



**NEW HORIZON
COLLEGE OF ENGINEERING**

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

**DEPARTMENT OF COMPUTER SCIENCE AND
ENGINEERING (DATA SCIENCE)**

BOARD OF STUDIES MEETING

DATE : 03/10/2023
VENUE : Dept. of ISE, NHCE
TIME : 10.00 am to 1.00pm

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AGENDA FOR THE MEETING

Agenda 1	Approval of Department Vision, Mission, Program Specific Outcomes, Program Educational Objectives.
Agenda 2	Scheme for 2022-2026 Batch (3rd to 8th SEM) – Discussion and Approval. (160 Credits)
Agenda 3	Syllabus for 2022-2026 Batch (3rd to 4th Sem) – Discussion and Approval. (160 Credits)
Agenda 4	Proposed Best Practices
Agenda 5	Suggestions and Recommendations from Board Members
Agenda 6	Concluding Remarks

LIST OF MEMBERS

S. No	Category	Nomination of the committee	Name of the person	Designation & Affiliation
1	Head of the Department	Chairperson	Dr. Baswaraju Swathi	Associate Professor & HOD, Dept. Of CSE(DS)
2	Special Invitees	1	Dr. Manjunatha	Principal, NHCE
		2	Dr. R J Anandhi	Dean Academics, NHCE
3	Experts from outside the college nominated by VTU (VTU NOMINEE) Special Invitees (one academician from Institution of National Eminence, IIT,NIT,IIM,IISC)	Member		
		1	Dr. Ramesh Babu HS	Principal & Professor – Department of AIML,RNSIT,Bengaluru
4		1	Dr. Anandhi Giridharan	Principal Research Scientist IISc, Bangalore.
5	Subject expert from outside the college nominated by Academic Council (Academic Technical Expert)	Member		
		1	Dr. Piyush Parekh	Professor & HOD-AIML Nitte Meenakshi Institute of Technology, Bengaluru
		2	Dr.Manjunath TN	Professor & Dean Career Guidance, Department of ISE,BMSIT, Bengaluru
6	Representative from Industry / Corporate sector / allied area related to placements, nominated by Academic Council (Industry Technical Expert)	Member		
		1	Dr.Thejasvi Nagaraju	Industry Principal Consultant, Enterprise Cloud Packages, Communications Media and Entertainment, Infosys Limited, Mysuru
7	Faculty member at different level with different specialization	Member		
		1	Dr.J.Joshua Daniel Raj	Associate Professor, Dept. of CSE(DS), NHCE, Bangalore

		2	Mr.Vijay Kumar R	Senior Assistant Professor, Dept. of CSE(DS), NHCE, Bangalore
8	Post Graduate meritorious alumni nominated by Principal	Member		
		1	Mr.Naveen Kushalappa	Full Stack Developer, Sprinto.
		2	Mr. Sumanth T	Software Engineer, Microsoft, Seattle, United States.
		3	Ms.Roshni	Data Science Engineer, BigHaat India
9		Member		
	Co-opted members (Placement)	1	Mr.Anis Mirza	Director - Corporate Relations, Learning &Development, Placements and IIC- NHCE
	Co-opted members (Academic Technical Expert)	2.	Dr. Vandana CP	Associate Professor, Dept. of ISE, NHCE, Bangalore

WELCOME ADDRESS BY THE CHAIRMAN OF BOS AND INTRODUCTION OF MEMBERS

The BOARD OF STUDIES (2023 – 24) meeting was held on 03/10/2023 in hybrid mode using Google Meet with internal members, few external members (in person) and other external members joined online. Dr. Baswaraju Swathi, Chairperson of BOS, Associate Professor & HOD, Dept. Of CSE (DS) welcomed the BOS Committee members. HOD presented the agenda of the Board of studies meeting to the members. She introduced the Internal and External BOS members. The Scheme of B.E (3rd to 8th) Semester of 2022-2026 batch and syllabus of 3rd and 4th semester B.E (2022-2026) Batch was shared via email to all the board members for effective discussion and recommendations.

AGENDA -1

Approval of Department Vision, Mission, Program Specific Outcomes, Program Educational Outcomes.

- HOD started the presentation by highlighting the College accreditations details, NIRF ranking with members.
- Institute Vision, Mission, Program Specific Outcomes, Program Educational Objectives and Quality Policy were presented to the BOS members.
- The proposed Vision, Mission, Program Specific Outcomes, Program Educational Objectives and Quality Policy of the Department of CSE (DS) were presented and approved by the BOS Members.

