



**P. E. S. COLLEGE OF ENGINEERING**  
MANDYA -571401. Karnataka.

An Autonomous Institution, under Visvesvaraya Technological University,  
Belgaum, Aided by Govt. of Karnataka, Recognized by AICTE, New Delhi.  
**Post Graduate Department of Management Studies**



Alumni Survey

BATCH: 2025-23

SL. NO.	QUESTIONS	PO	High (3)	Moderate (2)	Low (1)
1	Are you able to apply the basic knowledge of fundamental courses studied?	P01		✓	
2	To what extent the course learned helps to identify and analyze managerial problems of the company?	P01	✓		
3	Based on the learning are you able to identify, analyze and interpret the problems/issues and help the management in decision making?	P02		✓	
4	Have you attained the ability to become a member or a leader in diversified area and to what extent?	P03	✓		
5	To what extent you are prepared to become an entrepreneur?	P03	✓		
6	To what extent the case studies, seminars, projects, soft skills and other continuous personality development activities are helping you to cope up with ever changing local and global needs?	P04	✓		
7	To what extent the communication skill attained in both verbal and written form helped in your career?	P04		✓	
8	To what extent you are able to become professionally, ethically and socially responsible?	P04	✓		
9	To what extent your knowledge and skills developed during the program, helping you to progress in your career?	P05	✓		
10	What is the level of confidence to plan, execute and complete the projects assigned to you?	P05	✓		

Signature: Chandana KR

Student's name: Chandana K R

USN: UPS21BA009



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**Post Graduate Department of Management Studies**



Alumni Survey

BATCH: \_\_\_\_\_

SL. NO.	QUESTIONS	PO	High (3)	Moderate (2)	Low (1)
1	Are you able to apply the basic knowledge of fundamental courses studied?	P01	/		
2	To what extent the course learned helps to identify and analyze managerial problems of the company?	P01			
3	Based on the learning are you able to identify, analyze and interpret the problems/issues and help the management in decision making?	P02	/		
4	Have you attained the ability to become a member or a leader in diversified area and to what extent?	P03	/		
5	To what extent you are prepared to become an entrepreneur?	P03		/	
6	To what extent the case studies, seminars, projects, soft skills and other continuous personality development activities are helping you to cope up with ever changing local and global needs?	P04	/		
7	To what extent the communication skill attained in both verbal and written form helped in your career?	P04		/	
8	To what extent you are able to become professionally, ethically and socially responsible?	P04	/		
9	To what extent your knowledge and skills developed during the program, helping you to progress in your career?	P05	/		
10	What is the level of confidence to plan, execute and complete the projects assigned to you?	P05	/		

Signature: Raju  
Student's name: Raju K S  
USN: HP2008A039



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Alumni Survey

BATCH: 2020-22

SL. NO.	QUESTIONS	PO	High (3)	Moderate (2)	Low (1)
1	Are you able to apply the basic knowledge of fundamental courses studied?	P01	/		
2	To what extent the course learned helps to identify and analyze managerial problems of the company?	P01	/		
3	Based on the learning are you able to identify, analyze and interpret the problems/issues and help the management in decision making?	P02	/		
4	Have you attained the ability to become a member or a leader in diversified area and to what extent?	P03	/		
5	To what extent you are prepared to become an entrepreneur?	P03		/	
6	To what extent the case studies, seminars, projects, soft skills and other continuous personality development activities are helping you to cope up with ever changing local and global needs?	P04		/	
7	To what extent the communication skill attained in both verbal and written form helped in your career?	P04	/		
8	To what extent you are able to become professionally, ethically and socially responsible?	P04		/	
9	To what extent your knowledge and skills developed during the program, helping you to progress in your career?	P05	/		
10	What is the level of confidence to plan, execute and complete the projects assigned to you?	P05		/	

Signature:

Student's name: Shreeansh Genda

USN: 4PS208A0U7



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**Post Graduate Department of Management Studies**

Alumni Survey

BATCH: 2021-23

SL. NO.	QUESTIONS	PO	High (3)	Moderate (2)	Low (1)
1	Are you able to apply the basic knowledge of fundamental courses studied?	P01	✓		
2	To what extent the course learned helps to identify and analyze managerial problems of the company?	P01	✓		
3	Based on the learning are you able to identify, analyze and interpret the problems/issues and help the management in decision making?	P02		✓	
4	Have you attained the ability to become a member or a leader in diversified area and to what extent?	P03	✓		
5	To what extent you are prepared to become an entrepreneur?	P03	✓		
6	To what extent the case studies, seminars, projects, soft skills and other continuous personality development activities are helping you to cope up with ever changing local and global needs?	P04		✓	
7	To what extent the communication skill attained in both verbal and written form helped in your career?	P04	✓		
8	To what extent you are able to become professionally, ethically and socially responsible?	P04		✓	
9	To what extent your knowledge and skills developed during the program, helping you to progress in your career?	P05	✓		
10	What is the level of confidence to plan, execute and complete the projects assigned to you?	P05	✓		

Signature: 

Student's name: Aojun S

USN: UPS21BA003



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**Post Graduate Department of Management Studies**

Employer Survey

SL.NO.	QUESTIONS	PO	High (3)	Moderate (2)	Low (1)
1	Are you happy with the performance of our graduate at your workplace?	PO1	/		
2	How do you rate our graduates' communication skills with other employees of your company?	PO5	/		
3	How do rate our graduates' punctuality, sincerity and diligence while performing the job?	PO4		/	
4	What is the level of our graduates' execution skills of any job assigned to him/her independently?	PO3	/		
5	How do you rate our graduates' management skills with other employees?	PO1		/	
6	How do you rate our graduates' coordination level with other employees?	PO5		/	
7	Rate the learning ability of our graduate?	PO1	/		
8	How do you rate our graduates' ability to scan the environment for better decision making?	PO2		/	
9	What is your opinion about our graduates' willingness in learning new ideas/skills?	PO5		/	
10	How do you find the curriculum of our institute with respect to industry requirements?	PO1	/		

Signature: *[Handwritten Signature]*

Company/Employer Name: *Technool*

Student's name: *Monica Maria. G*

USN: *4PS22RA030*



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Employer Survey

SL.NO.	QUESTIONS	PO	High (3)	Moderate (2)	Low (1)
1	Are you happy with the performance of our graduate at your workplace?	PO1	✓		
2	How do you rate our graduates' communication skills with other employees of your company?	PO5		✓	
3	How do rate our graduates' punctuality, sincerity and diligence while performing the job?	PO4	✓		
4	What is the level of our graduates' execution skills of any job assigned to him/her independently?	PO3		✓	
5	How do you rate our graduates' management skills with other employees?	PO1		✓	
6	How do you rate our graduates' coordination level with other employees?	PO5	✓		
7	Rate the learning ability of our graduate?	PO1	✓		
8	How do you rate our graduates' ability to scan the environment for better decision making?	PO2		✓	
9	What is your opinion about our graduates' willingness in learning new ideas/skills?	PO5		✓	
10	How do you find the curriculum of our institute with respect to industry requirements?	PO1	✓		

Signature:

*Sajal*

Company/Employer Name: *Teachnook*

Student's name:

*Sanjana B-K*

USN:

*LPS22BA029*



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**Post Graduate Department of Management Studies**

Employer Survey

SL.NO.	QUESTIONS	PO	High (3)	Moderate (2)	Low (1)
1	Are you happy with the performance of our graduate at your workplace?	PO1	✓		
2	How do you rate our graduates' communication skills with other employees of your company?	PO5		✓	
3	How do rate our graduates' punctuality, sincerity and diligence while performing the job?	PO4	✓		
4	What is the level of our graduates' execution skills of any job assigned to him/her independently?	PO3		✓	
5	How do you rate our graduates' management skills with other employees?	PO1		✓	
6	How do you rate our graduates' coordination level with other employees?	PO5	✓		
7	Rate the learning ability of our graduate?	PO1		✓	
8	How do you rate our graduates' ability to scan the environment for better decision making?	PO2		✓	
9	What is your opinion about our graduates' willingness in learning new ideas/skills?	PO5	✓		
10	How do you find the curriculum of our institute with respect to industry requirements?	PO1		✓	

Signature: *HG*

Company/Employer Name: *Teachnook*

Student's name: *Hemant H. G.*

USN: *HPS22BA021*



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**Post Graduate Department of Management Studies**



Employer Survey

SL.NO.	QUESTIONS	PO	High (3)	Moderate (2)	Low (1)
1	Are you happy with the performance of our graduate at your workplace?	PO1	✓		
2	How do you rate our graduates' communication skills with other employees of your company?	PO5	✓		
3	How do rate our graduates' punctuality, sincerity and diligence while performing the job?	PO4		✓	
4	What is the level of our graduates' execution skills of any job assigned to him/her independently?	PO3		✓	
5	How do you rate our graduates' management skills with other employees?	PO1	✓		
6	How do you rate our graduates' coordination level with other employees?	PO5		✓	
7	Rate the learning ability of our graduate?	PO1	✓		
8	How do you rate our graduates' ability to scan the environment for better decision making?	PO2		✓	
9	What is your opinion about our graduates' willingness in learning new ideas/skills?	PO5		✓	
10	How do you find the curriculum of our institute with respect to industry requirements?	PO1	✓		

Signature:

Company/Employer Name: TEACHNOOK

Student's name:

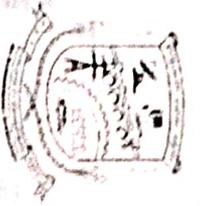
Dashtani S

USN: 4P522BA011

	Students registered for this course	Branch Name	<b>Automobile Engineering</b>	
	<b>16</b>	Semester and Division	<b>7 Semester - A Division</b>	
		BatchNumber		
		Subject Name	<b>TRANSPORT MANAGEMENT AND MOTOR VEHICLE ACT ( P18AU742 )</b>	
	Feedback given by	Feedback Number	<b>1</b>	
	<b>16</b>	Credits	<b>3</b>	
	Name of the Faculty	<b>Dr B Dinesh Prabhu</b>		
<b>Feedback and Points</b>				<b>Average Points per Question</b>
<b>How punctual is the teacher to the classes?</b>				<b>3.88</b>
Never comes on time <b>0 %</b>	Frequently comes late <b>0 %</b>	Mostly on time <b>12.5 %</b>	Always on time <b>87.5 %</b>	
<b>Does the teacher discuss / refer the lesson plan &amp; concepts of PO, PEO, CO in her / his classes?</b>				<b>3.88</b>
Never refers to lesson plan <b>0 %</b>	Occasionally mentions <b>0 %</b>	Frequently refers <b>12.5 %</b>	Regularly refers <b>87.5 %</b>	
<b>Does the teacher come well prepared for the lecture?</b>				<b>3.88</b>
Never <b>0 %</b>	Only a few times <b>0 %</b>	Most of the times <b>12.5 %</b>	Always <b>87.5 %</b>	
<b>How does the teacher explain the subject?</b>				<b>3.88</b>
Inadequate <b>0 %</b>	Satisfactorily well <b>0 %</b>	Adequately well <b>12.5 %</b>	Exceptionally well <b>87.5 %</b>	
<b>How much opportunity does the teacher give for questions and discussions?</b>				<b>3.88</b>
Never <b>0 %</b>	Rarely <b>0 %</b>	Occasional <b>12.5 %</b>	Ample opportunity <b>87.5 %</b>	
<b>How is continuity maintained from class to class while teaching the subject?</b>				<b>3.81</b>
Satisfactory <b>0 %</b>	Average <b>6.25 %</b>	Good <b>6.25 %</b>	Excellent <b>87.5 %</b>	
<b>Does the teacher motivate you to think about the subject content?</b>				<b>3.69</b>
Rarely <b>0 %</b>	Adequately motivating <b>6.25 %</b>	Motivating <b>18.75 %</b>	Highly motivating <b>75 %</b>	
<b>Does the teacher correlate the syllabus completed and the examination pattern in the subject?</b>				<b>3.75</b>
Never <b>0 %</b>	Some times <b>0 %</b>	Many times <b>25 %</b>	Regularly <b>75 %</b>	
<b>How is the language (clarity of communication) of the teacher?</b>				<b>3.81</b>
Poor <b>0 %</b>	Average <b>6.25 %</b>	Good <b>6.25 %</b>	Excellent <b>87.5 %</b>	
<b>How much of the scheduled class time does the teacher use for teaching the relevant / useful topics? (as against deviating to irrelevant matters)</b>				<b>3.81</b>
Below 50 Percent <b>0 %</b>	50 – 80 Percent <b>0 %</b>	80–90 Percent <b>18.75 %</b>	Above 90 Percent <b>81.25 %</b>	
<b>Comment on the teacher's control and command over the class?</b>				<b>3.69</b>
Class always is noisy and chaotic <b>0 %</b>	Frequently class is disordered <b>0 %</b>	Some order in the class <b>31.25 %</b>	Maintains good discipline by her/his presence <b>68.75 %</b>	
<b>Does the teacher help you clarify your doubts inside/ outside the classroom?</b>				<b>3.88</b>
Never <b>0 %</b>	Some times <b>0 %</b>	Most of the times <b>12.5 %</b>	Always <b>87.5 %</b>	
<b>What is the attitude of the teacher towards students?</b>				<b>3.81</b>
Avoids personal contact <b>0 %</b>	Not Considerate and helpful <b>6.25 %</b>	Considerate and helpful <b>6.25 %</b>	Very Considerate and helpful <b>87.5 %</b>	
<b>Are the Assessment methods (e.g. tests, quiz, assignments) fair and implemented in a transparent manner?</b>				<b>3.88</b>
Disagree <b>0 %</b>	Neutral <b>0 %</b>	Agree <b>12.5 %</b>	Strongly Agree <b>87.5 %</b>	
<b>Total Points</b>				<b>53.53</b>
<b>Total Average in Percentage</b>				<b>95.59 %</b>

	Students registered for this course	Branch Name	Automobile Engineering	
		Semester and Division	6 Semester - A Division	
		BatchNumber	1	
	13	Subject Name	Skill Oriented Laboratory – II ( P21AUL606 )	
		Feedback Number	1	
	Feedback given by	Credits	1	
6	Name of the Faculty	Dr B Dinesh Prabhu		
<b>Feedback and Points</b>				<b>Average Points per Question</b>
<b>Is the Laboratory/Studio Slot being fully utilized for the Conduction of Experiments/ Assignments?</b>				4
Never 0 %	Only a few times 0 %	Most of the times 0 %	Always 100 %	
<b>Does the Supporting/Technical Staff help in Demonstrating the Experiments in Labs?</b>				3.8
Not Applicable 0 %	Only Few Times 0 %	Most of the Times 20 %	Always 80 %	
<b>Does the Teacher assess the Laboratory Journal/Experiments/Drawings in a fair and transparent manner on a regular basis?</b>				4
Never 0 %	Only Few Times 0 %	Most of the Times 0 %	Always 100 %	
<b>What is the Attitude of the Teacher towards Students?</b>				3.8
Avoids Personal Contact 0 %	Not Considerate and not Helpful 0 %	Considerate and Helpful 20 %	Very Considerate and Helpful 80 %	
<b>Are the Laboratory Equipments, Machines, Computers Adequate and in working condition?</b>				3.8
Never 0 %	Only Few Times 0 %	Most of the Times 20 %	Always 80 %	
<b>Are the Experiments/Assignments and related concepts being properly explained and demonstrated by the Teacher?</b>				4
Never 0 %	Only Few Times 0 %	Most of the Times 0 %	Always 100 %	
<b>Are all the Experiments/Assignments prescribed in the Syllabus fully covered by the Teacher?</b>				3.8
Below 50% Covered 0 %	50–80% Covered 0 %	80–90% Covered 20 %	Above 90% Covered 80 %	
<b>Total Points</b>				<b>27.2</b>
<b>Total Average in Percentage</b>				<b>97.14 %</b>

	Students registered for this course	Branch Name	<b>Automobile Engineering</b>	
		Semester and Division	<b>6 Semester - A Division</b>	
		BatchNumber		
	<b>13</b>	Subject Name	<b>Automotive Fuels And Combustion ( P21AU6021 )</b>	
		Feedback Number	<b>1</b>	
	Feedback given by	Credits	<b>3</b>	
<b>5</b>	Name of the Faculty	<b>Dr B Dinesh Prabhu</b>		
<b>Feedback and Points</b>				<b>Average Points per Question</b>
<b>How punctual is the teacher to the classes?</b>				<b>4</b>
Never comes on time <b>0 %</b>	Frequently comes late <b>0 %</b>	Mostly on time <b>0 %</b>	Always on time <b>100 %</b>	
<b>Does the teacher discuss / refer the lesson plan &amp; concepts of PO, PEO, CO in her / his classes?</b>				<b>3.8</b>
Never refers to lesson plan <b>0 %</b>	Occasionally mentions <b>0 %</b>	Frequently refers <b>20 %</b>	Regularly refers <b>80 %</b>	
<b>Does the teacher come well prepared for the lecture?</b>				<b>4</b>
Never <b>0 %</b>	Only a few times <b>0 %</b>	Most of the times <b>0 %</b>	Always <b>100 %</b>	
<b>How does the teacher explain the subject?</b>				<b>3.8</b>
Inadequate <b>0 %</b>	Satisfactorily well <b>0 %</b>	Adequately well <b>20 %</b>	Exceptionally well <b>80 %</b>	
<b>How much opportunity does the teacher give for questions and discussions?</b>				<b>3.8</b>
Never <b>0 %</b>	Rarely <b>0 %</b>	Occasional <b>20 %</b>	Ample opportunity <b>80 %</b>	
<b>How is continuity maintained from class to class while teaching the subject?</b>				<b>4</b>
Satisfactory <b>0 %</b>	Average <b>0 %</b>	Good <b>0 %</b>	Excellent <b>100 %</b>	
<b>Does the teacher motivate you to think about the subject content?</b>				<b>3.8</b>
Rarely <b>0 %</b>	Adequately motivating <b>0 %</b>	Motivating <b>20 %</b>	Highly motivating <b>80 %</b>	
<b>Does the teacher correlate the syllabus completed and the examination pattern in the subject?</b>				<b>4</b>
Never <b>0 %</b>	Some times <b>0 %</b>	Many times <b>0 %</b>	Regularly <b>100 %</b>	
<b>How is the language (clarity of communication) of the teacher?</b>				<b>4</b>
Poor <b>0 %</b>	Average <b>0 %</b>	Good <b>0 %</b>	Excellent <b>100 %</b>	
<b>How much of the scheduled class time does the teacher use for teaching the relevant / useful topics? (as against deviating to irrelevant matters)</b>				<b>3.8</b>
Below 50 Percent <b>0 %</b>	50 – 80 Percent <b>0 %</b>	80–90 Percent <b>20 %</b>	Above 90 Percent <b>80 %</b>	
<b>Comment on the teacher's control and command over the class?</b>				<b>3.8</b>
Class always is noisy and chaotic <b>0 %</b>	Frequently class is disordered <b>0 %</b>	Some order in the class <b>20 %</b>	Maintains good discipline by her/ his presence <b>80 %</b>	
<b>Does the teacher help you clarify your doubts inside/ outside the classroom?</b>				<b>3.8</b>
Never <b>0 %</b>	Some times <b>0 %</b>	Most of the times <b>20 %</b>	Always <b>80 %</b>	
<b>What is the attitude of the teacher towards students?</b>				<b>3.8</b>
Avoids personal contact <b>0 %</b>	Not Considerate and helpful <b>0 %</b>	Considerate and helpful <b>20 %</b>	Very Considerate and helpful <b>80 %</b>	
<b>Are the Assessment methods (e.g. tests, quiz, assignments) fair and implemented in a transparent manner?</b>				<b>3.8</b>
Disagree <b>0 %</b>	Neutral <b>0 %</b>	Agree <b>20 %</b>	Strongly Agree <b>80 %</b>	
<b>Total Points</b>				<b>54.2</b>
<b>Total Average in Percentage</b>				<b>96.79 %</b>



