: NO Change Modu.e-4: NO Change <b>Module-5: 4% Change</b>	<b>Module 5:</b> Applications of matrices to Chemical equation and Network flow included.	4
	II	APPLIED MATHEMATICS-II	21MAT21A	<b>Module-1: 5% Change</b> Module-2: NO Change Module-3: NO Change Module-4: NO Change Module-5: NO Change	<b>Module 1:</b> $e^{ax} f(x)$ , $x f(x)$ , $a x^n$ types included.	5
II	III	APPLIED MATHEMATICS-III	20AIM31A/20CEE31A	Module-1: New Module-2: New Module-3: New Module-4: New Module-5: New	<b>Module 1:</b> Numerical solution of algebraic and transcendental equations:	100 (since Newly Started Branches Syllabus)



					<p>proofs)-Problems.</p> <p><b>Applications:</b> Application of numerical integration to velocity of a particle and volume of solids.</p> <p><b>Module 3:</b></p> <p><b>Fourier series:</b> Periodic function, Dirichlet's conditions, Fourier series of periodic functions of period <math>2l</math>, half arbitrary period <math>2l</math>, half range Fourier series and half range Fourier series of periodic square wave, half wave rectifier, Saw-tooth wave with graphical representation, practical harmonic analysis.</p> <p><b>Module 4:</b></p> <p><b>Fourier Transforms:</b> Infinite Fourier transforms, Fourier Sine and Cosine transforms, Inverse Fourier transform.</p> <p><b>Z - Transform:</b> Definition, Z-transforms of some standard functions, properties,</p>
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					<p>damping rule, shifting rule(without proof), initial and final value theorems, inverse Z-transforms.</p> <p><b>Applications:</b> Solving difference equations using Z-transform.</p> <p><b>Module 5:</b></p> <p><b>Discrete Fourier Transform and Fast Fourier Transform:</b></p> <p>Definition of N-Point DFT, problems for 4-points and inverse DFT for four points only. FFT algorithm to compute the Fourier transforms 4-point only.</p> <p><b>Statistical Methods:</b></p> <p>Fitting of the curves of the form <math>y = a + b x</math>, <math>y = a + b x^2</math>, <math>y = a e^{bx}</math>, <math>y = a x^b</math>, and <math>y = a b^x</math> by the method of least square, Correlation and Regression, Regression coefficients, line of regression –Problems.</p> <p><b>Module 2:</b></p> <p>Numerical Differentiation</p>	12
	APPLIED MATHEMATICS-III	20AUT31A/20CIV31A/20MEE31A	<p>Module-1: NO Change</p> <p><b>Module-2: 6% Change</b></p> <p>Module-3: NO Change</p>			



	IV	<p style="text-align: center;"><b>MATHEMATICAL STATISTICS</b></p>	<p style="text-align: center;"><b>20AIM41A</b></p>	<p>Module-1: New Module-2: New Module-3: New Module-4: New Module-5: New</p>	<p><b>Module 1:</b> Measures of Dispersion, Skewness and Kurtosis: Dispersion, Measures of dispersion, Percentile, Range, Quartile deviation, Mean deviation, Coefficient of dispersion, Coefficient of variation, Moments, Skewness, Kurtosis. <b>Module 2:</b> <b>Combinatorics and Probability:</b> Random variables, Permutations and Combinations, Probability, Axioms of probability, Events, Addition rule, Conditional probability, Multiplication rule, Baye's theorem. <b>Module 3:</b> <b>Probability Distributions:</b> Random variables (discrete and continuous),</p>	<p style="text-align: center;">100 (since Newly Started CEE Branch Syllabus)</p>
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				<p>probability density functions. Discrete Probability distributions: Binomial and Poisson Distributions-Problems. Continuous Probability distributions: Exponential and Normal Distributions-Problems.</p> <p><b>Module 4:</b></p> <p><b>Joint Probability Distributions and Stochastic process:</b></p> <p>Concept of joint probability-Joint probability distribution, Discrete and Independent random variables. Expectation, Covariance, Correlation coefficient. Probability vectors, Stochastic matrices, Fixed points, Regular stochastic matrices. Markov chains, Higher transition probabilities. Stationary distribution of regular Markov chains and absorbing states.</p> <p><b>Module 5:</b></p> <p><b>Sampling Theory:</b></p>
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				Sampling, Sampling distributions, test of hypothesis of large samples for means and proportions, Central limit theorem (without proof), confidence limits for means, Student's t-distribution, F-distribution and Chi-square distribution for test of goodness of fit for small samples.	
APPLIED MATHEMATICS-IV	20AUT41A/20CIV41A/20MEE41A	Module-1: NO Change Module-2: NO Change <b>Module-3: 2% Change</b> Module-4: NO Change <b>Module-5: 6% Change</b>	Module 3: Generalized Cauchy's integral formula added. <b>Module 5: Test of hypothesis of large samples for means and proportions, Central limit theorem (without proof) and Confidence limits for means is included.</b>	8	
DISCRETE MATHEMATICS AND GRAPH THEORY	20CEE41A/20CSE41A/20ISE41A	<b>Module-1: 2% Change</b> Module-2: NO Change Module-3: NO Change <b>Module-4: -1% Change</b> Module-5: 1%-1% Change	<b>Module 1:</b> NAND and NOR connectives are included. <b>Module 4:</b> Distance and Centers in tree are removed. <b>Module 5:</b> Dual of planar graphs added. Combinational and	100 (since Newly Started CEE Branch Syllabus) and 1 (for CSE & ISE)	