AGENDA -2

Scheme for 2022-2026 Batch (3rd to 8th SEM) – Discussion and Approval. (160 Credits)

Salient features as below were highlighted by the BOS chairman:

- Presented the scheme of 2022-2026 batch.
- The Course Category and the credit distribution for the same was discussed.
- The Professional Core Courses, Core Labs and professional Elective Courses were discussed in detail.
- The Programming Language Courses and Ability enhancement courses were highlighted.
- Project based learning through Mini project and Major Project was discussed.
- Research Internship of 10 credits was discussed.

Semester wise scheme was presented to the Board of studies, following are the suggestion and recommendations:-

3rd to 8th Semester:

- Board member Dr. Ramesh Babu HS suggested, confirm of VTU guidelines with NEP for course code, to enable credit transfer possible across colleges.
- Board member Dr. Ramesh Babu HS suggested, including computer organization paper in 4th semester and to allot minimum credits for Digital Logic Design course.
- Board Members appreciated the concept of Mini projects.
- Board member Dr. Anandhi Giridharan suggested including Edge Computing & Signal Processing Papers in the curriculum.
- BOS members suggested, be specific with 3rd to 8th Sem Subject names. (Like fundamentals, advanced, implementation)

AGENDA -3

Syllabus for 2022-2026 Batch (3rd to 4 th Sem) – Discussion and Approval. (160 Credits)

- BOS member Dr.Manjunath TN, suggested to confirm with the mathematics syllabus covered, is in power with Gate Syllabus.
- Board member Dr.Thejasvi Nagaraju suggested mapping industry driven courses in the curriculum, Reasoning is most important to convince students on why they have to focus on Courses and how it helps in solving engineering problems.
- Dr.Thejasvi Nagaraju also suggested to have a mini project of data migration, further emphasized on the Practical knowledge of shell and Perl scripting is very key in engineering world. e.g. scheduling and executing a batch job from shell or Perl scripts. Performing basic file operations using shell scripting is key, concepts of SFTP is very essential while dealing with information exchange between the systems.
- Dr.Thejasvi Nagaraju also emphasized that in programming courses often students miss - BEST PRACTICES, Documentation, or they avoid using best in breed IDE environments - e.g. VSS code with all necessary plug-ins, having static code analysis tools in conjunctions that leads to poor coding practices.
- BOS member Dr.Piyush Kumar Parekh, suggested to have CIE components to be industry driven.
- Mr.Sumanth T, A course on Responsible AI would be a nice addition to help the students understand how to use AI in ethical, safe and secure fashion. When developing AI/Data Science applications, often find spending 90% of the time on analyzing the effects of not using AI the right way and the impact it would cause if it doesn't perform the way it should(and ways to solve them). Since there is pressure on industry from regulators, companies/employees are forced to use AI responsibly and this course could be a good start. He further suggested Course on Natural Language Processing. Industry is focusing a lot on Generative AI currently and even though the course on Deep Learning may cover

Generative AI fundamentals, an NLP course would be a great addition too if students would like to pursue research/projects in NLP.

- Board Member Ms.Roshni recommended using Jupiter, Postgre SQL and Post JS for DBMS.

AGENDA -4

Proposed Best Practices

- CIE Components and Evaluation for the same was discussed in detail and the BOS member Dr. Piyush Kumar Parekh, suggested to have CIE components to be industry driven.
- Dr. Ramesh Babu HS emphasized the Infosys Spring Board Programme and can be incorporated with Assignments.

AGENDA -5

Suggestions and Recommendations from BOS Members

Dr. Ramesh Babu HS, Academic Technical Expert

- Dr. Ramesh Babu H.S, recommended Computer organization course to be included in the curriculum.
- Sir, suggested CIE Component to be industry perspective and should help students for placement.
- The course names need to be specific like Fundamentals of Data Science, Essentials of Machine Learning, as the courses are broad.
- Sir also addressed about the course codes to be in line with vtU.

Dr. Anandhi Giridharan, Academic Technical Expert

- Dr. Anandhi Giridharan recommended upgrading faculty knowledge so that they can frame better syllabus incorporating latest technology. Example, in cloud computing course need to give an in site of edge computing. More Analytical learning and hands on oriented approaches to be used.
- Dr. Anandhi Giridharan emphasized the Outreach programs and to be included in the curriculum and grading, the AICTE Activity points were highlighted and the same was appreciated.
- Board member Dr. Anandhi Giridharan suggested including Edge Computing & Signal Processing Papers in the curriculum.