# P.E.S. COLLEGE OF ENGINEERING

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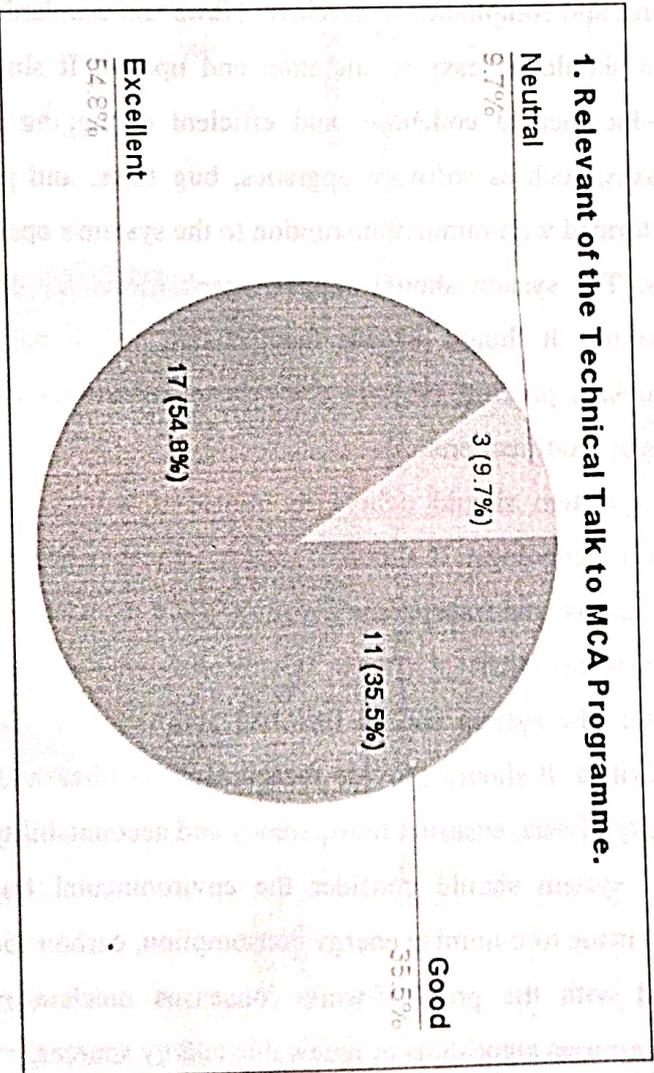
Phone: 08232-220043, 220120 Extn:213 Fax:08232-222075

Department of Master of Computer Applications



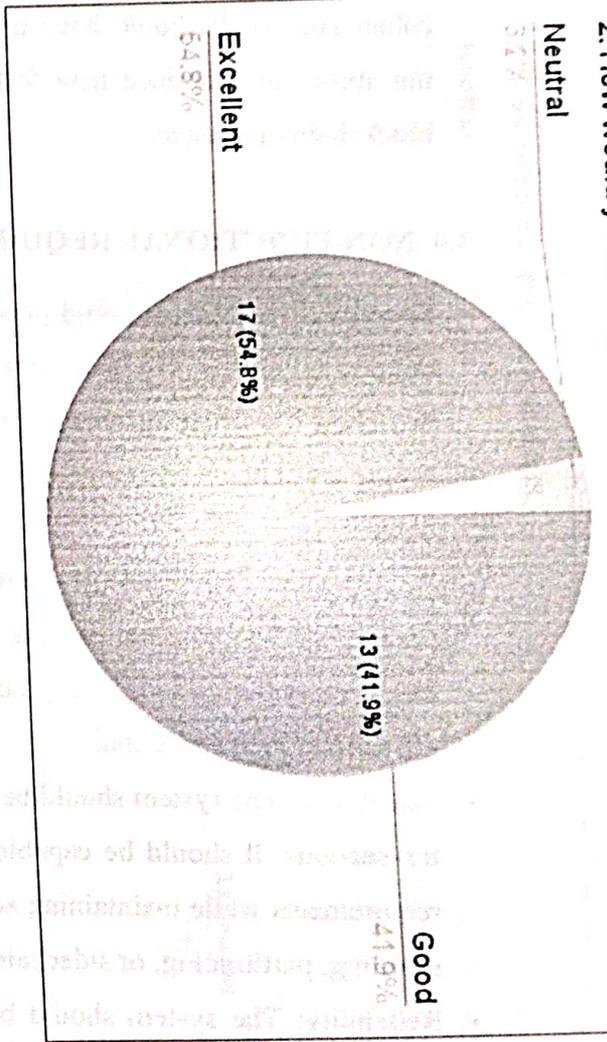
## Student Feedback on Technical Talk

"Exploring Career Paths in Software Testing and Entrepreneurship"

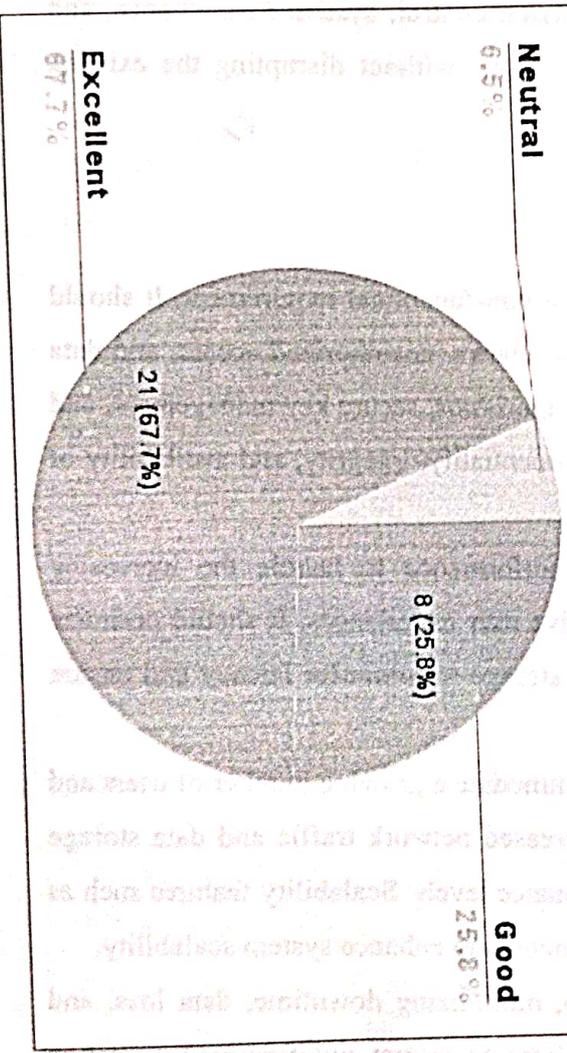


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2. How would you rate the overall contents covered in Technical Talk?

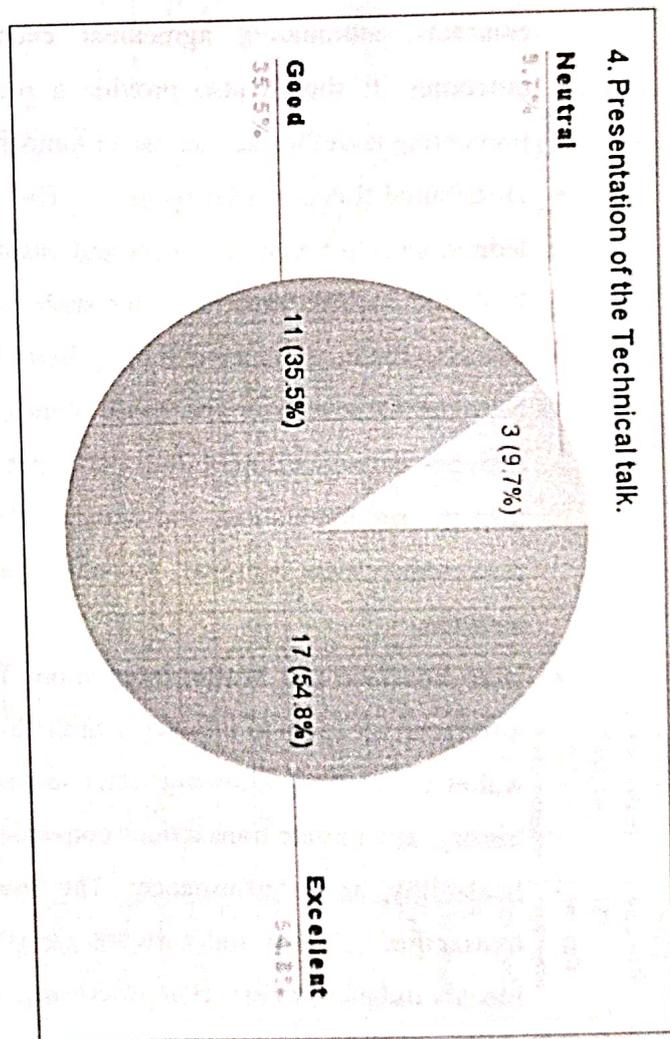


3. How would you rate the content delivery of the resource person?



*Handwritten signature*

#### 4. Presentation of the Technical talk.



*Handwritten signature*

Timestamp	Student Name	Student USN	E-Mail ID	1. Relevant of the Technical Talk to MCA Programme.	2. How would you rate the overall contents covered in Technical Talk?	3. How would you rate the content delivery of the resource person?	4. Presentation of the Technical talk.	Any other suggestions
6-15-2024 13:26:00	KESHAVA GOWDA S P	4PS22MC021	keshavgowdaspp001@gmail.com	Excellent	Excellent	Excellent	Good	
6-15-2024 13:26:55	Nithish E S	4PS22MC030	nithishes17@gmail.com	Excellent	Excellent	Excellent	Good	
6-15-2024 13:27:08	Rakesh A	4PS22MC035	rakeshrak18453@gmail.com	Excellent	Excellent	Excellent	Excellent	No
6-15-2024 13:27:19	Akshay Jk	4ps22mc004	akshayjkgowdal43@gmail.com	Excellent	Excellent	Excellent	Excellent	No
6-15-2024 13:27:25	Sinchana B C	4PS22MC052	sinchanabc58@gmail.com	Excellent	Good	Good	Good	
6-15-2024 13:27:32	Tilak C	4PS22MC054	tilakc3681@gmail.com	Excellent	Excellent	Excellent	Excellent	No
6-15-2024 13:27:45	Allen Isaac J	4PS22MC005	allenisac04062001@gmail.com	Excellent	Excellent	Excellent	Excellent	No
6-15-2024 13:28:19	Shivaprakash A C	4PS22MC048	prakashshiva4366@gmail.com	Excellent	Excellent	Excellent	Excellent	
6-15-2024 13:28:32	Rohan J S	4PS22MC038	rohanjshkar@gmail.com	Excellent	Excellent	Excellent	Excellent	
6-15-2024 13:28:44	Sahana k s	4PS22MC041	sahanaks200116@gmail.com	Good	Good	Good	Good	
6-15-2024 13:28:47	Aishwarya H R	4PS22MC003	aishwaryahr731@gmail.com	Good	Good	Good	Good	
6-15-2024 13:28:52	Vishwas P r	4PS22MC057	vishwasprishwaspr@gmail.com	Excellent	Excellent	Excellent	Excellent	No
6-15-2024 13:28:55	Chandrashekara K S	4PS22MC013	chandugowdal357@gmail.com	Excellent	Excellent	Excellent	Excellent	
6-15-2024 13:29:40	Likhith r shetty	4ps22mc022	likhithrshetty@gmail.com	Excellent	Good	Good	Excellent	
6-15-2024 13:30:02	Pratheep Kumar M	4PS22MC032	pratheepparas123@gmail.com	Excellent	Excellent	Excellent	Excellent	Useful Technical talk session
6-15-2024 13:30:39	Darshan H S	4PS22MC015	darshanhs88@gmail.com	Excellent	Excellent	Excellent	Excellent	
6-15-2024 13:30:41	Harshith Kumar S	4PS22MCA017	kharshith231@gmail.com	Excellent	Excellent	Excellent	Excellent	
6-15-2024 13:32:41	Apoorva S K	4PS22MC009	apoorva20002@gmail.com	Good	Good	Good	Good	
6-15-2024 13:32:44	Abhishhek K S	4PS22MC002	abhishheks615@gmail.com	Good	Good	Good	Good	It's nice
6-15-2024 13:33:36	Monika G	4PS22MC026	monikaggovindraj@gmail.com	Good	Good	Good	Good	
6-15-2024 13:33:36	Shreya PH	4PS22MC050	shreyaperumal1234@gmail.com	Excellent	Excellent	Excellent	Excellent	
6-15-2024 13:46:38	Sahiya Naik	4PS22MC043	sahityanaik03@gmail.com	Excellent	Excellent	Excellent	Excellent	
6-15-2024 13:53:18	Rakshitha PV	4PS22MC037	rakshithapv2002@gmail.com	Excellent	Excellent	Excellent	Excellent	No
6-15-2024 14:00:14	Ananya R Gangalkaar	4PS22MC007	ananyaapushpa8102001@gmail.com	Excellent	Excellent	Excellent	Excellent	Came to know about many new things on regards to technology
6-15-2024 14:23:38	Mohih K	4PS22MC024	appumohith8@gmail.com	Excellent	Excellent	Excellent	Excellent	

6-15-2024 14:47:58	Priyadarshini B S	4PS22MC033	priyadarshini1234@gmail.com	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	It was overall gud Soc analyst roadmap
6-15-2024 14:50:49	Chandan A N	4PS22MC012	chandan07an@gmail.com	Excellent	Excellent	Excellent	Excellent	Excellent	Good	
6-15-2024 14:57:27	Ankitha R	4PS22MC008	15ankitha02@gmail.com	Good	Good	Excellent	Excellent	Excellent	Good	
6-15-2024 16:03:24	Yashaswini K	4PS22MC059	Yashaswini1727@gmail.com	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	No
6-15-2024 16:13:31	Nisha Y	4PS22MC028	Nishagowdal424@gmail.com	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
6-15-2024 18:01:36	Vijay kumar H L	4PS22MC056	vijaykumarhl46@gmail.com	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
6-15-2024 18:27:30	Archana N	4PS22MC010	archanananjendra2112@gmail.com	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
6-15-2024 22:20:21	Ch Soubhagyalakshmi	4PS22MC011	soubhagyalakshmi3636@gmail.com	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
6-15-2024 23:31:29	K Dhruva Somayaji	4PS22MC020	dhruvasomayaji2000@gmail.com	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	

  
**Head of the Department**  
 Department of MCA  
 P.E.S. College of Engineering  
 MANDYA - 571 401,



Post Graduate Department  
of  
Management Studies

GPS Map Center

Mandya, Karnataka, India  
CV91-445, Pes College Campus, Mandya, Karnataka 571401,  
India  
Lat 12.517638° Long 76.880404°  
23/11/24 10:56 AM GMT +05:30

Google

*News*



# P. E. S. COLLEGE OF ENGINEERING

MANDYA -571401. Karnataka.

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Belgaum, Aided by Govt. of Karnataka, Recognized by AICTE, New Delhi.



## Post Graduate Department of Management Studies



### Parent Survey

SL.NO.	QUESTIONS	PO	High (3)	Moderate (2)	Low (1)
1	Is your ward happy completing the MBA program?	P01		✓	
2	To what extent is your ward able to apply the management concepts in day-to-day management of life?	PO1	✓		
3	To what extent the program has improved your wards' communication skill?	PO5		✓	
4	To what extent your ward shows the quality of leadership in situations required?	PO3	✓		
5	To what extent your ward is prepared to become an entrepreneur?	PO3	✓		
6	To what extent your ward is showing confidence to cope up with day-to-day challenges?	PO4		✓	
7	To what extent does your ward reflect the ethical values in his decision related to personal or professional?	PO4	✓		
8	To what extent your ward's knowledge and skills developed during the program is helping him to progress in his career?	PO2	✓		
9	What is the level of confidence to plan, execute and complete the projects assigned to him/her?	PO5		✓	
10	Have you observed your ward interest to involve in societal, environmental, and cultural problems as a matured management professional?	PO5	✓		

Signature: Jayanth Asadhya M

Student's name: Jayanth Asadhya M

USN: HPS22BA022

Signature: Maryanath Asadhya

Parent Name: Maryanath Asadhya

Phone No. 8197 106938



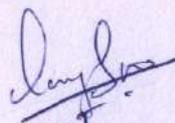
**P. E. S. COLLEGE OF ENGINEERING**  
MANDYA -571401. Karnataka.

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Belgaum, Aided by Govt. of Karnataka, Recognized by AICTE, New Delhi.  
**Post Graduate Department of Management Studies**



Parent Survey

SL.NO.	QUESTIONS	PO	High (3)	Moderate (2)	Low (1)
1	Is your ward happy completing the MBA program?	P01	/		
2	To what extent is your ward able to apply the management concepts in day-to-day management of life?	PO1		/	
3	To what extent the program has improved your wards' communication skill?	PO5	/		
4	To what extent your ward shows the quality of leadership in situations required?	PO3	/	/	
5	To what extent your ward is prepared to become an entrepreneur?	PO3		/	
6	To what extent your ward is showing confidence to cope up with day-to-day challenges?	PO4		/	
7	To what extent does your ward reflect the ethical values in his decision related to personal or professional?	PO4	/		
8	To what extent your ward's knowledge and skills developed during the program is helping him to progress in his career?	PO2	/		
9	What is the level of confidence to plan, execute and complete the projects assigned to him/her?	PO5	/		
10	Have you observed your ward interest to involve in societal, environmental, and cultural problems as a matured management professional?	PO5		/	

Signature:   
Student's name: Nanjunda Swamy BM  
USN: 4PS22BA032

Signature: mahadevaswamy  
Parent Name: Mahadevaswamy  
Phone No. 938076882



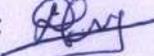
**P. E. S. COLLEGE OF ENGINEERING**  
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Belgaum, Aided by Govt. of Karnataka, Recognized by AICTE, New Delhi.  
**Post Graduate Department of Management Studies**

Parent Survey

SL.NO.	QUESTIONS	PO	High (3)	Moderate (2)	Low (1)
1	Is your ward happy completing the MBA program?	PO1	—		
2	To what extent is your ward able to apply the management concepts in day-to-day management of life?	PO1		—	
3	To what extent the program has improved your wards' communication skill?	PO5		—	
4	To what extent your ward shows the quality of leadership in situations required?	PO3	—		
5	To what extent your ward is prepared to become an entrepreneur?	PO3		—	
6	To what extent your ward is showing confidence to cope up with day-to-day challenges?	PO4		—	
7	To what extent does your ward reflect the ethical values in his decision related to personal or professional?	PO4	—		
8	To what extent your ward's knowledge and skills developed during the program is helping him to progress in his career?	PO2	—		
9	What is the level of confidence to plan, execute and complete the projects assigned to him/her?	PO5	—		
10	Have you observed your ward interest to involve in societal, environmental, and cultural problems as a matured management professional?	PO5		—	

Signature: 

Student's name: Divakar Vinod

USN: HPS22BA016

Signature: 

Parent Name: Gopal

Phone No. 9711032169



**P. E. S. COLLEGE OF ENGINEERING**  
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**Post Graduate Department of Management Studies**



Parent Survey

SL.NO.	QUESTIONS	PO	High (3)	Moderate (2)	Low (1)
1	Is your ward happy completing the MBA program?	PO1	✓		
2	To what extent is your ward able to apply the management concepts in day-to-day management of life?	PO1		✓	
3	To what extent the program has improved your wards' communication skill?	PO5		✓	
4	To what extent your ward shows the quality of leadership in situations required?	PO3	✓		
5	To what extent your ward is prepared to become an entrepreneur?	PO3	✓		
6	To what extent your ward is showing confidence to cope up with day-to-day challenges?	PO4		✓	
7	To what extent does your ward reflect the ethical values in his decision related to personal or professional?	PO4	✓		
8	To what extent your ward's knowledge and skills developed during the program is helping him to progress in his career?	PO2		✓	
9	What is the level of confidence to plan, execute and complete the projects assigned to him/her?	PO5	✓		
10	Have you observed your ward interest to involve in societal, environmental, and cultural problems as a matured management professional?	PO5	✓		

Signature: *Bgonda*

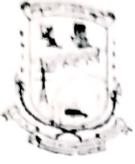
Student's name: *Bharath Gowda B*

USN: *4PSC22BAA05*

Signature: *Byregowda*

Parent Name: *Byregowda*

Phone No. *9113008708*



# Department of Automobile Engineering

P.E.S. College OF Engineering, Mandya - 571401 Karnataka  
( An Autonomous Institution Under VTU, Belagavi)



Date: 16/06/2023

Department of Automobile Engineering

21  
Date: 16/06/2023

To,  
The Dean (Academic),  
PES College of Engineering,  
Mandya.