					geometric graphs are removed.	
	APPLIED MATHEMATICS-IV	20ECE41A/20EEE41A		Module-1: NO Change Module-2: NO Change Module-3: 2% Change Module-4: NO Change Module-5: 2% Change	Module 3: Generalized Cauchy's integral formula added. Module 5: Central limit theorem (without proof) concept included.	4
	BASIC APPLIED MATHEMATICS-II	20DMAT41A		Module-1: NO Change Module-2: NO Change Module-3: 4% Change Module-4: NO Change Module-5: NO Change	Module 3: $e^{ax}$ $f(x)$ type included.	4
III	V					
	VI					
IV	VII					
	VIII					

NOT APPLICABLE

PG: Program: MBA/MCA/M.Tech

Year	Semester	Proposed Course Name	Proposed Course Code	Module No.	List of Course Topics Changed	% of change of syllabus
I	I					
	II					
	III					
	IV					
II	I					
	II					
	III					
	IV					

NOT APPLICABLE

*[Signature]*  
**Ch. B. S. Chaitanya** Mathematics  
 New Horizon College of Engineering & Technology  
 Dattatreya P.O.S.I.

*[Signature]*  
**Dean-Academics**

*[Signature]*  
**Principal**





Date: 26/07/21

**Circular**

NHCE/DA/EVEN2020/04

**BOS: Minutes of Meeting Report**

Department Name: *BSH - Chemistry*

Date of BOS conducted: *24.07.21*

**Topic: Percentage of syllabus change in BOS meeting**

**BE: Program**

Year	Semester	Current Subject Code (Before BOS)	Proposed Subject Code (After BOS)	Percentage change of syllabus for (AY 2020-2021 to AY 2021-22)	Remarks if any
I Year	I & II	<i>19CHE12/22 19CHL17/27</i>	<i>21CHE12A/22A 21CHL17A/27A</i>	<i>20% -</i>	<i>Theory Lab.</i>
II Year	III & IV				
III Year	V & VI				
IV Year	VII & VIII				

**PG: Program : MBA/MCA/M/Tech**

Year	Semester	Current Subject Code (Before BOS)	Proposed Subject Code (After BOS)	Percentage change of syllabus for (AY 2020-2021 to AY 2021-22)	Remarks if any
I Year	I & II				
II Year	III & IV				

*[Signature]*  
Dean-Academics *26/07/2021*

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Principal



*[Signature]*  
*29/7/21*

Chairman - BOS - Chemistry  
New Horizon College of Engineering  
Bengaluru - 560 103

# New Horizon College of Engineering

Department of Basic Sciences and Humanities - Chemistry

Board of Studies Academic Year: 2021-22

Date of BOS conducted: 24.07.2021

## Annexure-III

Topic: Proposed subject name and new subject code (After BOS) whose subject topics changed

Year	Semester	Proposed Subject Name	Proposed Subject Code	Module No	List of Subject Topics Changed	% of change of syllabus
I	I /II	Engineering Chemistry	21CHE12/22	Module-1	Recent advances in battery technology fuel cell technology and super capacitors have been removed	2%
				Module-2	CVD process has been removed.	1%
				Module-3	Pour point, cloud point, flash point and Energy Crisis were removed	2%
				Module-4	Greenhouse effect and global warming was removed. Selective catalytic reduction of NOx and Electro static precipitation technique for the removal of particulate matter and smoke in mining industries were introduced.	15%
				Module-5	Reverse osmosis process in water purification, hard water and boiler problems were introduced. Shape memory polymers was removed	1%
I	I /II	Engineering Chemistry Lab	21CHL17/27	Lab	No change	0%

*[Signature]*  
BOS-Chairman

Chairman - BOS - Chemistry  
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*[Signature]*  
Principal