Dr. Piyush Parekh, Academic Technical Expert

- Dr. Piyush Parekh, suggested that the programming and core Engineering Science courses CIE to include placement oriented questions.
- Sir highlighted the evaluation of Non Credit based courses.
- Sir suggested modifications in syllabus as per the industry standards.

Dr.Manjunath TN, Academic Technical Expert

- Mathematics Syllabus to be in line with GATE Syllabus.
- Sir suggested to verify the syllabus with IITM / IITK Data Science Courses so that the syllabus would be intact.
- Faculty upgrading should be a continuous process, they have to balance between the theoretical and practical approaches.

Dr.Thejasvi Nagaraju, Industry Technical Expert

- Advanced Data Structures: Real-world problem statements that can be quoted so to stress the importance of advanced data structures Reasoning is most important to convince students on why they have to focus on Data structure and how it helps in solving engineering problems.
- Database Management : All the concepts around relational DBMS is covered in your syllabus including Joins, normalization, grouping, foreign key, composite keys, ACID conditions, etc. however from practical adoption - should have a mini project of data migration where students should try Data extraction, data cleansing / uplift (with functions or plsql procedures , etc) and finally load the records into target data schema ensuring all relationships are maintained using vlookup / hlookup having confidence in data migration is the key take-away of learning DBMS concepts as far as industry needs are concerned.
- Linux systems programming: Practical knowledge of shell and Perl scripting is very key in engineering world. e.g. scheduling and executing a batch job from shell or perl scripts. Performing basic file operations using shell scripting is key, concepts of SFTP is very essential while dealing with information exchange between the systems.
- WEB Design: Covering PHP, XHTML, Javascript, HTML5, CSS3 onwards, etc. are all well covered in the syllabus, in continuation students must be thought of using CMS, Caching, AJAX, performance tuning, Node JS, React UI concepts, etc. In industry , React UI, Node JS, Performance, Caching and content management CMS are very important.
- Python for data Analytics: (Also applicable in Java programming): While basic concepts are taught, it is very important to expose students to dozens of pre-built libraries, how to invoke and consume them. More they are aware of building and consuming the libraries, that helps them build real-world solutions, in programming often students miss - BEST PRACTICES, Documentation, or they avoid using best in breed IDE environments - e.g. VSS code with all necessary plug-ins. Having a code smell, static code analysis tools in conjunctions that leads to poor coding practices. Institute must enforce adopting all above norms with strict scoring/evaluation.
- GIT / Version control Applicable to any programming languages - Java, or even COTS based development this is another subject which is very close to any industry any delivery .Students must know fundamentals of version control, how to use it, or even better how to build a branching approach for a mini project simulating multiple team based

development environment. this helps students to ensure they know how to work in collaboration, without code overwriting, and can better visualize the GIT functions.

- Operating Systems: Deadlock, file and Disc managements, with various algorithms used to process the task are all important. Due to evolution of AI and need for GPU, hyper threading concepts are important.
- UI and UX design: Design thinking concepts, mockup design, measuring the effectiveness of design, conducting workshop to capture user persona, wire framing, HTML clickable interface development and delivering are very important skill-sets in UI/UX must consider device agnostic, omni-channel experience. Figma is a good consideration.
- Ethical hacking lab was appreciated.

Mr.Sumanth T, Alumnus from 2013-2017 Batch (Department of ISE):

- A standalone course in Data visualization could be very useful for DS students. It could cover all major visualization packages.
- A course that brushes up on Statistics and Probability and teaches students some real world applications of these could be very useful.
- Course on Natural Language Processing ,Industry is focusing a lot on Generative AI currently and even though the course on Deep Learning may cover Generative AI fundamentals, an NLP course would be a great addition too if students would like to pursue research/projects in NLP.
- An introduction to AI/ML course that is centered on teaching AI/ML applications in business.