Respected sir,

**Sub:** Permission to conduct BOS meeting for finalizing the scheme and syllabus of 3<sup>rd</sup> year (NEP 21) scheme regarding.

**Ref:** PES/DEAN-ACAD/2022-23/68

I would like to bring to your kind notice that, BOS meeting for finalizing of scheme and syllabus of 3<sup>rd</sup> year (NEP 21) Automobile Engineering subjects for the **fifth and sixth semester** is scheduled on 01/07/2023 (Saturday) in our department.

The BOS meeting dates have been communicated to the Internal & External members through mail. I request you to kindly accord permission and approval for conduction of BOS meeting & sanction financial assistance (**Remuneration, TA & DA**) on the suggested date. This is for your kind information and needful.

Thanking you

Sincerely

Dr. B Dinesh Prabhu  
Professor & H.O.D.  
Department of Automobile Engineering  
P.E.S. College of Engineering  
MANDYA - 571 401.

**Enclosure:**

1. Board of Studies panel list for AY- 2023-2024.



# Department of Automobile Engineering

P.E.S. College Of Engineering, Mandya - 571401 Karnataka

( An Autonomous Institution Under VTU, Belagavi )



Date: 16/06/2023

## Board of Studies-UG (2022-2024)

### Panel List

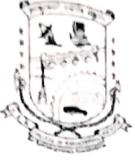
Sl. No	Category	Nomination Of The Committee	Name
1	Head Of The Department	Chairperson	Dr. B Dinesh Prabhu
2	Faculty Members At Different Levels Different Specialization	Members	1. Dr. N Jagadeesh 2. Sr. G D Srikanth 3. Sr. Akshay R N 4. Sr. Anand Raj S
3	Subject Experts From Outside The College Nominated By Academic Council	Member	1. Dr. M.K Ravishankar Professor Dept of Automobile Engineering, MCE Hassan <a href="mailto:mkr@mcehassan.ac.in">mkr@mcehassan.ac.in</a> 9448459766 2. Prof. Nanda kumar M B Associate Professor, Dept of Automobile Engineering, Dayanandangar college of Engineering, K S Layout Bengaluru-78 <a href="mailto:Nandakumar_m@dayanandangar.edu">Nandakumar_m@dayanandangar.edu</a> 9906826039
4	Expert From Outside College Nominated By Vice Chancellor	Member	1. Dr. A N Basavaraja Professor Dept of Automobile Engineering, MCE Hassan <a href="mailto:anb@mcehassan.ac.in">anb@mcehassan.ac.in</a> 9448705712
5	Representative From Industry Corporate Sector/ Allied Area Relating To Placement Nominated By Academic Council	Member	1. Sri. Mohan lyangar, Senior management consultant @Volvo commercial vehicle Ltd, Bangalore. 9591577967 <a href="mailto:mohanyangar2016@gmail.com">mohanyangar2016@gmail.com</a>
6	Post Graduate Meritorious Alumnus Nominated By Principal	Member	1. Prof. Gopal Reddy Asst. Professor Dept. Mechatronics Engg Acharya Institute of technology Bangalore. 9945255577 <a href="mailto:Gopalreddykonkal@gmail.com">Gopalreddykonkal@gmail.com</a>

Dr. B Dinesh Prabhu

HoD

Professor

Department of Automobile Engineering  
P.E.S. College of Engineering  
MANDYA - 571 401.



## Department of Automobile Engineering

P.E.S. College OF Engineering, Mandya – 571401 Karnataka  
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Date :20/06/2023

### Circular

The faculty members of Automobile Engineering Department are hereby informed to attend the meeting on **21/06/2023 at 10.30 pm**, in HoD chamber.

**Agenda:** To discuss on NEP-21 Scheme and Syllabus of 5<sup>th</sup> and 6<sup>th</sup> Semester.

**Dr. B Dinesh Prabhu,**  
Head & Associate Professor  
Dept. of Automobile Engg.

**Professor & H.O.D.**  
Department of Automobile Engineering  
P.E.S. College of Engineering  
MANDYA - 571 401.

Prof. K.R. R

Dr. N.J. R

Prof. G.D.S. S

Prof. R.N.A. S

Prof. A.R.S. S



Department of Automobile Engineering  
P.E.S. College OF Engineering, Mandya – 571401 Karnataka  
( An Autonomous Institution Under VTU, Belagavi)



Department of Automobile Engineering Date: 01/07/2023

List of panel members attended the BOS meeting on 01-07-2023.

No. 28  
Date 3/7/2023

Sl. No	Category	Nomination Of The Committee	Name	Signature
1	Head Of The Department	Chairperson	Dr. B Dinesh Prabhu	
2	Faculty Members At Different Levels Different Specialization	Members	1. Dr. N Jagadeesh	
			2. Sri. G D Srikanth	
			3. Sri. Akshay R N	
			4. Sri. Anand Raj S	
3	Subject Experts From Outside The College Nominated By Academic Council	Member	1. Dr. M.K Ravishankar Professor Dept of Automobile Engineering ,MCE Hassan <a href="mailto:mkr@mcehassan.ac.in">mkr@mcehassan.ac.in</a> 9448459066	 01-07-2023
			2. Prof. Nanda kumar M B Associate Professor ,Dept of Automobile Engineering , Dayanandasagar college of Engineering ,K S Layout Bengaluru-78 <a href="mailto:Nandakumarau@dayanandasagar.edu">Nandakumarau@dayanandasagar.edu</a> 9900826039	ABSENT
4	Expert From Outside College Nominated By Vice Chancellor	Member	1. Dr. A N Basavaraju Professor Dept of Automobile Engineering ,MCE Hassan <a href="mailto:anb@mcehassan.ac.in">anb@mcehassan.ac.in</a> 9448705712	
5	Representative From Industry Corporate Sector/ Allied Area Relating To Placement Nominated By Academic Council	Member	1. Sri. Mohan Iyengar, Seniour management consultant @Volvo commercial vehicle Ltd, Bangalore. 9591577967 <a href="mailto:mohanriyengar2016@gmail.com">mohanriyengar2016@gmail.com</a>	ABSENT
6	Post Graduate Meritorious Alumnus Nominated By Principal	Member	1. Prof. Gopal Reddy Asst. Professor Dept. Mechatronics Engg Acharya Institute of technology Bangalore. 9945255577 <a href="mailto:Gopalreddykonkal@gmail.com">Gopalreddykonkal@gmail.com</a>	ABSENT

Dr. B Dinesh Prabhu

HOD

Professor & H.O.D.  
Department of Automobile Engineering  
P.E.S. College of Engineering  
MANDYA - 571 401.



Date:01/07/2023

**Proceeding of the BOS meeting Held on 01/07/2023.**

**Agenda:**

Finalizing the syllabus for V and VI semester for NEP-21 Scheme for AY-2022-2023.

**Members of BOS present,**

**Internal BOS Members:**

1. Dr. B.Dinesh Prabhu
2. Dr. N Jagadeesha
3. Sri. Srikanth G D
4. Sri. Akshay R N
5. Sri. Anand Raj S

**External BOS Members:**

1. **Dr. A N Basavaraju.**  
Professor,  
Dept. of Automobile Engineering,  
MCE Hassan.
2. **Dr. M.K Ravishankar.**  
Professor,  
Dept. of Automobile Engineering,  
MCE Hassan.

The meeting started with introducing of all panel members, greeting and welcome speech by Dr. B Dinesh Prabhu, BOS chair person and Head of Automobile Engineering

**The following recommendations /Suggestion were made based on the discussion from BOS panel members.**

- 1.To conduct 04 hours of class for numerical subjects having 03 credits that is 02 hrs for theory and 02 hrs for tutorial hence L:T:P:H could be 2:2:0:4
- 2.To verify the course articulation matrix assigned with blooms levels and review the same.
- 3.To rearrange the CO's for subjects according to the blooms level in ascending order.
- 4.In the subject of **Battery Technology and Charging Infrastructure [P21AU6034]** to include content related to electric vehicles in module 1.
5. In the subject of **Electric Vehicles, Battery Technology and Charging Infrastructure [P21AU6052]**, review the course content.

The BOS meeting was concluded with vote of thanks by HOD of Automobile Engineering Department.



HOD -

3/7/23

Department of Automobile Engineering  
P.E.S. College of Engineering  
MANDYA - 571401.

No: PES/ACAD-DEAN/2023-2024/ 89

Date: 26<sup>th</sup> March 2024

**CIRCULAR**

**To: All Undergraduate Head's of Department/ Chairpersons**

**Subject: Board of Studies (BOS) meeting and Constitution of BOS Committee.**

This letter serves to inform all Undergraduate Head's of Department/Chairpersons that, a Board of Studies (BOS) meeting has to be conducted **on or before 15<sup>th</sup> May 2024**, to identify the courses and to formulate the syllabi for the **B.E- Fourth year P21Scheme ( i.e 7<sup>th</sup> & 8<sup>th</sup> Semester)** for the Academic year 2024-2025. **Specifically excluding programs in Artificial Intelligence & Machine Learning (AI&ML), Computer Science & Business Systems (CSBS) and Data Science.**

The chairpersons of the BOS, with prior intimation to Dean Academic Office, shall conduct the BOS meeting and submit the minutes of meeting along with feedback form received from stakeholders **[both in print and digital format], on or before 31<sup>th</sup> May-2024** for further approval in the Academic Council meeting.

Furthermore, it is important to note that the existing Board of Studies (BOS) Committee, is serving from August- 2021 to July-2024 (3 years) is due to complete its tenure on 31<sup>st</sup> July 2024.

In continuation to this, in compliance with the Board of studies format specified by UGC autonomous regulations and endorsed by VTU autonomous regulation, **all Head's of Department/Chairpersons requested to identify and propose the stakeholders for the constitution of the Board of Studies (BOS) committee for the period from August 2024 to July 2027 (3 years).** Please ensure that these nominations are submitted to the undersigned before **31<sup>st</sup> May 2024, excluding the AI&ML Programme.**

This step is important for maintaining a diverse pool of expertise necessary for effective decision making in Academic affairs. Your cooperation in ensuring the success of these initiatives is highly appreciated. For any further clarification or assistance, please feel free to contact the Dean-Academic office.

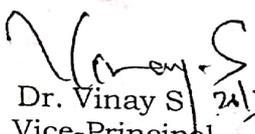
~~AT~~ 27/03/24

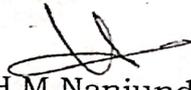
Note 1: with reference to Circular No: PES/DEAN-ACAD/2022-2023/68 dated 3<sup>RD</sup> JUNE 2023, the scheme structure for B.E-P22 scheme (III to VIII semester) will remain consistent with B.E-P21 Scheme (III to VIII semester). Consequently, the fitment of Courses and syllabus for B.E(III to VIII semester) will be same for both B.E P21 Scheme and P22scheme.

**Note 2:**

- Kindly send the BOS scheduled meeting date to the Dean-Academic office, two week prior to make arrangement for TA/DA and sitting charges.
- The digital copy of the P-21 Scheme and Syllabus template is mailed to Chairpersons ID.

  
Dr. Dinesh Prabhu  
Dean-Academic  
PESCE, Mandya  
Dean (Academic)  
P.E.S.C.E., MANDYA.

  
Dr. Vinay S  
Vice-Principal  
PESCE, Mandya  
Vice Principal  
P.E.S. College of Engg. Mandya

  
Dr. H M Nanjundaswamy  
Principal  
PESCE, Mandya  
PRINCIPAL  
PES College of Engineering  
Mandya - 571 401.

**Copy to:**

- All UG Heads of Department/chairperson, PESCE
- Controller of Examination, for Kind Information, PESCE
- IQAC Co-Ordinator, for kind Information, PESCE
- Dean-III, for kind Information, PESCE
- Dean Research, for kind Information, PESCE

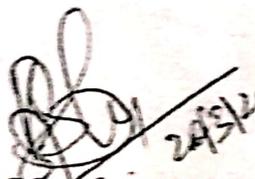
# P.E.S COLLEGE OF ENGINEERING, MANDYA - 571 401

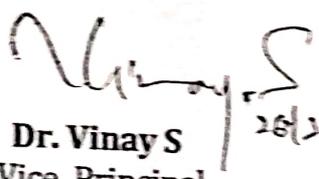
(An Autonomous Institution Affiliated to VTU, Belagavi)

Department of \_\_\_\_\_

## Board of Studies - UG (2024 - 27)

Sl. No.	Category	Nomination of the committee	Name
1.	Head of the Department	Chair Person	Dr. N. J.
2.	Faculty members of the department at different levels with different specialization having minimum experience of 5 years	Members (Max of 5)	Dr. S. D. P. Prof. G. D. S. Prof. R. N. A. Prof. A. K. S.
3.	Subject experts from outside the college nominated by academic Council	Members (Max of 2)	Dr. A. N. B. Dr. M. K. R.
4.	Expert from outside college Nominated by Vice chancellor	Propose 6 members where the University nominates any ONE member	Dr. K. P. R. Dr. J. J. J. Dr. N. V. S. Prof. V. J. J.
5.	Representative from Industry Corporate Sector/ Allied area relating to placement nominated by Academic council	One member	Dr. H. M. N. J. S. Senior Engineer - Design Skansay Technologies
6.	Post Graduate Meritorious alumnus Nominated by Principal	One member	

  
Dr. B Dinesh Prabhu  
Dean Academic  
Dean (Academic)  
P.E.S.C.E., MANDYA.

  
Dr. Vinay S  
Vice Principal  
Vice Principal  
P.E.S. College of Engg. Mandya

  
Dr. H M Nanjundaswamy  
Principal PRINCIPAL  
P.E.S. College of Engineering  
Mandya - 571 401.



# Department of Automobile Engineering

P.E.S. College OF Engineering, Mandya – 571401 Karnataka  
( An Autonomous Institution Under VTU, Belagavi)



No. .... 161

Date: 15/05/2024

To,  
The Dean (Academic),  
PES College of Engineering,  
Mandya.

Respected sir,

**Sub:** Permission for conducting BOS meeting to finalizing the scheme and syllabus for final year (P-21 Scheme) 2024-25 regarding.

Sir, I would like to inform you that, BOS meeting to finalize the scheme and syllabus of Automobile Engineering subjects for the Final year NEP-P21 scheme, is scheduled to be held on 20/05/2024 (Monday) in our department.

I request you to kindly give permission and approval of suggested date for conduct the same.

Thanking you

Encl; BoS Panel list

Yours sincerely

  
15/05/24

(Dr. N Jagadeesh)

Professor & H.O.D.  
Department of Automobile Engineering  
P.E.S. College of Engineering  
MANDYA - 571 401.



# Department of Automobile Engineering

P.E.S. College OF Engineering, Mandya – 571401 Karnataka

( An Autonomous Institution Under VTU, Belagavi)



Date:15/05/2024

## Board of Studies-UG (2024-2025)

### PANEL LIST

Sl. No	Category	Nomination Of The Committee	Name
1	Head Of The Department	Chairperson	<b>Dr. N Jagadeesh</b>
2	Faculty Members At Different Levels Different Specialization	Members	<b>1. Dr. B Dinesh Prabhu</b> <b>2. Sri. G D Srikanth</b> <b>3. Sri. Akshay R N</b> <b>4. Sri. Anand Raj S</b>
3	Subject Experts From Outside The College Nominated By Academic Council	Members	<b>1. Dr. M K Ravishankar</b> Professor, Dept of Automobile Engineering, MCE, Hassan <a href="mailto:mkr@mcehassan.ac.in">mkr@mcehassan.ac.in</a> 9448459066 <b>2. Dr. Nanda kumar M B</b> Associate Professor, Dept of Automobile Engineering, Dayanandasagar college of Engineering, K S Layout, Bengaluru-78 <a href="mailto:nandakumar-au@dayanandasagar.edu">nandakumar-au@dayanandasagar.edu</a> 9900826039
4	Expert From Outside College Nominated By Vice Chancellor	Member	<b>Dr. A N Basavaraju</b> Assistant Training & Placement Officer, MCE, Hassan <a href="mailto:anb@mcehassan.ac.in">anb@mcehassan.ac.in</a> 9448705712
5	Representative From Industry Corporate Sector/ Allied Area Relating To Placement Nominated By Academic Council	Member	<b>Sri. Mohan Iyengar,</b> Senior management consultant @Volvo commercial vehicle Ltd, B'lore 9591577967 <a href="mailto:mohanriyengar2016@gmail.com">mohanriyengar2016@gmail.com</a>
6	Post Graduate Meritorious Alumnus Nominated By Principal	Member	<b>Sri. Gopal Reddy</b> Asst. Professor, Dept of Mechatronics Engg., Acharya Institute of Technology, Bengaluru 9945255577 <a href="mailto:Gopalreddykonkal@gmail.com">Gopalreddykonkal@gmail.com</a>

Dr. N Jagadeesh

HoD,

Professor & H.O.D.

Department of Automobile Engineering  
P.E.S. College of Engineering  
MANDYA - 571 401.



## Department of Automobile Engineering

P.E.S. College OF Engineering, Mandya – 571401 Karnataka  
( An Autonomous Institution Under VTU, Belagavi)



Date:17/05/2024

### Circular

All the BOS members of Automobile Engineering Department are here by informed to attend the BOS meeting at 10.00 am , in HoD chamber on 20/05/2024.

**Agenda:** To finalize the scheme and syllabus of 7<sup>th</sup> and 8<sup>th</sup> semester of (P21 Scheme).

i) Dr. BDP

ii) Prof.GDS

iii)Prof.RNA

iv)Prof.ARS

HoD

Professor & H.O.D.

Department of Automobile Engineering  
P.E.S. College of Engineering  
MANDYA - 571 401.



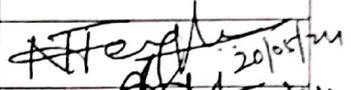
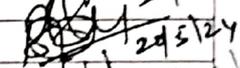
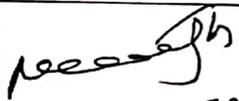
# Department of Automobile Engineering

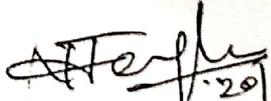
P.E.S. College OF Engineering, Mandya – 571401 Karnataka  
( An Autonomous Institution Under VTU, Belagavi)



Date:20/05/2024

## List of panel members attended the BOS meeting on 20-05-2024.

Sl. No	Category	Nomination Of The Committee	Name	Signature
1	Head Of The Department	Chairperson	Dr. N Jagadeesh	 20/05/24
2	Faculty Members At Different Levels Different Specialization	Members	1. Dr. B Dinesh Prabhu	 20/05/24
			2. Sri. G D Srikanth	 20/05/24
			3. Sri. Akshay R N	ABSENT
			4. Sri. Anand Raj S	
3	Subject Experts From Outside The College Nominated By Academic Council	Member	1. Dr. M.K Ravishankar Professor Dept of Automobile Engineering ,MCE Hassan <a href="mailto:inkravishankargowda@gmail.com">inkravishankargowda@gmail.com</a> 9448459066	
			2. Dr. Nanda kumar M B Associate Professor ,Dept of Automobile Engineering , Dayanandasagar college of Engineering ,K S Layout Bengaluru-78 <a href="mailto:nandakumarau@dayanandasagar.edu">nandakumarau@dayanandasagar.edu</a> 9900826039	 20.05.2024
4	Expert From Outside College Nominated By Vice Chancellor	Member	Dr. A N Basavaraju Assistant Training & Placement Officer, MCE Hassan <a href="mailto:anb@mcehassan.ac.in">anb@mcehassan.ac.in</a> 9448705712	 20.05.2024
5	Representative From Industry Corporate Sector/ Allied Area Relating To Placement Nominated By Academic Council	Member	Sri. Mohan Iyengar, Seniour management consultant @Volvo commercial vehicle Ltd, Bangalore. 9591577967 <a href="mailto:mohanriyengar2016@gmail.com">mohanriyengar2016@gmail.com</a>	← ABSENT →
6	Post Graduate Meritorious Alumnus Nominated By Principal	Member	Sri. Gopal Reddy Asst. Professor, Dept of Mechatronics Engg., Acharya Institute of Technology, Bengaluru 9945255577 <a href="mailto:Gopalreddykonkal@gmail.com">Gopalreddykonkal@gmail.com</a>	← ABSENT →

  
20/05/24

Dr. N Jagadeesh

Professor & H.O.D.  
Department of Automobile Engineering  
P.E.S. College of Engineering  
MANDYA - 571 401.