AGENDA -6

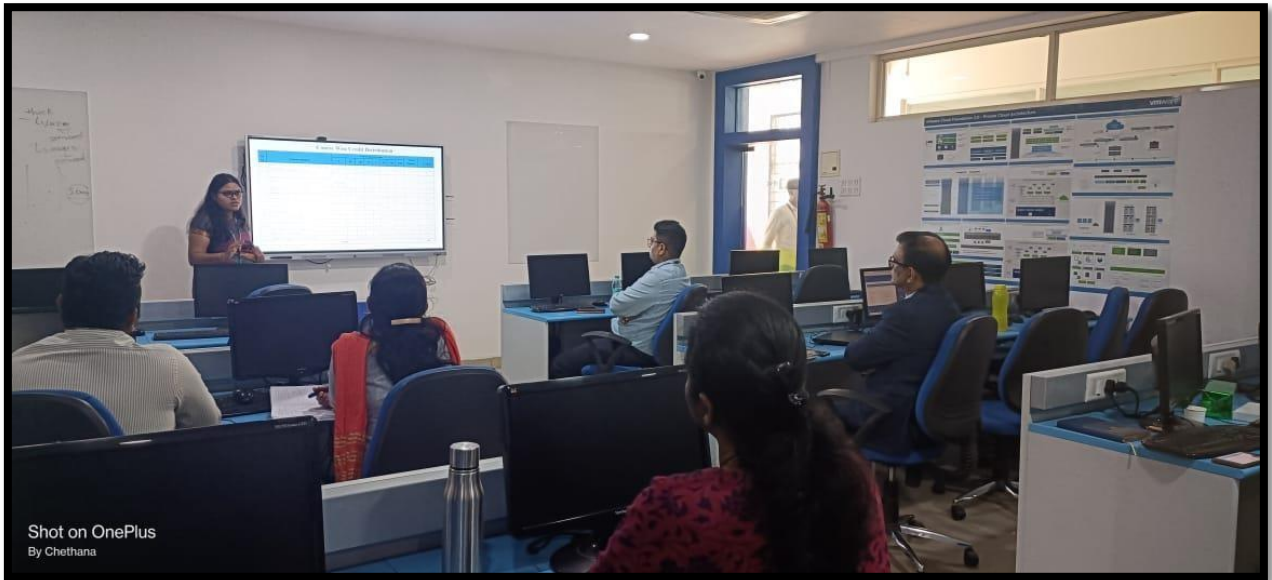
Concluding Remarks

- Board of Studies members appreciated the curriculum design.

VOTE OF THANKS BY THE CHAIRMAN-BOS

BOS Chairman delivered Vote of thanks. BOS Chairman thanked each and every member for their contribution and completion of BOS Meeting successfully.

SCREENSHOTS:



Meet - crm-fbqx-pxn

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swathi b (Presenting)