# Department of Automobile Engineering

P.E.S. College OF Engineering, Mandya – 571401 Karnataka  
( An Autonomous Institution Under VTU, Belagavi)



Proceeding of the BOS meeting held on 20/05/2024.

## Agenda:

Finalizing the syllabus for VII and VIII semester for NEP-21 Scheme for AY-2024-2025.

## Members of BOS present,

### Internal BOS Members:

1. Dr. B.Dinesh Prabhu
2. Sri. Srikanth G D
3. Sri. Anand Raj S

### External BOS Members:

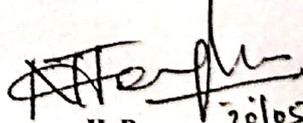
1. **Dr. A N Basavaraju.**  
Assistant Training & Placement  
officer , MCE Hassan.
2. **Dr. M.K Ravishankar.**  
Professor,  
Dept. of Automobile  
Engineering, MCE Hassan.
3. **Dr. Nanda kumar M B.**  
Associate Professor,  
Dept. of Automobile Engineering.  
DSCE Bangalore .

The meeting started with introduction of present BOS members, greeting and welcome speech by Dr. N Jagadeesh, BOS chair person and Head of Automobile Engineering department.

The following recommendations /suggestion were made based on the discussion from BOS panel members. Overview of scheme for VII and VIII semester of NEP-P21 scheme.

1. **Dr.M.K Ravishankar**, suggested to change the word from tire to tyre and keep the same word in the whole syllabus.
2. **Dr.A.N Basavaraju**, suggested to keep the blooms level up to L3 for all theory subjects instead of L4.
3. **Dr. Nanda Kumar M B**, suggested to add government policies towards electric vehicle, motor characteristics and fuel cell comparative analysis for the subject **Electric and Hybrid Vehicles [P21AU701]** and for the subject **Automotive Air Pollution and Control [P21AU7023]** add modifications made in BS-VI.
4. **Dr. Nanda Kumar M B**, also suggested to change the **unit 5** title for the subject **Automotive Embedded System [P21AU7032]** as both course title and unit title are same.
5. The introduction of new course **Vehicle Diagnostics (Integrated Subject) (P21AU704)** to utilize the automobile laboratory effectively.

The BOS meeting was concluded with vote of thanks by HOD of Automobile Engineering Department.

  
HoD 20/05/2024

Professor & H.O.D.  
Department of Automobile Engineering  
P.E.S. College of Engineering  
MANDYA - 571 401.



# Department of Automobile Engineering

P.E.S. College OF Engineering, Mandya – 571401 Karnataka  
( An Autonomous Institution Under VTU, Belagavi)



Date : 21/05/2024

## Actions taken for the BOS meeting held on 20/05/2024.

1. Dr.M K Ravishankar, suggested to change the word from tire to tyre and keep the same word in the whole syllabus.

Action Taken: we change the word from tire to tyre and keep the same word in the whole syllabus.

2. Dr.A N Basavaraju, suggested to keep the blooms level up to L3 for all theory subjects instead of L4.

Action Taken: The blooms level up to L3 for all theory subjects instead of L4, modification were made in the theory subjects.

3. Dr. Nanda Kumar M B, suggested to add government policies towards electric vehicle, motor characteristics and fuel cell comparative analysis for the **subject Electric and Hybrid Vehicle [P21AU701]** and the BS VI modifications were added to subject **Automotive Air Pollution and Control [P21AU7023]**.

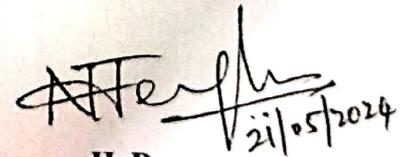
Action Taken: The mentioned suggestions and polices were added in self study component.

4. Dr. Nanda Kumar M B, also suggested to change the **unit 5** title for the subject **Automotive Embedded System [P21AU7032]** as both course title and unit title are same.

Action Taken: The **unit V** title was changed from automotive embedded system to Vehicle communication system.

5. The introduction of new course **Vehicle Diagnostics (P21AU704)** to utilize the automobile lab effectively.

Action Taken: The course was approved and proposed curriculum were accepted and approved.

  
21/05/2024

HoD

Professor & H.O.D.  
Department of Automobile Engineering  
P.E.S. College of Engineering  
MANDYA - 571 401.



## Department of Automobile Engineering

P.E.S. College OF Engineering, Mandya – 571401 Karnataka

( An Autonomous Institution Under VTU, Belagavi)



No. 164

Date: 23/05/2024

To,  
The Dean (Academic),  
PESCE Mandya.

Subject : Regarding Board of Studies meeting and Constitution of BOS Committee.

Ref No: PES/ACAD-DEAN/2023-2024/89 dated on 26/03/2024.

Hereby, I am sending the P-21 Scheme and Syllabus of final year , along with BOS meeting proceeding and action taken also Constitution of BOS Committee for AY-2024-2027 . This is for your needful information and action.

**Enclosures: copy of**

1. P-21 Scheme and Syllabus of final year.
2. BOS meeting Proceedings and Action taken.
3. Constitution of BOS Committee for AY 2024-2027.

23/05/2024

HoD  
Professor & H.O.D.  
Department of Automobile Engineering  
P.E.S. College of Engineering  
MANDYA - 571 401,



# Department of Automobile Engineering

P.E.S. College OF Engineering, Mandya – 571401 Karnataka  
( An Autonomous Institution Under VTU, Belagavi)



Date :23/05/2024

## Board of Studies-UG (2024-2027)

### Panel List

Sl. No	Category	Nomination Of The Committee	Name
1	Head of the Department	Chair Person	<b>Dr. N. Jagadeesh</b>
2	Faculty members of the department at different levels with different specialization having minimum experience of 5 years	Members [Max of 5]	<b>1. Dr. B. Dinesh Prabhu</b> <b>2. Prof. G. D. Srikanth</b> <b>3. Prof. Akshay. R. N.</b> <b>4. Prof. Anand Raj. S.</b>
3	Subject experts from outside the college nominated By Academic Council	Members [Max of 2]	<b>Dr. A. N. Basavaraju</b> Assistant Training & Placement Officer, Malnad College of Engineering, Hassan. <b>E-mail: <a href="mailto:anb@mcehassan.ac.in">anb@mcehassan.ac.in</a></b> <b>Mob: 9448705712.</b> <b>Dr. Jayasheel Kumar. K. A.</b> HOD I/C AU, Department of Automobile Engineering, New Horizon College of Engineering, Outer Ring Road, Marathahalli, Bengaluru- 560103 <b>E-mail: <a href="mailto:hod_automobile@newhorizonindia.edu">hod_automobile@newhorizonindia.edu</a></b> <b>Mob: 9986995105</b>
4	Expert from outside college nominated By Vice Chancellor	Proposed Members	<b>1. Dr. Naveena. B. E.</b> Associate Professor, Dept. of Automobile Engg, Dayananda Sagar College of Engineering, K.S.Layout, Bengaluru-78 <b>Mob: 9164945151</b> <b>E-mail: <a href="mailto:naveena-au@dayanandasagar.edu">naveena-au@dayanandasagar.edu</a></b> <b>2. Dr. Nanda kumar. M. B.</b> Associate Professor, Dept. of Automobile Engg, Dayananda Sagar College of Engineering, K S Layout, Bengaluru-78 <b>Mob: 9900826039</b> <b>E-mail: <a href="mailto:nandakumarau@dayanandasagar.edu">nandakumarau@dayanandasagar.edu</a></b> <b>3. Prof. H. S. Lokesh</b> Assistant Professor, Dept. of Automobile Engg. Malnad College of Engineering, Hassan-573202. <b>Mob: 9449429092</b> <b>E-mail : <a href="mailto:hsl@mcehassan.ac.in">hsl@mcehassan.ac.in</a></b> <b>4. Prof. Vijay. R</b> Assistant Professor, Dept. of Automobile Engg. Malnad College of Engineering, Hassan-573202. <b>Mob: 9900269498</b> <b>E-mail: <a href="mailto:rv@mcehassan.ac.in">rv@mcehassan.ac.in</a></b>



# Department of Automobile Engineering

P.E.S. College OF Engineering, Mandya – 571401 Karnataka  
( An Autonomous Institution Under VTU, Belagavi)



			<p><b>5. Dr. M. K. Ravishankar</b> Professor, Dept of Automobile Engineering, Malnad College of Engineering, Hassan-573202 <b>Mob:</b> 9448459066 <b>E-mail:</b> <a href="mailto:mkravishankargowda@gmail.com">mkravishankargowda@gmail.com</a></p> <p><b>6. Dr. K. P. Ravi Kumar</b> Professor, Dept of Automobile Engineering, Malnad College of Engineering, Hassan-573202 <b>Mob:</b> 7892301196 <b>E-mail:</b> <a href="mailto:kpr@mcehassan.ac.in">kpr@mcehassan.ac.in</a></p>
5	Representative From Industry Corporate Sector/ Allied Area relating to placement nominated By Academic Council	Member	<p><b>Sri. Chethan Somashekar</b> Senior Engineer - Design Skanray Technologies, Hebbal, Mysuru-16. <b>E-mail:</b> <a href="mailto:chetan.somashekar@hotmail.com">chetan.somashekar@hotmail.com</a> <b>Mob:</b> 8884888996</p>
6	Post Graduate Meritorious Alumnus Nominated By Principal	Member	<p><b>Dr. Madhusudan B M</b> Asst. Professor, Dept. of Mechanical Engg, National Institute of Engineering, South Campus Mysuru-570008. <b>E-mail:</b> <a href="mailto:madhusudanbm@nie.ac.in">madhusudanbm@nie.ac.in</a> <b>Mob:</b> 8904217812</p>

  
23/05/2024  
Head of the Department

Asso Professor & H.O.D.  
Department of Automobile Engineering  
P.E.S. College of Engineering  
MANDYA - 571 401.



**P.E.S COLLEGE OF ENGINEERING, MANDYA - 571 401**  
(An Autonomous Institution Affiliated to VTU, Belagavi)

Ref.No.: PESCE/DEAN-ACAD/2023-2024/122

Date: 19<sup>th</sup> July 2024

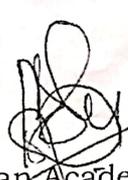
**CIRCULAR**

**Subject:** Replacement of Open Elective Subject with Professional Core Course in Fifth semester of P22 Scheme. Reg

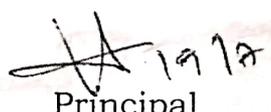
As per the feedback from the Chairman's Board of Studies and the meeting of Heads of Departments (HODs) on 16th July 2024, it was unanimously decided to replace the **Open Elective subject** with a **Professional Core Course** in the Fifth Semester of the P22 Scheme starting from the academic year 2024-2025.

Sl.No	P22Scheme (Existing Course)	P22Scheme (Replaced Course)
1.	Open Elective (P22XXO505X)	Professional Core Course (P22XX505)

All HODs are requested to bring this modification to the notice of all faculty members and **ensure its incorporation into the syllabus.**

  
19/7/24  
Dean Academic  
Dean (Academic)  
P.E.S.C.E., MANDYA.

  
19/7  
Vice Principal  
Vice Principal  
P.E.S. College of Engg. Mandya

  
19/7  
Principal  
PRINCIPAL  
PES College of Engineering  
Mandya - 571 401.

TO  
Circulate to  
Faculties  
19/7/24

Pr. G.D.S. &

Pr. R.N.A. &

Pr. A.R.S. &



## Department of Automobile Engineering

P.E.S. College OF Engineering, Mandya – 571401 Karnataka  
( An Autonomous Institution Under VTU, Belagavi)



Date :23/07/2024

### Circular

The faculty members of Automobile Engineering department are hereby informed to attend BOS (Internal) meeting on 24/07/2024 at 12.15 pm in HOD chamber.

**Agenda :** To replace the open elective subject with a professional core course in the V<sup>th</sup> semester of the P22 scheme.

i) Dr. BDP

ii) Sri. GDS

iii) Sri. RNA

iv) Sri. ARS

23/07/24

HoD

Professor & H.O.D.  
Department of Automobile Engineering  
P.E.S. College of Engineering  
MANDYA - 571 401.



## Department of Automobile Engineering

P.E.S. College OF Engineering, Mandya – 571401 Karnataka  
( An Autonomous Institution Under VTU, Belagavi)



Department of Automobile Engineering

No. 198

Date: 25/07/2024

To,  
The Dean (Academic),  
PESCE Mandya.

Subject : Regarding internal Board of Studies meeting conducted on 24/07/2024 .

Ref No: PES/ACAD-DEAN/2023-2024/122 dated on 19/07/2024.

Hereby, I am sending the P-22 Scheme and Syllabus of third year , along with BOS meeting proceeding. This is for your needful information and action.

**Enclosures: copy of**

1.P-22 Scheme and Syllabus of third year.

  
25/07/24

HoD  
Professor & H.O.D.  
Department of Automobile Engineering  
P.E.S. College of Engineering  
MANDYA - 571 401.



# Department of Automobile Engineering

P.E.S. College OF Engineering, Mandya – 571401 Karnataka  
( An Autonomous Institution Under VTU, Belagavi)



Date:24/07/2024

List of internal panel members attended the BOS meeting on 24-07-2024.

Sl. No	Category	Nomination Of The Committee	Name	Signature
1	Head Of The Department	Chairperson	Dr. N Jagadeesh	
2	Faculty Members At Different Levels Different Specialization	Members	1. Dr. B Dinesh Prabhu	
			2. Sri. G D Srikanth	
			3. Sri. Akshay R N	
			4. Sri. Anand Raj S	

Dr. N Jagadeesh

Prof. HOD & H.O.D.  
Department of Automobile Engineering  
P.E.S. College of Engineering  
MANDYA - 571 401.



# Department of Automobile Engineering

P.E.S. College OF Engineering, Mandya – 571401 Karnataka  
( An Autonomous Institution Under VTU, Belagavi)



Date:25/07/2024

## Proceeding of the Internal BOS meeting held on 24/07/2024.

### Agenda:

Replacement of open elective subject with professional core course in 5<sup>th</sup> semester of P22 Scheme..

### Members of BOS present,

### Internal BOS Members:

1. Dr. B.Dinesh Prabhu
2. Sri. Srikanth G D
3. Sri. Akshay R N
4. Sri. Anand Raj S

The meeting started with introduction of Internal BOS members, greeting and welcome speech by **Dr. N Jagadeesh**, BOS chair person and Head of Automobile Engineering Department.

**The following recommendations /Suggestion were made based on the discussion from BOS panel members.**

1. The open elective subject (**P22AUO5051**) offered during 5<sup>th</sup> semester in P22 scheme was excluded and a new professional core (**P22AU505**) subject was added in its place. The new core subject added was **Automotive Electricals and Electronics**.
- 2.The members went through the syllabus of **Automotive Electricals and Electronics** and suggested to reduce the syllabus of **module 1**.
3. The members suggested to replace the open elective offered in 6<sup>th</sup> semester with new open elective subject with title **Automotive Engines and Systems (P22AUO6051)**.

The BOS meeting was concluded with vote of thanks by HOD of Automobile Engineering Department.

HoD

Professor & H.O.D.  
Department of Automobile Engineering  
P.E.S. College of Engineering  
MANDYA - 571 401.

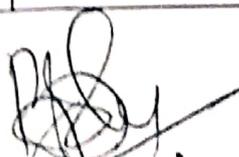


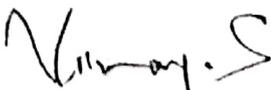
# P.E.S COLLEGE OF ENGINEERING, MANDYA - 571 401

(An Autonomous Institution Affiliated to VTU, Belagavi)

Department of Automobile Engineering  
Board of Studies - UG (2024 - 27)  
[As per VTU Statutes on Autonomous Colleges (Amended) 2018]

Sl. No	Category	Nomination of the Committee	Name
1	Head of the Department	Chair Person	Dr. N Jagadeesh Associate Professor
2	Faculty members of the department at different levels with different specialization having minimum experience of 5 years	Members	Dr. B Dinesh Prabhu, Professor Prof. G D Srikanth, Assistant Professor Prof. Akshay R N, Assistant Professor Prof. Anand Raj S, Assistant Professor
3	Subject experts from outside the college nominated By Academic Council	Members	Dr. A N Basavaraju Assistant Training & Placement Officer, Malnad College of Engineering, Hassan. E-mail: <a href="mailto:anb@mcehassan.ac.in">anb@mcehassan.ac.in</a> Mob: 9448705712. Dr. Jayasheel Kumar K A HOD I/C AU, Department of Automobile Engineering, New Horizon College of Engineering, Outer Ring Road, Marathahalli, Bengaluru- 560103 Email: <a href="mailto:hod_automobile@newhorizonindia.edu">hod_automobile@newhorizonindia.edu</a> Mob: 9986995105
4	Expert from outside college nominated By Vice Chancellor	VTU Nominee	Dr. Nanda kumar M B Associate Professor, Dept. of Automobile Engg, Dayananda Sagar College of Engineering, K S Layout, Bengaluru-78 Mob: 9900826039 E-mail: <a href="mailto:nandakumarau@dayanandasagar.edu">nandakumarau@dayanandasagar.edu</a>
5	Representative From Industry Corporate Sector/ Allied Area relating to placement nominated By Academic Council	Member	Sri. Chethan Somashekar Senior Engineer - Design Skanray Technologies, Hebbal, Mysuru-16. E-mail: <a href="mailto:chetan.somashekar@hotmail.com">chetan.somashekar@hotmail.com</a> Mob: 8884888996
6	Post Graduate Meritorious Alumnus Nominated By Principal	Member	Dr. Madhusudan B M Asst. Professor, Dept. of Mechanical Engg, National Institute of Engineering, South Campus Mysuru-570008. E-mail: <a href="mailto:madhusudanbm@nie.ac.in">madhusudanbm@nie.ac.in</a> Mob: 8904217812

  
Dr. B Dinesh Prabhu  
Dean Academic  
Dean (Academic)  
P.E.S.C.E., MANDYA.

  
Dr. Vinay S  
Vice Principal  
P.E.S. College of Engineering, Mandya

  
Dr. H M Nanjundaswamy  
Principal  
P.E.S. College of Engineering



**ಪಿ.ಇ.ಎಸ್. ಕಾಲೇಜ್ ಆಫ್ ಇಂಜಿನಿಯರಿಂಗ್**

**ಮಂಡ್ಯ - 571401 ಕರ್ನಾಟಕ.**

(ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾನಿಲಯದ ಅಡಿಯಲ್ಲಿನ ಸ್ವಾಯತ್ತ ಸಂಸ್ಥೆ, ಕರ್ನಾಟಕ ರಾಜ್ಯ ಅನುದಾನಿತ ಸಂಸ್ಥೆ ಮತ್ತು ಯು.ಪಿ. ವಿಭಾಗಗಳು ಎನ್.ಬಿ.ಎ.ಯ ಮಾನ್ಯತೆ ಪಡೆದಿರುತ್ತದೆ)

**P.E.S. COLLEGE OF ENGINEERING**

**MANDYA - 571 401 KARNATAKA**

(An Autonomous Institution under Visvesvaraya Technological University, Belagavi Aided by the Govt. of Karnataka and U.G. Programmes are Accredited By National Board of Accreditation )

Ref No: PESCE/DEAN-ACAD/2024-25/8/1

Date: 3<sup>rd</sup> October, 2024

To,

**Dr. N Jagadeesha**  
Associate Professor & Head,  
Dept. of Automobile Engineering,  
PES College of Engineering,  
Mandya.

Dear Sir,

**Sub:** Nomination to the **Board of studies (Dept. of Automobile Engineering)** of PES College of Engineering, Mandya (Autonomous) for the term August, 2024 to July, 2027 (3 Years) – Reg.

With reference to the above, we are pleased to nominate you as a **Chairperson** to the **Board of studies (Dept. of Automobile Engineering)** of PES College of Engineering, Mandya (Autonomous) for the term August, 2024 to July, 2027 (3 Years).

You are requested to conduct the meetings of the **Board of studies (Dept. of Automobile Engineering)** with the Board of Studies panel members as and when required.

**Functions of Board of Studies:**

1. Prepare syllabi for various courses keeping in view the objectives of the College, interest of the stakeholders and State / National requirements for consideration and approval of the Academic Council.
2. Suggest methodologies for innovative teaching, learning and evaluation techniques.
3. Coordinate research, teaching, extension and other academic activities in the Department and
4. Any other function that may be assigned by the Academic Council.

After every meeting, you are requested to submit the proceedings of the meeting to the Dean-Academic office.

Thanking you,

  
**Dr. B Dinesh Prabhu**  
Dean Academic

  
**Dr. Vinay S**  
Vice Principal

  
**Dr. H M Nanjundaswamy**  
Principal

**Enclosure: Board of studies (Dept. of Automobile Engineering) Members Panel List for the term August, 2024 to July, 2027 (3 Years)**

Phone : +918232-220043, 238683, 238042.

website : www.pescemandya.org, Email : principal@pesce.ac.in



**ಪಿ.ಇ.ಎಸ್. ಕಾಲೇಜ್ ಆಫ್ ಇಂಜಿನಿಯರಿಂಗ್**

**ಮಂಡ್ಯ - 571401 ಕರ್ನಾಟಕ.**

(ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾನಿಲಯದ ಅಡಿಯಲ್ಲಿನ ಸ್ವಾಯತ್ತ ಸಂಸ್ಥೆ, ಕರ್ನಾಟಕ ರಾಜ್ಯ ಅನುದಾನಿತ ಸಂಸ್ಥೆ ಮತ್ತು ಯು.ಪಿ. ವಿಭಾಗಗಳು ಎನ್.ಬಿ.ಎ.ಯ ಮಾನ್ಯತೆ ಪಡೆದಿರುತ್ತದೆ)

**P.E.S. COLLEGE OF ENGINEERING**

**MANDYA - 571 401 KARNATAKA**

(An Autonomous Institution under Visvesvaraya Technological University, Belagavi Aided by the Govt. of Karnataka and U.G. Programmes are Accredited By National Board of Accreditation )

Ref No: PESCE/DEAN-ACAD/2024-25/8/3

Date: 3<sup>rd</sup> October, 2024

To,

**Dr. B. Dinesh Prabhu**  
Professor,  
Dept. of Automobile Engineering,  
PES College of Engineering,  
Mandya.

Dear Sir,

**Sub:** Nomination to the **Board of studies (Dept. of Automobile Engineering)** of PES College of Engineering, Mandya (Autonomous) for the term August, 2024 to July, 2027 (3 Years) – Reg.

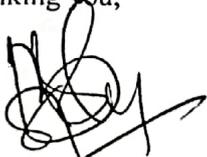
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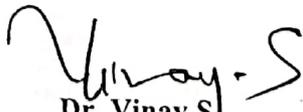
You are requested to attend the meetings of the **Board of studies (Dept. of Automobile Engineering)** as and when requested by the Board of studies – Chairperson.

**Functions of Board of Studies:**

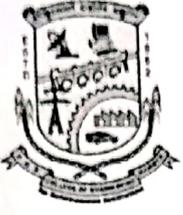
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Thanking you,

  
**Dr. B Dinesh Prabhu**  
Dean Academic

  
**Dr. Vinay S**  
Vice Principal

  
**Dr. H M Nanjundaswamy**  
Principal



ಪಿ.ಇ.ಎಸ್. ಕಾಲೇಜ್ ಆಫ್ ಇಂಜಿನಿಯರಿಂಗ್

ಮಂಡ್ಯ - 571401 ಕರ್ನಾಟಕ.

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Ref No: PESCE/DEAN-ACAD/2024-25/8/4

Date: 3<sup>rd</sup> October, 2024

To,

**Prof. G. D. Srikanth**  
Assistant professor,  
Dept. of Automobile Engineering,  
PES College of Engineering,  
Mandya.

Dear Sir,

**Sub:** Nomination to the Board of studies (Dept. of Automobile Engineering) of PES College of Engineering, Mandya (Autonomous) for the term August, 2024 to July, 2027 (3 Years) – Reg.

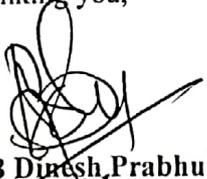
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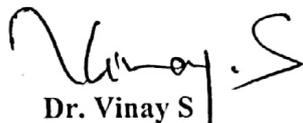
You are requested to attend the meetings of the Board of studies (Dept. of Automobile Engineering) as and when requested by the Board of studies – Chairperson.

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Dean Academic

  
Dr. Vinay S  
Vice Principal

  
Dr. H M Nanjundaswamy  
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Phone : +918232-220043, 238683, 238042.

website : www.pescemandya.org, Email : principal@pesce.ac.in



ಪಿ.ಇ.ಎಸ್. ಕಾಲೇಜ್ ಆಫ್ ಇಂಜಿನಿಯರಿಂಗ್

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Ref No: PESCE/DEAN-ACAD/2024-25/8/5

Date: 3<sup>rd</sup> October, 2024

To,

Prof. Akshay R N  
Assistant Professor,  
Dept. of Automobile Engineering,  
PES College of Engineering,  
Mandya.

Dear Sir,

**Sub:** Nomination to the Board of studies (Dept. of Automobile Engineering) of PES College of Engineering, Mandya (Autonomous) for the term August, 2024 to July, 2027 (3 Years) – Reg.

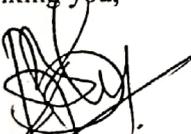
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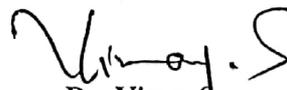
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Thanking you,

  
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Dean Academic

  
Dr. Vinay S  
Vice Principal

  
Dr. H M Nanjundaswamy  
Principal



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Ref No: PESCE/DEAN-ACAD/2024-25/8/6

Date: 3<sup>rd</sup> October, 2024

To,

**Prof. Anand Raj S**  
Assistant Professor,  
Dept. of Automobile Engg.,  
PES College of Engineering,  
Mandya

Dear Sir,

**Sub:** Nomination to the **Board of studies (Dept. of Automobile Engineering)** of PES College of Engineering, Mandya (Autonomous) for the term August, 2024 to July, 2027 (3 Years) – Reg.

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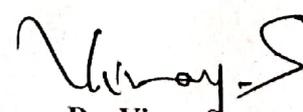
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Thanking you,

  
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Dean Academic

  
Dr. Vinay S  
Vice Principal

  
Dr. H M Nanjundaswamy  
Principal



# DEPARTMENT OF CIVIL ENGINEERING

(Accredited by National Board of Accreditation)

## P.E.S. COLLEGE OF ENGINEERING

Accredited By National Assessment and Accreditation Council (NAAC) with B++grade  
(An Autonomous Institution under Visvesvaraya Technological University, Belgavi Aided by the Govt. of Karnataka)



MANDYA - 571 401 KARNATAKA

Ph : 08232-220043, Ext. 231/23, Fax No. 08232-222075, Mob. 9844248272

Ref :

No: PESCE/CV/BOS//2023-24/ 91



Date.....

12-04-2024

### BOS UG MEETING INTIMATION

A meeting of Members of Board of Studies (U.G) in Civil Engineering is convened on 07-05-2024 (Tuesday) at 10.30 AM in the chamber of HOD Civil Engineering Department P.E.S. College of Engineering Mandya. You are requested to make it convenient to attend the meeting positively. Your presence will be highly appreciated to take guidance/suggestions in framing syllabus of VII and VIII semester (NEP 21 Scheme) for the Academic year 2024-2025.

#### BOS Members:

Dr. H.S. Narasimhan	MCE, Hassan
Dr. Balaji N.C	NIE, Mysuru
Dr. S. M. Shivanagendra	ITL, Madras
Mr. Nagesh P	Ultratech Cements Limited
Mr Sharath H.P.	SJCE, Mysuru
Prof. R.K. Kumarswamy	PESCE, Mandya
Dr. D.S. Sandeep Kumar	PESCE, Mandya
Dr. Shivaraj G Nayak	PESCE, Mandya
Dr. S. Poorna Prajna	PESCE, Mandya

#### Agenda:

To finalize syllabus of VII and VIII semester B.E. for P21 Scheme.

Copy for information:

1. Dean (Academic)
2. BOS Members
3. Account Section

BoS-Chairman

Dr. H.C. Chowdegowda  
ASSOCIATE PROFESSOR AND HEAD  
Department of Civil Engineering  
P.E.S. College of Engineering  
Mandya - 571 401

# DEPARTMENT OF CIVIL ENGINEERING

(Accredited by National Board of Accreditation)



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No: PESCE/CV/BOS//2023-24/ 91



Date.....

12-04-2024

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#### BOS Members:

✓ Dr. H.S. Narasimhan	MCE, Hassan
Dr. Balaji N.C	NIE, Mysuru
Dr. S. M. Shivanagendra	IIT, Madras
✓ Mr. Nagesh P	Ultratech Cements Limited
Mr Sharath H.P.	SJCE, Mysuru
✓ Prof. R.K. Kumarswamy	PESCE, Mandya
Dr. D.S. Sandeep Kumar	PESCE, Mandya
Dr. Shivaraj G Nayak	PESCE, Mandya
✓ Dr. S. Poorna Prajna	PESCE, Mandya

#### Agenda:

To finalize syllabus of VII and VIII semester B.E. for P21 Scheme.

Copy for information:

1. Dean (Academic)
2. BOS Members
3. Account Section

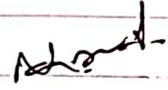
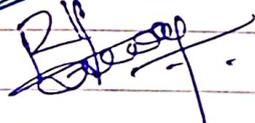
  
BoS- Chairman  
Dr. H.C. Chowdegowda  
ASSOCIATE PROFESSOR AND HEAD  
Department of Civil Engineering  
P.E.S. College of Engineering  
Mandya - 571 401

Date: 07-05-2024

BOS (UG) : VII and VIII semester - P21 scheme

BOS (UG) meeting is held in the chamber of  
HOD - Civil Engg., PESCE MandyaAgenda: To finalise syllabus of VII and VIII semester  
P21 scheme - B.E. Civil Engg. for the following  
courses.

- 1) To finalise syllabus of VII and VIII semester B.E for  
NEP - P21 scheme.
  - 2) To finalise syllabus of V and VI semester B.E for  
NEP - P22 scheme.
  - 3) Scrutinized the shortlisted NPTEL Courses for 8 Sem self-study course (P21CV801)
  - 4) Scrutinized the shortlisted courses for minor degree under VTU.
- BOS members present:

- 1) Dr. H.S. Narasimhan 
- 2) Dr. Balaji . N.C. 
- 3) Dr. S.M. Shiranagendra : (joined via google meet)
- 4) Mr. Nagesh. Puttarawamy 
- 5) Mr. Shivalth H P 
- 6) Prof. R.k. Kumarswamy 
- 7) Dr. D. S. Sandeep Kumar 
- 8) Dr. Shivaraj G. Nayak SCL
- 9) Dr. S. Purna Pragna 

10) Thejas. K.U (4PS20CV096) Thejas.K.U

11) Sahana (4PS20CV077) Sahana.

# DEPARTMENT OF CIVIL ENGINEERING

(Accredited by National Board of Accreditation)

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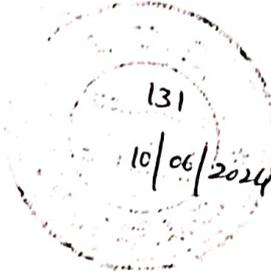
Ref: PESCE/CV/2023-24/131

Date.....

10.06.2024

To,

Dean – (Academic)  
P.E.S. College of Engineering  
Mandya – 571 401



Respected sir,

Subject: Finalization of syllabus for VII and VIII semester NEP P21 scheme for AY 2024-25 – reg.

Ref.: No.: PES/ACAD-DEAN/2023-2024/89, Dated: 26<sup>th</sup> March 2024.

With reference to the above cited subject, the U.G. BoS meeting was held at Civil Engineering Department on 07-05-2024 for framing and finalization of VII and VIII semester syllabus for NEP P21 scheme. The suggestions from the BoS members were drawn and syllabus finalization was done, according to present industry requirement.

The scheme and syllabus for B.E. P22 scheme (V and VI semester) is retained same as B.E. P21 scheme (V and VI semester).

The soft copy of the scheme and syllabus (P21 scheme – VII and VIII semester) is sent to deanhead@pesce.ac.in

I would request your kind self to consider the same.

Respectfully yours,

Yours faithfully,

Dr. H.C. Gowda

ASSOCIATE PROFESSOR AND

Department of Civil Engineering

P.E.S. College of Engineering

Mandya - 571 401

Attachment

1. Proceedings of BoS meeting.
2. Feedback from stakeholders.

## Proceedings of BoS Meeting (U.G., Civil Engineering)

The meeting was held at Civil Engineering Department, P.E.S.C.E, Mandya on 07<sup>th</sup> May 2024.

### BoS Members present:

1. Dr. H. S. Narasimhan	MCE, Hassan
2. Dr. Balaji N C	NIE, Mysuru
3. Dr. S M Shivanagendra	IIT, Madras (Attended online via Google meet)
4. Mr. Nagesh P	Ultratech Cements Limited
5. Mr. Sharath H P	SJCE, Mysuru
6. Dr. H. C. Chowdegowda	CED, PESCE, Mandya
7. Dr. D. S. Sandeep Kumar	CED, PESCE, Mandya
8. Prof. R. K. Kumarswamy	CED, PESCE, Mandya
9. Dr. S. Poorna Prajna	CED, PESCE, Mandya
10. Thejas K. U. (4PS20CV096)	U.G. Student, CED, PESCE, Mandya
11. Sahana (4PS20CV077)	U.G. Student, CED, PESCE, Mandya

### Minutes of meeting of BoS (U.G.) held on 07-05-2024:

Dr. H.C. Chowdegowda welcomed the members and briefed about aim, advantages and other issues of attaining BoS meeting. The following suggestions were made by the above panel members in framing the NEP Scheme of VII and VIII semester.

#### Mr. Nagesh P suggested including:

- 1) To mention IS requirements instead of IS recommendations in unit-I (P21CV701).
- 2) Analysis of bus bay in unit-III (P21CV7022).
- 3) Bengaluru Traffic Police Management Software and Command Centre in Self-study component in unit-V (P21CV7022).
- 4) Green highway in Self-study component in unit-IV (P21CV7022).

#### Dr. H S Narasimhan suggested including:

- 1) To mention the parameters for Hydraulic Design for linear waterway (P21CV7021).
- 2) Design of box culvert (single cell) in unit-IV (P21CV7021).
- 3) Structural detailing of box and pipe culvert in Self-Study Component for unit-IV (P21CV7021).
- 4) N.B.C. 2016 for PSC course (P21CV701)
- 5) Quantity of slab requirement (P21CV704)

**Dr. Balaji suggested including:**

- 1) Protective filter graded filter in unit-II (P21CV7023).
- 2) Counter fort retaining wall to retaining wall with moment redistribution in unit-II (P21CV7031).
- 3) Rename unit-II as "Redistribution of Moments" (P21CV7031).

**Dr. S M Shivanagendra suggested including:**

- 1) Metro projects and large scale housing projects as EIA case study (P21CV7024).
- 2) To modify the course name of P21CV704 as "Quantity Estimation and Contract Management", since survey is not reflecting the course contents.

**Dr. H. C. Chowdegowda suggested including:**

- 1) Evaluation and interpretation of audit data in unit-V (P21CV7024)
- 2) Policies and regulatory frame works in unit-III (P21CV7024).

**Dr. D. S. Sandeep Kumar suggested including:**

- 1) Sheaths and ducts in Self-study component in unit-II (P21CV701).
- 2) Zoning concept in Unit-II (P21CV7032).

**Prof. R. K. Kumarswamy suggested including:**

- 1) Foundation treatment for structures in expansive soil in unit-IV (P21CV7033).
- 2) Tail water curve and jump water curve in unit-IV (P21CV7034).
- 3) Simple design problems on Ogee spillway in unit-V (P21CV7034).

**Mr Sharath H P suggested including:**

- 1) Effect of ground water table on bearing capacity in unit-V (P21CV7023).
- 2) Uses of flow nets in unit-II (P21CV7023).

**Dr. S. Poorna Prajna suggested including:**

- 1) Level of service in unit-II (P21CV7022).
- 2) VMS under traffic signs in unit-III (P21CV7022).
- 3) Intermodal transportation in Unit-V (P21CV7032).

**Thejas K. U. (4PS20CV096) suggested:**

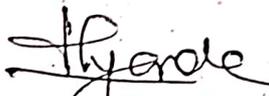
- 1) To have more exposure to practical experience
- 2) Software training as per market requirements.
- 3) Include green building

**Sahana (4PS20CV077) suggested including:**

- 1) Accident spot analysis, analysis of bus bay (P21CV7022)
- 2) Public participation in EIA (P21CV7024).

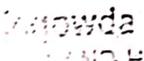
After long deliberations and discussions, following resolutions were made,

1. As per NEP scheme, the syllabus for various subjects were altered with improvisations.
2. Suggested to include application of AI & ML in Civil Engg.
3. Finalised the syllabus of VII and VIII semester NEP P21 scheme.
4. Scrutinized the shortlisted NPTEL courses for VIII semester Self-Study Course (P21CV801).
5. Scrutinized the shortlisted courses for Minor degree under VTU.

  
Associate Prof. & Head  
Chairman, BoS (UG)

Copy to:

1. Dean Academics, PESCE, Mandya
2. BoS Members

Dr.   
ASSOCIATE PROFESSOR AND HEAD  
Department of Civil Engineering  
PESCE, Mandya  
Mandya - 571 401



DEPARTMENT OF CIVIL ENGINEERING  
P.E.S COLLEGE OF ENGINEERING  
MANDYA - 571 401, Karnataka  
(An Autonomous Institution under VTU Belagavi)

BOS meeting held on 07-05-2024 at HOD chamber Civil Engineering Department

Name of the BOS members (with affiliation):

Dr. H.S. Narasimhan  
Dept. of Civil Engineering,  
Malnad College of Engineering  
Hassan - 573202

Observations:

I have observed the syllabi for all the 7<sup>th</sup> semester, the ~~for~~ core and professional education. The flow was good & few suggestions are mentioned below.

Recommendations:

1. Please include the N.B.C 2016 for PSC course
2. Estimation & quantity surveying include the quantity of slab reinforcement
3. Check the question paper pattern in quantity surveying & estimation unit I is compulsory no choice
4. Advanced structural analysis question paper pattern
5. Advanced structural analysis Redistribution moment topic numerically only two span & symbolic.

BOS-Member

Dr. H.S. Narasimhan  
ASSOCIATE BOS-CHAIRMAN AND HEAD  
Department of Civil Engineering  
P.E.S. College of Engineering  
Mandya - 571 401



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BOS meeting held on 07-05-2024 at HOD chamber Civil Engineering Department

Name of the BOS members (with affiliation):

Dr. N.C. Balaji

Associate Professor, Dept. of Civil Engg.

The National Institute of Engineering, Mysuru

Observations:

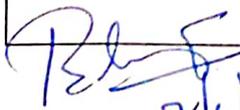
Few short fall of the contents in the syllabus were observed and the same has been highlighted in the BOS meeting in the new subjects presented.