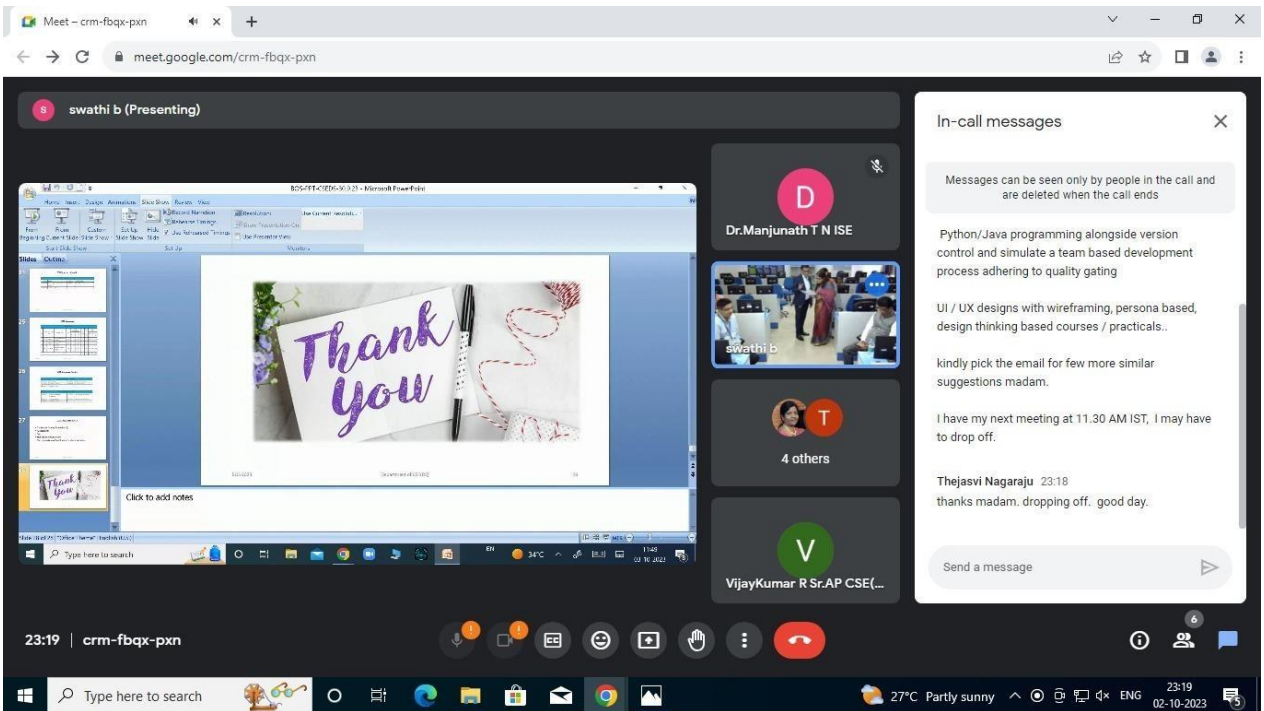
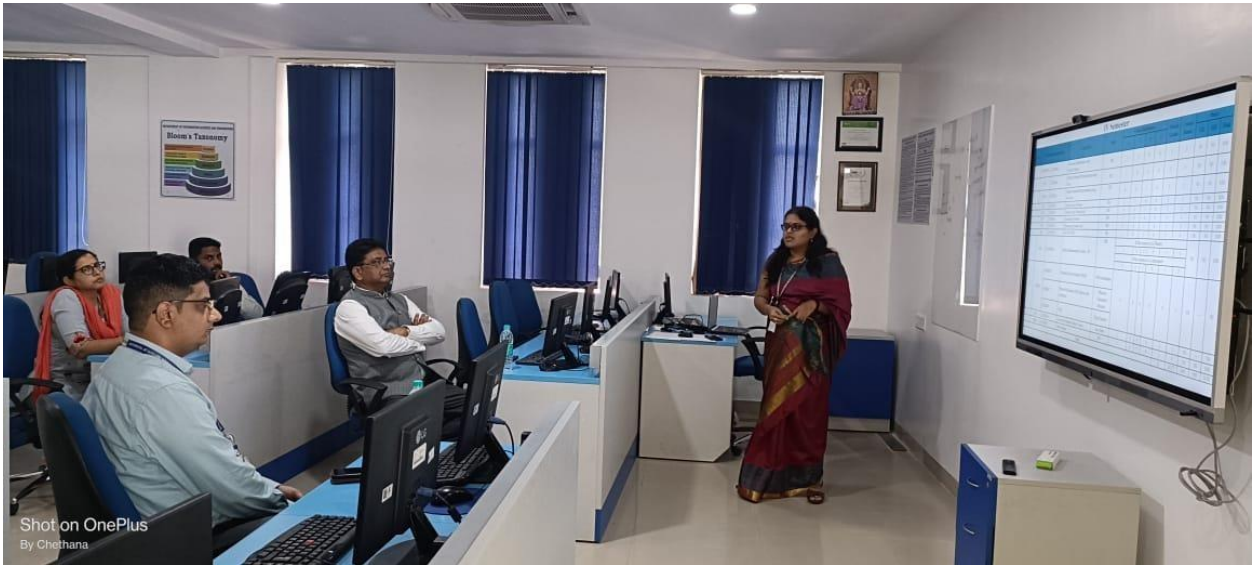
Course Wise Credit Distribution

Sl. No.	Course category	Course, Semester-wise								Total Subject	Credits
		I	II	III	IV	V	VI	VII	VIII		
1	Basic Science Courses /Basic Science Course Lab	2(4+1)	2(4+4)	2(3+3)	1(3)					7	25
2	Programming Language Courses	1(1) (3)		1(1)(3)	1(1)(3)					3	9
3	Engineering Science Courses /Emerging Technology Courses	2 (4 integrated (3:3)	3(2+3+3)							5	14
4	Engineering Science Courses Lab	1	1(1)							2	1
5	Humanity Social Science & Management Courses	1(1)	1(1)			1(3)				3	5
6	Professional Core Courses			2(3(3)	3(3+3 +3)	2(3+ 3)	2(3+3 +3)	3(3+3+ 3)		13	39
7	Professional Core Courses Lab			2(1+1)	3(1+1 +1)	2(1+ 1)	2(1+1)	2(1+1)		11	11
8	Professional Elective Courses				1(3)	1(3)	1(3)	2(3(3)		5	15
9	Open Elective(multidisciplinary) Course					1(3)	1(3)			2	06
10	Ability Enhancement Courses	2 (1+1)	2(1+1)	1(1)	1(1)	1(3)	1(1)			8	11
11	Skill Courses (Mini Project)(Full Project)				1(1)	1(1)	1(2)	1(6)		4	10
12	Skill Courses (Internship)							1(10)		1	10
13	Mandatory courses UGC/AICTE/UHV			1(1)	1(1)	1(2)				3	4
Total											160

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B. Suresh

HOD-CSE (DS)