—X—

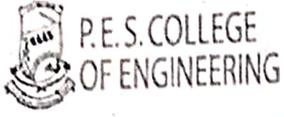
Recommendations:

Corrections for addition and deletion of new contents in the subjects discussed were recommended and the same has been incorporated by the BOS committee

—X—

  
BOS-Member 2/6/2024

Dr. H.C. Chowdegowda  
ASSOCIATE PROFESSOR AND HEAD  
Depart BOS-Chairman Engineering  
P.E.S. College of Engineering  
Mandya - 571 401



Dr. POORNA PRAJNA S &lt;poornaprajnas@pesce.ac.in&gt;

## Final year BE Civil Engineering syllabus (P21 Scheme for both 7th and 8th Semester))

Wed, May 29, 2024 at 9:48 PM

Shiva Nagendra S M &lt;snagendra@iitm.ac.in&gt;

To: HOD Civil &lt;hodce@pesce.ac.in&gt;

Cc: balajinc@nie.ac.in, sharathhp@sjce.ac.in, Kumara Swamy <poornarama68@gmail.com>, Sandeep Gowda <sandeepmandya@gmail.com>, DSS <sandeepkumards@pesce.ac.in>, RKK <kumarswamrk@pesce.ac.in>, SHIVARAJ NAYAK <shivaraj.msrit@gmail.com>, SGN <shivarajnayak@pesce.ac.in>, HCC <chowdegowdahc@pesce.ac.in>, Chowde Gowda <hcgowda26@gmail.com>, hsn@mcehassan.ac.in, Thejas K U <thejasku2002@gmail.com>, SAHANA <sahana63636@gmail.com>, nagesh@nageshp.com, S Poorna Prajna <aviprajna26@gmail.com>, SPP <poornaprajnas@pesce.ac.in>

Dear Sir,

Apologies for the delay in sending following observations on the Final year BE Civil Engineering syllabus:

1. Course learning objectives may be consistent for all the courses. In some course, more than 4 and in some case less than 3.
2. Title of Sed VII (P21CV704) may be changed to Quantity Estimation and Contract Management. Survey is not reflecting the course contents.
3. In EIA, following topics may be covered environmental systems and interaction, international treaties, local/regional/global environmental issues, rapid EIA and comprehensive EIA, fault free analysis, consequence analysis, socioeconomic aspects, life cycle assessment, cost benefit analysis life cycle assessment, resource balance, energy balance and management review.
4. Metro projects and large scale housing projects may be included as EIA case study.

Overall, the contents for each course are well prepared.

Thank you and with best regards

Shiva Nagendra

Shiva Nagendra, S.M., Ph.D. | शिवा नगेंद्रा, एस.एम., Ph.D.

Professor | प्राध्यापक

Department of Civil Engineering | सिविल अभियांत्रिकी विभाग

Indian Institute of Technology Madras | भारतीय प्रौद्योगिकी संस्थान, मद्रास

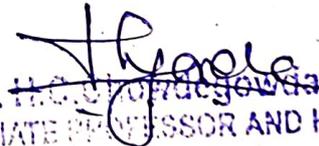
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INDIA | भारत

Telephone : 91-44-22574290 (O) | दूरभाष : ९१-४४-२२५७४२९०

Fax: 91-44-22574252 | फॅक्स: ९१-४४-२२५७४२५२

Alternate email | वैकल्पिक ईमेल: shivanagendra@yahoo.com

  
Dr. H.C. Chowde Gowda  
ASSOCIATE PROFESSOR AND HEAD  
Department of Civil Engineering  
P.E.S. College of Engineering  
Mandya - 571 401

**From:** HOD <hodce@pesce.ac.in>

**To:** balajinc <balajinc@nie.ac.in>; sharathhp <sharathhp@sjce.ac.in>; Kumara <poornarama68@gmail.com>; Sandeep <sandeepmandya@gmail.com>; DSS <sandeepkumards@pesce.ac.in>; RKK <kumarswamrk@pesce.ac.in>; SHIVARAJ <shivaraj.msrit@gmail.com>; SGN <shivarajnayak@pesce.ac.in>; HCC <chowdegowdahc@pesce.ac.in>; Chowde <hcgowda26@gmail.com>; hsn <hsn@mcehassan.ac.in>; Thejas <thejasku2002@gmail.com>; SAHANA <sahana63636@gmail.com>; snagendra <snagendra@iitm.ac.in>; nagesh <nagesh@nageshp.com>; S Poorna <aviprajna26@gmail.com>; SPP <poornaprajnas@pesce.ac.in>



DEPARTMENT OF CIVIL ENGINEERING  
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MANDYA - 571 401, Karnataka  
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BOS meeting held on 07-05-2024 at HOD chamber Civil Engineering Department

Name of the BOS members (with affiliation):

NAGESH PUTTA SWAMY  
consultant, Trainer Mentor  
former DGM - ultraTech cement  
Concrete Technologist,

Observations:

Most Requirements are met.  
Some important changes I have given in my  
letter

Recommendations:

- Keep close tab on Sequencing of Topic flow along one subject so that first to construct will come first-
- Many Patented Systems available in market which has superseded many conventional systems hence introduce students to that.
- Extracting & writing Specification from Product information sheet, technical Data sheet.

  
BOS-Member

Dr. H. A. Showdegowda  
ASSOCIATE PROFESSOR AND HEAD  
BOS-Chairman  
Department of Engineering  
P.E.S. College of Engineering  
Mandya - 571 401



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BOS meeting held on 07-05-2024 at HOD chamber Civil Engineering Department

Name of the BOS members (with affiliation):

SHARATH.H.P

Assistant Professor.

Department of Civil Engineering, STCE, JSS STU. Mysore.

Observations:

- A few observations were made on the overall syllabus of VII & VIII sem subjects.
- In Advanced design of Structure it was observed that the overall content of the syllabus is huge.
- In Advanced foundation design the overall content was observed to be higher level.

Recommendations:

- It was recommended to introduce few topics on recent design which generally required at the industry level.
- The student can be involved on few topics of AI & ML.
- Application of AI & ML can be incorporated in design of Structures / Any topics of Civil Engineering.

  
BOS Member

Dr. R.C. Chowdegowda  
ASSOCIATE PROFESSOR AND HEAD  
BOS - Civil Engineering  
Department of Civil Engineering  
P.E.S. College of Engineering  
Mandya - 571 401



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BOS meeting held on 07-05-2024 at HOD chamber Civil Engineering Department

Name of the BOS members (with affiliation):

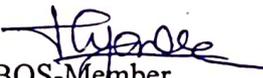
Dr. H.C. Chowdegowda  
professor and HOD  
dept. of civil Engineering  
PES. college of Engineering  
Mandya - 571401

Observations:

I have observed that all syllabus of 7th Sem of core subjects and professional Elective choosen was good flows and very Informative to civil Engineering Students.

Recommendations:

- 1) Evaluation and Interpretation of Audit data in unit-V - (P21CV7024)
- 2) Policies and Regulatory frame works in unit-III (P21CV7024)

  
BOS-Member

Dr. H.C. Chowdegowda  
ASSOCIATE PROFESSOR AND HEAD  
Department of Engineering  
P.E.S. College of Engineering  
Mandya - 571 401



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BOS meeting held on 07-05-2024 at HOD chamber Civil Engineering Department

Name of the BOS members (with affiliation):

Dr. D.S. Sandeep Kumar

Associate Professor

Dept. of Civil Engg.

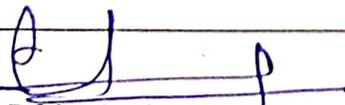
P.E.S College of Engg. Mandya - 571401

Observations:

The Syllabus for all the Courses were framed well as per the Curriculum and present industrial needs

Recommendations:

- 1) Sheaths and ducts in PSC Subject
- 2) Include zoning concept in urban-transport planning

  
BOS-Member

Dr. H.C. Chowdegowda  
ASSOCIATE PROFESSOR AND HEAD  
Department of Civil Engineering  
P.E.S. College of Engineering  
Mandya - 571 401



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BOS meeting held on 07-05-2024 at HOD chamber Civil Engineering Department

Name of the BOS members (with affiliation):

Prof. R.K. Kumar Swamy  
Associate Professor  
Dept. of Civil Engineering  
PESCE, Mandya

Observations:

Reviewed framing of syllabus in P21CV Scheme for 7<sup>th</sup> & 8<sup>th</sup> semesters is satisfactory.  
Introduce the particular subjects of NPTEL course (minimum 8 weeks) are scrutinized.

Recommendations:

1. P21CV7033 - Foundation treatment for structures in expansive soil in unit - IV.
2. P21CV7034 - Tail water curve and jump water curve concept to be include in unit - IV.
3. P21CV7034 - Indent simple design problems on pipe spillway in unit - V

BOS-Member

BOS-Chairman  
Associate Professor and Head  
Department of Civil Engineering  
P.E.S. College of Engineering



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BOS meeting held on 07-05-2024 at HOD chamber Civil Engineering Department

Name of the BOS members (with affiliation):

Dr. S. Poorna Prajna  
Associate Professor  
Dept. of Civil Engg.  
P.E.S. College of Engg., Mandya - 571401

Observations:

The syllabus for all courses of VII are framed in systematic manner. Topics relating to present industry needs were included.

Recommendations:

- \* To include level of service in traffic engineering.
- \* To include variable message signs (VMS) in traffic engineering.
- \* To include intermodal transportation in unit-V for urban transport planning.

  
BOS-Member

Dr. H.C. Gowdegowda  
ASSOCIATE DEPARTMENT HEAD  
Department of Civil Engineering  
P.E.S. College of Engineering  
Mandya - 571 401



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BOS meeting held on 07-05-2024 at HOD chamber Civil Engineering Department

Name of the BOS members (with affiliation):

THEJAS. K.U - APS20CV096  
VIII<sup>TH</sup> 'B' - SEMESTER

Observations:

- Need for more Industry interaction, Every Semester
- More Exposure to practical Experience.
- Software training as per market requirements.

Recommendations:

Minor changes in the Curriculum to Enhance learning curriculums.

- Environmental Impact Assessment - Evaluation and Interpretation of Audit Report.
- Open channel Hydraulics - Concept of Siphon Spillway
- Introduction to smart cities - Smart traffic - Bangalore transport traffic management - Bangalore Police.
- Introduction to Green Buildings.

Thejas. K.U  
BOS-Member

Dr. H.C. Gowdegowda  
ASSOCIATE PROFESSOR AND HEAD  
Department of Civil Engineering  
P.E.S. College of Engineering  
Mandya - 571 401



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BOS meeting held on 07-05-2024 at HOD chamber Civil Engineering Department

Name of the BOS members (with affiliation):

Sahana - 4PS20CY077  
8<sup>th</sup> Semester  
PESCE, Mandya

Observations:

- Pre-stressed Concrete Structures  
↳ IS Code requirements ⇒ IS : 1343 - 2012
- Estimation :- Tender & Contract = flowchart  
Schedule of rates

Recommendations:

Traffic Engineering :- Its better to visit  
"Bengaluru Traffic police Management &  
Command Centre"

→ In this, include:

Accident Analysis Problem,  
Accident spot Analysis, Analysis of Bus Bay

EIA (Environment Impact Assessment) :-

- Include public participation (Involvement)
- Audit report.

Sahana  
BOS-Member.

Dr. G. Gowdegowda  
SOCIAL SCIENCE AND HEAD  
Department BOS-Chairman Engineering  
P.E.S. College of Engineering  
Mandya - 571 401



# DEPARTMENT OF CIVIL ENGINEERING

(Accredited by National Board of Accreditation)

## P.E.S. COLLEGE OF ENGINEERING

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MANDYA - 571 401 KARNATAKA

Ph : 08232-220043, Ext. 231/23, Fax No. 08232-222075, Mob. 9844248272

Ref :

Date... 01/06/2024

### Circular

**Subject:** Regarding opting NPTEL Course (As a part of Self-study Course) during July-December 2024.

It is here by informed to all the 6<sup>th</sup> semester Civil Engineering students to compulsorily register and complete the NPTEL course (As a part of Self-study Course) minimum of 8weeks/12weeks duration during July-December 2024 shortlisted by the BOS Committee UG Civil Department.

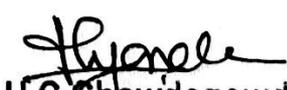
**Note:**

For enrolment during Jul- Dec 2024 semester go through below link.

- 1) Timelines - <https://bit.ly/3V4ctW5>
- 2) Tentative Course List - <https://bit.ly/4dMhnyh>
- 3) To join - <https://onlinecourses.nptel.ac.in/>

**Enclosure:** List of NPTEL course shortlisted by the department.

  
ASST. PROFESSOR 01/06/24  
Department of Civil Engg.  
P. E. S. College of Engineering  
MANDYA - 571 401

  
Dr. H.C. Chowdegowda  
ASSOCIATE PROFESSOR AND HEAD  
Department of Civil Engineering  
P.E.S. College of Engineering  
Mandya - 571 401

**List of NPTEL course shortlisted by the Department**

SL No.	Course ID	Discipline	Course Name	Insstitute	Duration	Enrollment End date	Exam Registration End date
1	noc24-ce57	Civil Engineering	Principles of Construction Management	IIT Kanpur	8 Weeks	July 29, 2024	August 16, 2024
2	noc24-ce64	Civil Engineering	Geotechnical Earthquake Engineering	IIT Kharagpur	12 Weeks	July 29, 2024	August 16, 2024
3	noc24-ce66	Civil Engineering	Pavement Materials (Under Pavement Engineering)	IIT Roorkee	12 Weeks	July 29, 2024	August 16, 2024
4	noc24-ce68	Civil Engineering	Geometric Design of Highways	IIT Roorkee	12 Weeks	July 29, 2024	August 16, 2024
5	noc24-ce69	Civil Engineering	Plate Tectonics	IIT Roorkee	12 Weeks	July 29, 2024	August 16, 2024
6	noc24-ce70	Civil Engineering	Introduction to Engineering Seismology	IISc Bangalore	12 Weeks	July 29, 2024	August 16, 2024
7	noc24-ce71	Civil Engineering	Remote Sensing: Principles and Applications	IIT Bombay	12 Weeks	July 29, 2024	August 16, 2024
8	noc24-ce89	Civil Engineering	Geotechnical Engineering - II	IIT Bombay	12 Weeks	July 29, 2024	August 16, 2024
9	noc24-ce104	Civil Engineering	Advanced Concrete Technology	IIT Madras	12 Weeks	July 29, 2024	August 16, 2024
10	noc24-ce92	Civil Engineering	Optimization Methods for Civil Engineering	IIT Guwahati	12 Weeks	July 29, 2024	August 16, 2024
11	noc24-ce59	Civil Engineering	Subsurface Exploration :Importance And Techniques Involved	IIT Guwahati	8 Weeks	July 29, 2024	August 16, 2024
12	noc24-ce60	Civil Engineering	Remote Sensing and GIS	IIT Guwahati	8 Weeks	July 29, 2024	August 16, 2024
13	noc24-ce77	Civil Engineering	Municipal Solid Waste Management	IIT Guwahati	12 Weeks	July 29, 2024	August 16, 2024

14	noc24- ce78	Civil Engineering	Fluid Mechanics	IIT Guwahati	12 Weeks	July 29, 2024	August 16, 2024
15	noc24- ce79	Civil Engineering	Bridge Engineering	IIT (ISM Dhanbad)	12 Weeks	July 29, 2024	August 16, 2024
16	noc24- ce80	Civil Engineering	Introduction to Multimodal Urban Transportation Systems (MUTS)	IIT Kharagpur	12 Weeks	July 29, 2024	August 16, 2024
17	noc24- ce94	Civil Engineering	Ground Improvement	IIT Kharagpur	12 Weeks	July 29, 2024	August 16, 2024
18	noc24- ce105	Civil Engineering	Wastewater Treatment and Recycling	IIT Kharagpur	12 Weeks	July 29, 2024	August 16, 2024
19	noc24- ce61	Civil Engineering	Sustainable Engineering Concepts and Life Cycle Analysis	IIT Kharagpur	8 Weeks	July 29, 2024	August 16, 2024
20	noc24- ce95	Civil Engineering	Soil Mechanics/Geote chnical Engineering I	IIT Kharagpur	12 Weeks	July 29, 2024	August 16, 2024
21	noc24- ce81	Civil Engineering	Railway Engineering	IIT Roorkee	12 Weeks	July 29, 2024	August 16, 2024
22	noc24- ce112	Civil Engineering	Foundation Engineering	IIT Kharagpur	12 Weeks	July 29, 2024	August 16, 2024
23	noc24- ce113	Civil Engineering	Design Of Steel Structures	IIT Kharagpur	12 Weeks	July 29, 2024	August 16, 2024
24	noc24- ge47	Multidiscipl inary	Fundamentals of Artificial Intelligence	IIT Guwahati	12 Weeks	October 26, 2024	July 29, 2024
25	noc24- oe06	Ocean Engineering	Marine Engineering	IIT Madras	12 Weeks	November 3, 2024	July 29, 2024

  
 ASST. PROFESSOR 01/06/24  
 Department of Civil Engg.  
 P. E. S. College of Engineering  
 MANDYA - 571 401

  
 Dr. H.C. Chowdewar  
 ASSOCIATE PROFESSOR AND HEAD  
 Department of Civil Engineering  
 P.E.S. College of Engineering  
 Mandya - 571 401



# DEPARTMENT OF CIVIL ENGINEERING

(Accredited by National Board of Accreditation)

## P.E.S. COLLEGE OF ENGINEERING

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MANDYA - 571 401 KARNATAKA

Ph : 08232-220043, Ext. 231/23, Fax No. 08232-222075, Mob. 9844248272

Ref :

Date..... 08/06/2024

### Circular

**Subject:** Regarding registration to minor degree for 4<sup>th</sup> semester students.

It is here by informed to 4<sup>th</sup> semester Civil Engineering student's who has permissible backlogs up to the third semester under the regulations governing the B.E./B.Tech degree and the student's cumulative grade point average (CGPA) after the third semester does not fall below 5.0 are eligible to register for minor degree. The students have to complete the major degree program within a minimum duration of 04 years (for lateral entry students 03 years). She/he shall complete all the required minor degree program courses and earn credits  $\geq 18$  before the completion (qualify) of the major degree. List of courses for Minor degree shortlisted by the BOS committee UG Civil Department are enclosed.

**Note:** <https://online.vtu.ac.in/category/courses/Minor-Degree> (Go through this link to register for minor degree).

**Enclosure:** List of courses for Minor degree shortlisted by the department.

  
Dr. H.G. Chowdegowda  
ASSOCIATE PROFESSOR AND HEAD  
Department of Civil Engineering  
P.E.S. College of Engineering  
Mandya - 571 401

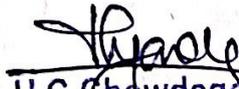
## Minor degree in Construction Materials Technology – MOOC

<b><u>Construction Materials Technology - Core</u></b>	
Concrete Technology	Credits 3
Advanced Concrete Technology	Credits 3
Modern Construction materials	Credits 3
Basic construction materials	Credits 3

<b><u>Construction Materials Technology - Elective</u></b>	
Hydration, Porosity and Strength of Cementitious Materials	Credits 3
Advanced Topics in the Science and Technology of Concrete	Credits 3
Characterization of Construction Materials	Credits 3
Maintenance and Repair of Concrete Structures	Credits 3
Sustainable Materials and Green Buildings	Credits 3
Building Materials and Composites	Credits 3
Development and Applications of Special Concretes	Credits 3
Environmental Impact Assessment	Credits 3
Admixtures and Special Concretes	Credits 3

## Minor degree in Environment – MOOC

<b><u>Environment - Core</u></b>	
Applied Environmental Microbiology	Credits - 3
Environmental Engineering- Chemical Processes	Credits - 3
Integrated Waste Management for a Smart City	Credits - 3
Life Cycle Assessment	Credits - 2
Waste water Treatment and Recycling (OR) Water and waste water treatment	Credits - 3 (OR) Credits - 3
Air pollution and Control	Credits - 3

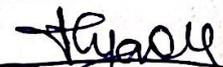
  
Dr. H.C. Chowdegowda  
ASSOCIATE PROFESSOR AND HEAD  
Department of Civil Engineering  
P.E.S. College of Engineering  
Mandya - 571 401

<b><u>Environment – Elective</u></b>	
Electronic Waste Management - Issues And Challenges	Credits - 1
Energy Efficiency, Acoustics and Day lighting in Building	Credits - 3
Environmental Remediation of Contaminated Sites	Credits - 3
Sustainable River Basin Management	Credits - 2
Plastic Waste Management	Credits - 2
Geographic Information Systems	Credits - 3
Remote Sensing: Principles and Applications	Credits - 3
Environmental Impact Assessment	Credits - 3
Microwave Remote Sensing in Hydrology	Credits - 3
Groundwater hydrology and management	Credits - 3
Rural Water Resources Management	Credits - 3
Environmental Science	Credits - 3

**Minor degree in Structural Analysis- MOOC**

<b><u>Structural Analysis - Core</u></b>	
Engineering Mechanics - Statics and Dynamics	Credits - 2
Mechanics of Solids	Credits - 3
Structural Analysis - I	Credits - 3
Matrix Method of Structural Analysis	Credits - 3
Structural Dynamics (OR) Dynamics of Structures	Credits – 2 or Credits - 3

<b><u>Structural Analysis - Elective Courses</u></b>	
Mechanics of Materials (OR) Theory of Elasticity	Credits – 3 or Credits - 3
Finite Element Method and Computational Structural Dynamics	Credits - 3
Soil Structure Interaction	Credits - 3
Sustainable Materials and Green Buildings	Credits - 3
Advanced Soil Mechanics	Credits - 3
Elastic Stability of Structures	Credits - 3
Geotechnical Earthquake Engineering	Credits - 3

  
**Dr. H.C. Chowdegowda**  
 ASSOCIATE PROFESSOR AND HEAD  
 Department of Civil Engineering  
 P.E.S. College of Engineering  
 Mandya - 571 401

**P.E.S. COLLEGE OF ENGINEERING, MANDYA - 571 401**  
(An Autonomous Institution Affiliated to VTU, Belagavi)

No: PES/DEAN-ACAD/2023-2024/ 84

Date: 23<sup>th</sup> March 2024

**Subject: Acknowledgement of Syllabus Update Request and Submission Protocol**

**Ref: CS&E/No: 304/date:9.3.24 [ received on 23.3.24]**

To whomsoever it may concern, thank you for bringing the discrepancy in the syllabus [VI semester, Professional Elective course: "Unix System Programming- P21CS6033] to our attention and for your proactive approach in seeking to rectify it. I acknowledge receipt of your request to update the syllabus and submit the revised version to the Dean Academic and Controller of Examinations.

In response to your request cited above, kindly proceed with the necessary updates to the syllabus and ensure that the proposed **changes undergo through scrutiny and approval from the Internal Board of studies (BOS) before finalizing the revisions.**

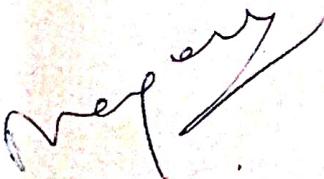
Upon completion of the updates, kindly submit the revised syllabus (approved by Internal BOS) along with proceeding of Internal BOS to the Dean Academic and Controller Examination on or Before 30<sup>th</sup> March 2024.

Thank you for your cooperation in this matter.

  
23/3/24  
Dr. B Dinesh Prabhu  
Dean Academic  
(Academic)  
P. E. S. College of Engineering,  
Mandya.

Copy to:

1. Chairperson , Board of Studies – Computer Science & Engineering.





# P.E.S. COLLEGE OF ENGINEERING,

(An Autonomous Institution, under Visvesvaraya Technological University, Belgaum)  
Aided by Govt. of Karnataka Recognized by AICTE, New Delhi



MANDYA-571401, KARNATAKA.

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Phone: 08232-220043, 220120 Ext: 213 Fax: 08232-22075

Date : 26-03-2024

To,  
The Academic Dean  
P.E.S. College of Engineering,  
Mandya.

Dear Sir,

Sub : BOS(UG) Internal Meeting – reg.

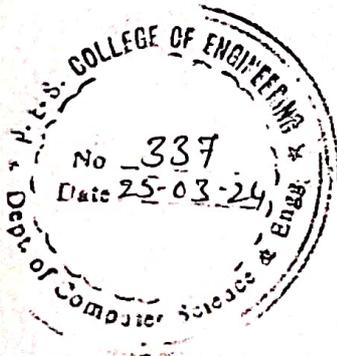
As per your letter (No.PES/DEAN-ACAD/2023-2024/84 Dt.23-3-2024), an internal BOS(UG) meeting is arranged to be held on 26<sup>th</sup> March 2024 at 4.00 pm in the department of Computer Science & Engineering to discuss and approve the syllabus of 6<sup>th</sup> semester 2021 scheme B.E. (CS & E) for the following subjects.

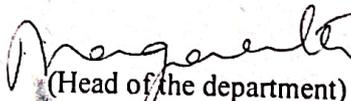
1. Professional Elective course - Unix System Programming (P21CS6063)
2. Open Elective-II course – Introduction to Web Programming (P21CSO6051)

This is for your kind information and needful.

Thanking you,

Yours Sincerely,



  
(Head of the department)  
**Dr. NAGARATHNA**  
Professor & Head  
Dept. of Computer Science & Engg.  
P.E.S. College of Engineering,  
Mandya - 571 401.



# P.E.S. COLLEGE OF ENGINEERING,

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MANDYA-571401, KARNATAKA.

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Phone: 08232-220043, 220120 Ext: 213 Fax: 08232-22075

Date : 26-03-2024

### COMPUTER ENGINEERING (UG) BOARD

#### CIRCULAR

As per the direction of the Academic Dean, I am pleased to inform you that internal BOS (UG) meeting is scheduled to held on 26<sup>th</sup> March 2024 in the department of Computer Science & Engineering at 4.00 PM to discuss and approve the syllabus of 6<sup>th</sup> semester 2021 scheme B.E. (CS & E) for the following subjects.

1. Professional Elective course - Unix System Programming (P21CS6063)
2. Open Elective-II course – Introduction to Web Programming (P21CSO6051)

In this regard I request all committee members and staffs (framed the syllabus) to attend for the same.

Sl.No.	Name	Nomination of the committee	Signature
1	Dr.Nagarathna	Chairperson	
2	Dr.M.C.Padma	Member	
3	S.K.Uma	Member	
4	Dr.R.Girisha	Member	
5	Dr.R.S.Prasanna Kumar	Member	
6	H.P.Ramyashree	Member	

Thanking you,

(Head of the department)  
**Dr. NAGARATHNA**  
Professor & Head  
Dept. of Computer Science & Engg.  
P.E.S. College of Engineering,  
Mandya - 571 401.



**Proceedings of the 16<sup>th</sup> Academic Council Meeting held on Saturday, 27<sup>th</sup> October, 2023 under the Chairmanship of Dr. H M Nanjundaswamy, Principal, PESCE, Mandya**

**Members Present**

- Dr. H M Nanjundaswamy - Chairman (AC) & Principal, PESCE, Mandya
- Dr. Vinay S - Vice Principal, PESCE, Mandya
- Dr. M K Ravishankar- Professor, MCE, Hassan
- Dr. T Vasudev - Dean, MIT, Mysuru
- Dr. M V Vijayakumar, Vice - Principal, Dr. AIT, Bangalore.
- Dr. B Uma, Dean, MCE, Hassan
- Dr. P Nagesh, D.G.M. Zonal Head, Ultratech Cement, (South India) Bangalore
- Dr. B Dinesh Prabhu, Dean (Academic)
- Dr. Umesh D R - Dy. Dean (Academic)
- Dr. K J Mahendra Babu - Controller of Examination
- Dr. N Jagadeesh - Prof. & Head (AE)
- Dr. H C Chowde Gowda - Prof. & Head (CE)
- Dr. Nagarathna - Prof. & Head (CS&E)
- Dr. Punith Kumar M B - Prof. & Head (EC&E)
- Dr. K M Mahesh Kumar - Prof. & Head (EE&E)
- Dr. N L Murali Krishna - Prof. & Head (I&PE)
- Dr. Minavathi - Prof. & Head (IS&E)
- Dr. Rudresh Addamani - Prof. & Head (ME)
- Dr. Puttaswamy - Prof. & Head (Maths)
- Dr. Thamanna B M - Prof. & Head (Physics)
- Dr. Prashanth P A - Prof. & Head (Chemistry)
- Dr. H P Mohan Kumar - Prof. & Head (MCA)
- Dr. Aluregowda - Prof. & Head (MBA)
- Prof. S K Uma - Associate Professor (CS&E)
- Dr. S Ghanaraja - Professor (ME)
- Prof. M Subramanyam - Associate Professor (E&CE)
- Dr. Chandrashekar - Dy. CoE
- Dr. M C Padma - Dean (Research)
- Dr. R Girisha - Dean (III)
- Dr. Sadashiva M - Dy. Dean (III)
- Dr. Anitha M L - Prog. Head of Data Science, Dept. of CS&E
- Prof. Geethanjali T M - Prog. Head of CS&BS, Dept. of CS&E

**Dean (Academic)  
P.E.S.C.E., MANDYA**



- Prof. Girish Babu M C - NIRF Coordinator
- Dr. Revanesh M - IIC Coordinator
- Dr. Sandeep Kumar D S - Associate Professor (CV)
- Dr. Veena M N - Professor (MCA)
- Dr. Mahesh Koti - Associate Professor (E&CE)
- Dr. Kodandarama - Librarian
- Dr. Anatha Padmanabha Prabh - Physical Education Director

**Members Absent**

- Dr. H C Nagaraj- Principal, NMIT, Bangalore.
- Vishwanadh Raju HR- Axiscadence, Bangalore.
- Dr. H S Prasantha, Professor, NMIT, Bangalore.

**ITEM - 1: Welcome the Members of Academic Council - XVI**

At the outset, the Chairman, welcomed the Honourable Academic Council members for the 16<sup>th</sup> Academic Council Meeting.

The following subjects as per the agenda have been discussed in the meeting and resolutions passed accordingly.

**ITEM - 2: Approval of Minutes of the 15<sup>th</sup> Academic Council Meeting held on 29<sup>th</sup> October, 2022**

Resolved to approve the proceedings of the 15<sup>th</sup> Academic Council Meeting held on 29<sup>th</sup> October, 2022.

**-Approved-**

**ITEM - 3: Action taken on the 15<sup>th</sup> Academic Council Meeting 29<sup>th</sup> October, 2022**

The Action taken on the proceedings of the 15<sup>th</sup> Academic Council Meeting was brought to the notice of all Academic Council Members and the same was appreciated and also approved by the Members.

**-Approved-**

**ITEM - 4: Academic Calendar for the AY 2023 - 24**

The tentative Academic Calendar for the Academic year 2023 - 24 (Odd Semester) [Except I year PG Programs] was placed before the members and the same was got approved. The Council members also suggested to prepare the academic calendar for I year PG Programs depending upon the admission of students.

**-Approved-**

**(Academic)**



**ITEM - 5(a): Approval of P22 BE - NEP Scheme.**

The P22 NEP Scheme for BE - I to IV Year and P22 M.Tech Scheme were presented before council and got approved.

Further, the Syllabus for B.E - P21 Scheme [5<sup>th</sup> - 6<sup>th</sup> Semester] of all UG programs; B.E - P22 Scheme [3<sup>rd</sup> - 4<sup>th</sup> Semester] of BE - CSE(AIML) program and P22 M.Tech Syllabus of all PG programs, which were initially approved in the BoS of the respective departments brought to the notice of academic council and got it approved.

**-Approved-**

**ITEM - 5(b): Approval of the proceedings of the BoS Meetings for the AY 2023 - 24**

The BOS meetings for the academic year 2023 - 24 were conducted by the respective departments for framing the BE Syllabus for V & VI Semester (P21 Scheme) and B.E. - CSE(AIML) Syllabus for III & IV Semester (P22 Scheme). After reviewing the proceedings, the same was approved by the academic council.

**-Approved-**

**ITEM - 5(c): Open Electives offered during the AY 2022 - 23**

The Open Electives offered for the AY 2022 - 23 were brought to the notice of the members and the same approved by the Academic Council. The Council members suggested to offer emerging technology courses as an Open elective course.

**-Approved-**

**ITEM - 5(d): Results and Graduation Day of AY 2021 - 22**

Dr. K J Mahendra Babu - Controller of Examination, briefed the Hon'ble members that the institution had conducted its 13<sup>th</sup> Graduation Day on 7<sup>th</sup> January 2023 in the college campus. On the Graduation Day, a total number of 862 students (UG: 711; PG: 151) graduated from the institute for the academic year 2021 - 22 along with the list was approved by the Academic Council. The principal and chairman also invited the members of the academic council to 14<sup>th</sup> Graduation Day to be held on 4<sup>th</sup> November, 2023.

**-Approved-**

**Dean (Academic)**



**ITEM - 5(e): NPTEL Chapter**

The offering of NPTEL courses has been made mandatory for both UG and PG students, and the same was appreciated by the members. The Hon'ble members suggested that the faculties should take the NPTEL course seriously to update their knowledge by appearing for an NPTEL examination.

**ITEM - 6(a): NBA Accreditation**

The present accreditation status of eight UG programs and two PG programs was brought to the notice of the members. They appreciated the efforts put in by the Principal and Staff towards NBA accreditation. Further, the members suggested to get accreditation for M.Tech. Programs also.

**ITEM - 6(b): NAAC Accreditation**

The members suggested to improve the NAAC grade in the coming years and expressed the satisfaction for the process carried out in submitting the SAR to NAAC.

**ITEM - 6(c): NIRF Ranking**

Hon'ble members applauded the 151 - 200 rank band achieved by PESCE under the NIRF Engineering Category by MHRD. Members expressed that PESCE shall maintain the same consistence in the coming years and also should make efforts to be among the top 100 premier technical institutions in India.

The Members suggested for having a ranking committee at the institutional level to look into the details and analyze the NIRF parameters. Corrective measures need to be taken based on the recommendations of the committee.

**ITEM - 6(d): Extension of Autonomy by UGC / VTU**

The Dean briefed about the autonomous status of PESCE extended for a period of five years w.e.f. 2019 - 20 to 2023 - 24 including ex-post-facto approval for the period 2017 - 18 to 2018 - 19.

**ITEM - 6(e): Permanent affiliation by VTU**

The Dean also briefed of Permanent affiliation status conferred by Visvesvaraya Technological University, Belagavi up to 2024-25 to all UG & PG courses (Except Master of Computer Application and BE - CSE[AIML])



# P.E.S COLLEGE OF ENGINEERING, MANDYA - 571 401

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## ITEM - 7: Student Induction Program for I Year Students of AY 2022 - 23

Dy. Dean Academic highlighted the 3-week Induction Program activities conducted for the newly admitted UG students during the AY 2022 - 23. The members were satisfied by the method followed for the induction program.

## ITEM - 8: Placement activities for the AY 2022 - 23

Dr. Vinay S, Training & Placement officer presented the Placement statistics report for the academic year 2022-23 to the members and the members appreciated the efforts taken by the placement cell.

## ITEM - 9(a): PESCE Faculty Members who have obtained Ph.D.

Dean (Research) presented the list of faculties who have obtained their Ph.D. in last year and the Hon'ble academic council members congratulated the faculty for their achievement. Prof. M A VijayaKumar suggested to encourage the faculties to do their research in high repute institutions like IIT's / IISc. / NITK's.

## ITEM - 9(b): Sponsored Research Projects

Dean (Research) presented the ongoing projects of PESCE. The members congratulated Principal and PESCE management for their continuous encouragement to faculty in getting the funds from various Public and Government agencies.

## ITEM - 9(c): Research Publications

Dean (Research) presented the list of Research Publications of the faculty during the last year. He also briefed about the citations in the web of science and Scopus for all the publications. But, members expressed their concern for the downfall of publications during last 3 years. The members also expressed their views in providing the incentives for the researcher paper published by the faculty members.

## ITEM - 9(d): Patents applied during AY 2022 - 23

Dean (Research) briefed about the patents applied during the AY 2021 - 22. The Members appreciated the effort put by the PESCE team for improving the patents at the institute.

Dean (Academic)



**ITEM - 9(e): Centre's of Excellence established at PESCE**

Dean (Research) briefed about the center of excellence established at PESCE. He highlighted the research activities which the center was engaged in. Further, he also highlighted that the center would promote more interdisciplinary research activities. Members appreciated the effort put by the Management of PESCE toward improving Centre of Excellence at the institute.

**ITEM - 10: Industry Institute Interaction**

Dean (III) briefed about the activities of Dean (III) during the AY 2022 - 23. In this connection, the Hon'ble members expressed their concern about the active Memorandums of Understanding (MoU) for the AY 2022-23 and suggested that the MoUs with industry should be improved so that the institute could bridge the gap between academia and industry. Further, the members appreciated the efforts in bringing the industry experts in engaging the 30 hours of sessions in a semester to our students.

**ITEM - 11: Institution's Innovation Council (IIC)**

Dr. Vinay S highlighted the activities conducted by the institution's Innovation Council for the faculty and the students. The members praised the institution's Innovation Council and suggested to taking the innovation to the next level, where students and the institute will benefit more.

**ITEM - 12: AICTE Activity Points Program**

On behalf of Dr. Refi Kerur, Coordinator for AICTE Activity Points Program, the Dean - Academic Office highlighted the activities conducted by the institution towards the fulfilment of AICTE Activity Points for the award of a BE degree. The members were pleased with the method, and also the memorandum of understanding with Youth for Seva for the conduction of AICTE activity points.

**ITEM - 13: New initiatives at the Institute**

The members appreciated the effort of PES College of Engineering, Mandya, in starting B.E. -Computer Science & Engineering (Data Science) and B.E. - Computer Science and Business Systems with an intake of 60 from the academic year 2023-24.

Dean (Academic)  
P.E.S.C.E., MANDYA.



**ITEM - 14: Extra - Curricular & Sports achievements for the AY 2022 - 23**

The extracurricular activities and sports achievements of the PESCE students were presented to the council members and the same was appreciated for their outstanding performance at all levels.

**ITEM - 15: Vision, Mission and Program Specific Outcomes (PSO) of Computer Science & Engineering [Artificial Intelligence and Machine Learning]**

The Members reviewed and made valuable suggestion for redefining Vision, Mission and PSOs of Computer Science & Engineering [Artificial Intelligence & Machine Learning] and the same was approved in the Academic Council.

**-Approved-**

**Views of External Members:**

**P. Nagesh**

1. Faculties shall be made provisioned with time to upgrade their knowledge in the latest technologies.
2. The institute / departments should connect more with the industry to enrich the students with skill development courses.
3. The students shall be made aware of handling the situations during the national disaster i.e., through NDRF - National Disaster Response Force programs.
4. Promote more on startups at the institute level.

**Dr. Vasudev T**

1. He appreciated that the documentation report of the academic council was well framed.
2. He appreciated the best practices adopted by the institution and also the consistency maintained in the NIRF ranking over the past five years.
3. He insisted to connect with industry for getting internship for both UG & PG students.
4. He insisted to offer Open Elective among all UG & PG programs.
5. He insisted to establish industry collaboration Centre of Excellence.

**Dean (Academic)**  
**P.E.S.C.E., MANDYA.**



# P.E.S COLLEGE OF ENGINEERING, MANDYA - 571 401

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**Dr. M V Vijaykumar**

1. Appreciated the performance and achievement of the institution during the recent years.
2. Appreciated Institution Innovation Council (IIC) activities and insisted to focus more on startups.
3. Insisted to give awareness on GATE exam and to promote the students to take admission in M.Tech. programs.
4. Insisted on start NCC in the campus.

**Dr. B Uma**

1. Congratulated the entire PESCE team on maintaining its consistency in NIRF ranking for the fifth year in a row.
2. Appreciated the placements of Mechanical and Civil Engineering.
3. Insisted on encouraging the faculty to enrol in NPTEL course registration.
4. Provided the feedback to cultivate teamwork and managerial skills in the students.
5. Advised to adopt flipped classroom methodology.
6. Insisted to give awareness on Human values and Life Values.
7. Advised to strictly adopt the mentoring system.

**Dr. M K Ravishankar**

1. Appreciated the placements of Mechanical Engineering Science.
2. Insisted to promote B.E. - Minors program.

No other subjects came for discussion and meeting was concluded with Vote of thanks by Dr. Vinay S, Vice-Principal.

**Dr. B Dinesh Prabu**  
Dean - Academic  
Dean (Academic)  
P.E.S.C.E., MANDYA.  
Copy to:

**Dr. Vinay S**  
Vice - Principal  
Vice Principal  
P.E.S. College of Engg. Mandya

**Dr. H M Nanjundaswamy**  
Principal  
PRINCIPAL  
PES College of Engineering  
Mandya - 571 401.

1. All Head of Departments
2. All the members of the Committee



# P.E.S. COLLEGE OF ENGINEERING

An Autonomous Institution Recognised by AICTE New Delhi, Affiliated to VTU Belagavi)

Accredited by NBA and NAAC

MANDYA - 571 401 KARNATAKA

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Phone : 08232-220043, 220120, Ext : 213, Fax : 08232-22075



Date : 11-08-2023

To,

Dr. K.Raghuveer  
Professor & Head,  
Dept. of IS & E,  
National Institute of Engineering,  
Mananthavady Road,  
Mysuru 570008.

Dear Sir,

I am pleased to inform you that BOS(UG) meeting of UG Board B.E.(CS & E) is scheduled to be held on 16-08-2023, at 10.30 AM in the department of Computer Science & Engineering, P.E.S. College of Engineering, Mandya to discuss and approve the scheme and syllabus of 5<sup>th</sup> and 6<sup>th</sup> semesters B.E.(CS & E) subjects.

In this regard, I request you kindly to attend meeting and give your valuable suggestions.

Thanking you,

Yours faithfully,

*Maganath*  
D.D. NAGARATHNA  
Professor & Head  
Chairperson,  
Dept. of Computer Science & Engg.  
P.E.S. College of Engineering,  
Mandya - 571 401.

Agenda:

1. Discuss and approve the scheme and syllabus of 5<sup>th</sup> and 6<sup>th</sup> semesters B.E. (CS & E) for the academic year 2023-24.



# P.E.S. COLLEGE OF ENGINEERING

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MANDYA - 571 401 KARNATAKA

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Phone : 08232-220043, 220120, Ext : 213, Fax : 08232-22075



Date : 11-08-2023

To,

Mr. Natesh Palahalli  
Program Manager, DXC Technology-GD India,  
DXC Technology HP Avenue,  
39/40 Electronic city, Hosur Road,  
Bengaluru.

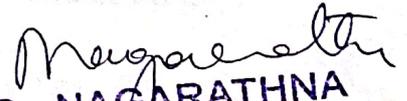
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Thanking you,

Yours faithfully,

  
Dr. NAGARATHNA  
Professor & Head  
Dept. of Computer Science & Engg.  
P.E.S. College of Engineering,  
Mandya - 571 401.

Agenda:

1. Discuss and approve the scheme and syllabus of 5<sup>th</sup> and 6<sup>th</sup> semesters B.E. (CS & E) for the academic year 2023-24.



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## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Phone : 08232-220043, 220120, Ext : 213, Fax : 08232-22075



Date : 11-08-2023

To,

Dr. Indiramma M.  
Professor,  
Dept. of CS & E,  
B.M.S. College of Engineering,  
Bengaluru.

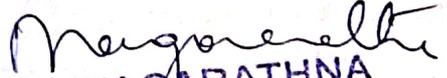
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In this regard, I request you kindly to attend meeting and give your valuable suggestions.

Thanking you,

Yours faithfully,

  
Dr. (Dr. Nagarathna)  
Chairperson  
Dept. of Computer Science & Engg.  
P.E.S. College of Engineering,  
Mandya - 571 401.

Agenda:

1. Discuss and approve the scheme and syllabus of 5<sup>th</sup> and 6<sup>th</sup> semesters B.E. (CS & E) for the academic year 2023-24.



# P.E.S. COLLEGE OF ENGINEERING

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MANDYA - 571 401 KARNATAKA

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Phone : 08232-220043, 220120, Ext : 213, Fax : 08232-22075



Date : 11-08-2023

To,

Dr. Anasuya M.A.  
Associate Professor ,  
Dept. of CS & E,  
JSS Science and Technology University,  
Mysuru.

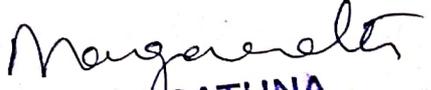
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In this regard, I request you kindly to attend meeting and give your valuable suggestions.

Thanking you,

Yours faithfully,

  
Dr. N. SARATHNA  
Professor & Head  
Dept. of Computer Science & Engg.  
P.E.S. College of Engineering,  
Mandya - 571 401.

Agenda:

1. Discuss and approve the scheme and syllabus of 5<sup>th</sup> and 6<sup>th</sup> semesters B.E. (CS & E) for the academic year 2023-24.



# P.E.S. COLLEGE OF ENGINEERING,

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MANDYA-571401, KARNATAKA.

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Phone: 08232-220043, 220120 Ext: 213 Fax: 08232-22075

Date : 12-08-2023

To,  
The Academic Dean  
P.E.S. College of Engineering,  
Mandya.

Dear Sir,

Sub : BOS(UG) Meeting – reg.

As per your direction, BOS(UG) meeting is arranged to be held on 16<sup>th</sup> August 2023 in the department of Computer Science & Engineering at 10.30 AM to discuss and approve the scheme and syllabi of 5<sup>th</sup> and 6<sup>th</sup> semesters (2021 scheme) B.E. (CS & E).

This is for your kind information and needful.

Thanking you,

Yours Sincerely,

(Head of the department)

M. NAGARATHNA

Professor & Head

Dept. of Computer Science & Engg.

P.E.S. College of Engineering,

Mandya - 571 401.

Agenda :

1. Approving scheme and syllabus of 5<sup>th</sup> and 6<sup>th</sup> semesters (2021 scheme) B.E. (CS & E) for the academic year 2023-24.



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MANDYA-571401, KARNATAKA.

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Phone: 08232-220043, 220120 Ext: 213 Fax: 08232-22075

Date : 12-08-2023

### COMPUTER ENGINEERING (UG) BOARD

#### CIRCULAR

As per the direction of the Academic Dean, I am pleased to inform you that BOS (UG) meeting is scheduled to held on 16<sup>th</sup> August 2023 in the department of Computer Science & Engineering at 10.30 AM to discuss and approve the scheme and syllabi of 5<sup>th</sup> and 6<sup>th</sup> semesters (2021 scheme) B.E. (CS & E).

In this regard I request all committee members and staffs (framed the syllabus) to attend for the same.

Sl.No.	Name	Nomination of the committee	Signature
1	Dr.Nagarathna	Chairperson	
2	Dr.M.C.Padma	Member	
3	S.K.Uma	Member	
4	Dr.R.Girisha	Member	
5	R.S.Prasanna Kumar	Member	
6	H.P.Ramyashree	Member	

Thanking you,

(Head of the department)  
**DR. NAGARATHNA**  
Professor & Head  
Dept. of Computer Science & Engg.  
P.E.S. College of Engineering,  
Mandya - 571 401.



# P.E.S. COLLEGE OF ENGINEERING,

(An Autonomous Institution, under Visvesvaraya Technological University, Belgaum)  
Aided by Govt. of Karnataka Recognized by AICTE, New Delhi



MANDYA-571401, KARNATAKA.

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Phone: 08232-220043, 220120 Ext: 213 Fax: 08232-22075

Date : 16-08-2023

To,  
The Academic Dean  
P.E.S. College of Engineering,  
Mandya.

Dear Sir,

Sub : BOS Meeting (UG) – reg.

As per your direction, BOS Meeting of UG Board was held on 16<sup>th</sup> August 2023 in the department of Computer Science & Engineering to discuss and approve the scheme and syllabus of 5<sup>th</sup> and 6<sup>th</sup> semesters B.E.(CS & E) subjects for the scheme 2021.

The following members were present in the meeting:

Sl. No	Category	Nomination of the committee	Name of the Person	Signature
1.	Head of the department	Chairperson	Dr.Nagarathna Professor & Head	
2.	Faculty members of the department at different levels with different specialization having minimum experience of 5 years	Members	1. Dr.M.C.Padma 2. S.K.Uma 3. Dr.R.Girisha 4. R.S.Prasanna kumar 4. H.P.Ramyashree	    



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MANDYA-571401, KARNATAKA.

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Phone: 08232-220043, 220120 Ext: 213 Fax: 08232-22075

Date : 16-08-2023

3.	Subject experts from outside the college nominated by academic council	Member	Dr.M.Indiramma Professor & HOD Department of AI & DS, B.M.S. College of Engineering, Bull Temple Road, Bengaluru	Attended the meeting by On-line
		Member	Dr.K.Raghuveer Professor, Department of IS & E, N.I. College of Engineering, Mysuru.	
4	Expert from outside college nominated by Vice chancellor	Member	Dr.H.C.Vijayalakshmi Professor, Department of CS & E, JSSSTU, Mysuru.	
5	Representative from Industry/Corporate sector/ Allied area relating to placement nominated by academic council	Member	Mr.Natesh Palahalli Program Manager, DXC Technology-GD, Hosur Road, Bengaluru.	
6	Post Graduate Meritorious alumnus Nominated by Principal	Member	Dr.Anasuya M.A. Associate Professor, Department of CS & E, JSSSTU, Mysuru	

(Head of the Department)

Dr Anasuya M. A  
Associate Professor  
Dept of CS & E,  
JSSSTU, Mysuru-570006.

Suggestions regarding the syllabus framing for 5<sup>th</sup> and 6<sup>th</sup> semester subjects of 2021 Scheme.

- 1) V sem.  
Operating system - New updated text book  
- Add author to the 2<sup>nd</sup> reference.
- 2) Push cloud computing to core course if possible.  
Inclusion of Service oriented Architecture into cloud computing course.
- 3) In AI course of open elective think to retain Fuzzy Systems & CA.
- 4) Suggested to restructure the fundamental of AI course.
- 5) High light the concepts of oops and Java in 4<sup>th</sup> module of the Python Programming - an introduction.
- 6) VI sem.  
SPSS, Power BI, tools can be used to visualize the data Analysis techniques.
- 7) Suggested to drop Tomarules approach in Computer Architecture course.
- 8) Discuss once the way of execution of syllabus of Computer Architecture course.

- 9) Introduce software metrics to software testing course.
- 10) Fuzzy ANN Alg can be a case study.
- 11) Think for applying the concepts of Perl, CGI, etc concepts in Advanced Computing.
- 12) change the title to web technologies.

Please include the below topics for your curriculum

Python, GoLang, Data Science,  
AI, ML, LLM (Large Language Model)  
Generative AI (Chat GPT)  
Intro to cloud computing, CI/CD,  
Containers and Kubernetes  
Agile and DevOps are very much required

Notesh.

Delivery Manager

DXC Tech

Bangalore

Dr. K.Raghuveer  
Professor,  
Dept. of IS & E,  
National Institute of Engineering,  
Mananthavady Road,  
Mysuru 570008

Include more practical concepts wherever possible

~~Dr. K.Raghuveer~~ 16/08/23

K.RAGHUVEER  
PROFESSOR

Dr. Indiramma M  
Professor,  
Dept. of CS & E,  
B.M.S. College of Engineering,  
Bengaluru.

Suggestion regarding the syllabus framing for 5<sup>th</sup> and 6<sup>th</sup> semester subject of 2021 Scheme.

V Sem

1. Software Engineering:-  
Make students to use agile models in their final year project.

2. Computer Netw:-

mention author name.

Lab 8 & 1-10 include UDP in lab.

2. make another question for UDP

Part A - HTTPS, FTP → application layer is missing.

3. Operating System

- check publications,

→ device drives in the lab

4. Computer graphics  
modify CO5

5. Cloud computing

change keyword in CO5 level

make sure that student opt this subject

Visualization:- Include full and part visualization, give AWS Azure for self study  
- can include cassandra, mongoDB, follow only one model platform like AWS.

6. AI:-

Implement concept from 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> unit as practical assignment.

7. open Glueviz-AI

→ change the book

→ change unit 2, unit 3, remove expert, fuzzy, genetic algorithms.

9. fundamentals of DP

no

10. Python programming

Introduce of oops concepts.

11. DBMS

6<sup>th</sup> Semester

1. Data Analytics:-

→ include excel sheet for analytics for practical  
→ Make our students use tool like power BI for practical assignment.

2. computer architecture:-

1. Algorithm not needed.

3. Block chain:-

practical component, club unit 2, and unit 3.

4. Network Management:-

→ remove case, history, MIB (include), RFC application protocol.  
remote desktops defined architecture, and Management

→ Demonstrate how we practical on application

## Software Testing.

- includes qualitative analysis of software testing.
- explain the need for testing, how testing happens in different phases.
- make the student to do assignment using different testing tool.

## 6. Soft Computing.

- Refer another book for unit 3.
- evolutionary algorithms in unit 1,
- explain the transition from traditional to neural
- include fuzzification & defuzzification

## 7. U.S.P.

- command for unit 1, to be given as assignment.

## 8. Devop's

include practical component

## 9. Perasive computing.

- include Server Side programming, PHP, Ruby, etc
- Rails

## 10. SOA

include background provided.

## 11. web programming

include content development introduction



Date : 26-08-2023

**COMPUTER SCIENCE & ENGINEERING (UG) BOARD**

**Proceedings of BOS (UG) Meeting held on 16-08-2023**

**Agenda :**

To discuss and approve the scheme and syllabus, B.E. (CS & E) of :

1. 2021 scheme (5<sup>th</sup> and 6<sup>th</sup> semester)
2. 2022 scheme (3<sup>rd</sup> and 4<sup>th</sup> semester)

BOS meeting (Department of CS & E) of UG Board was held on 16<sup>th</sup> August 2023 at 10.30 AM in the Department of Computer Science & Engineering to discuss and approve the scheme and syllabus of 2021 scheme (5<sup>th</sup> and 6<sup>th</sup> semester) and 2022 scheme (3<sup>rd</sup> and 4<sup>th</sup> semester) B.E. (CS & E) subjects. Dr.Nagarathna, Professor & HOD was the chairperson.

At the outset, Dr.Nagarathna, Chairperson (BOS UG), welcomed the external and internal members to the meeting. The entire syllabi of all 5<sup>th</sup> and 6<sup>th</sup> semesters were presented by the concerned faculty members. The agenda (as above) was discussed in the meeting elaborately. The suggestions given by external members have been listed and enclosed within the same. It was decided to retain the syllabus of 2021 scheme (3<sup>rd</sup> and 4<sup>th</sup> semester) for 2022 scheme (3<sup>rd</sup> and 4<sup>th</sup> semester) and was approved in the meeting. Finally, Dr.Nagarathna, Chairperson (BOS UG), concluded the meeting by thanking all the members present in the meeting for their valuable suggestions.

(Dr.Nagarathna)  
Professor & Chairperson BOS(UG)  
Department of CS & E

**Dr. NAGARATHNA**  
Professor & Head  
Dept. of Computer Science & Engg.  
P.E.S. College of Engineering,  
Mandya - 571 401.

## 2021 Scheme (5<sup>th</sup> and 6<sup>th</sup> Semester)

**Subject:** Suggestions reported by external BOS members regarding the syllabus framing for 5<sup>th</sup> and 6<sup>th</sup> semester subjects of NEP Scheme.

Dr.M.Indiramma (Subject experts from outside the college)  
Professor & HOD  
Department of AI & DS,  
B.M.S. College of Engineering,  
Bull Temple Road, Bengaluru

### 5<sup>th</sup> Semester

1. Software Engineering :
  - Make students to use agile models in their final year project
2. Computer Networks :
  - Mention author name
  - Lab : Include UDP IN laboratory
    - : Add one more question on UDP
  - In Part-A “application layer” is missing like https, ftp
3. Operating System :
  - Check the publication,
  - Device drivers (demonstration) in the lab.
4. Computer Graphics and visualization :
  - CO5 → Make it to design.
5. Cloud computing platform :
  - Change keywords in CO's level,
  - Make sure that students opt this subject
  - Virtualization : Include full and para virtualization. Give AWS Azure for selfstudy.  
Can include Cassandra, mangoDB, Follow only one model platform like AWS.
6. Artificial Intelligence :
  - The concepts from first, second and third unit to be given as practical assignment.
7. Open Elective- AI :
  - Change the text book,
  - Let the syllabus match the current AI.
  - Change unit-2, unit-3, remove expert, fuzzy, genetic algorithm
8. Python Programming :
  - Introduce of OOPs concepts.

## 6<sup>th</sup> Semester

### 1. Data Analytics :

- Include excel sheet for analysis for practicals.
- Make the students to the practical assignment using tools like PowerBI, Spss.

### 2. Computer Architecture : T. Algorithm not needed

### 3. Blockchain : Practical component, club unit-2 and unit-3

### 4. Network Management : Remove case history. MIB (include), RFC application , remote desktops, telnet architecture and management protocol.

Demonstration of how to use protocols in application layer

### 5. Software Testing : Include

- Qualitative metrics of software testing
- Explain, the need for testing, how testing happen in different phases
- Make the students to do the assignment using different testing tools

### 6. Soft Computing :

- Include gradient descent concepts and its variants in unit-3.
- Include evolutionary algorithms in unit-1to explain the transition from traditional to present.
- Include case study to explain fuzzification and defuzzification

### 7. Unix System Programming :

- Commands in unit-1 to be given as assignment

### 8. DevOp's

- Include practical component

### 9. Pervasive Computing :

- Include server side programming-PHP, RUBY on Rails

### 10. Service Oriented Architecture :

- Include background protocols.

### 11. Web Programming :

- Include content development introduction.

**Dr. K.Raghuveer** (Subject experts from outside the college)  
Professor,  
Dept. of IS & E,  
National Institute of Engineering,  
Mananthavady Road,  
Mysuru 570008

Include more practical concepts wherever possible.

**Natesh Plahalli** (Representative from Industry/Corporate sector)  
Program Manager,  
DXC Technology, (Formerly Hewlett Pacicorsd Euterpuse)  
Bengaluru.

Please include the below topics for your curriculum :

Python, Golang, Data Science, AI, ML, LLM (Large Language Model),  
Generative AI (Chat GPT), Introduction to Cloud Computing, CI/CD  
Containers and Kubernetes

Agile and Devops are very much required.

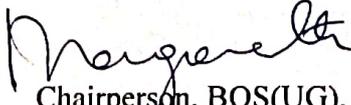
**Dr. Anasuya M.A. (Post Graduate Meritorious alumnus)**  
**Associate Professor**  
**Dept of CS & E,**  
**JSSSTU,**  
**Mysuru - 570006.**

**5<sup>th</sup> Semester**

1. Add new updated text book and add author to the 2<sup>nd</sup> reference in the subject Operating System
2. Push the subject Cloud Computing to core course if possible. Inclusion of Service Oriented Architecture in to Cloud Computing course
3. In Artificial Intelligence course of open elective think to retain Fuzzy Systems and GA.
4. Suggested to restructure the fundamental of Artificial Intelligence course
5. High light the concepts of OOPs and JAVA in 4<sup>th</sup> module of the Python programming – An Introduction.

**6<sup>th</sup> Semester**

1. SSPS, Power BI, tools can be used to visualize the data analysis techniques.
2. Suggested to drop tomasulo approach in Computer Architecture course.
3. Discuss the way of execution of syllabus of Computer Architecture course.
4. Introduce Software metrics to Software Testing course.
5. Fuzzy ANN algorithm can be a case study.
6. Think for applying the concepts of Perl, CGI. Etc concepts in pervasive computing.
7. Change the title to Web Technologies.



Chairperson, BOS(UG),  
Department of CS & E,  
PESCE, Mandya.

**Dr. NAGARATHNA**  
Professor & Head  
Dept. of Computer Science & Engg.  
P.E.S. College of Engineering,  
Mandya - 571 401.

**Department of Electronics and Communication  
Engineering  
PES College of Engineering, Mandya**

**BOARD OF STUDIES**



# P.E.S. College of Engineering, Mandya

Estd. In the year 1962, Autonomous Institution, Aided by the Government of Karnataka,  
Affiliated to Visvesvaraya Technological University, Belagavi, Approved By AICTE, New Delhi.

## Department of Electronics and Communication Engineering

Ref.: PESCE/ECE/2023-24/ BOS (UG) /odd/19

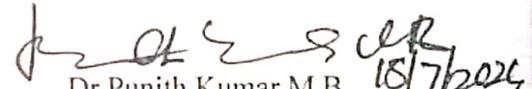
Date: 18-7-2024

### Circular

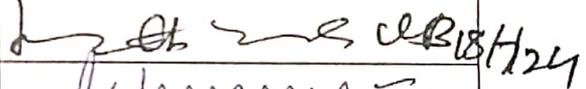
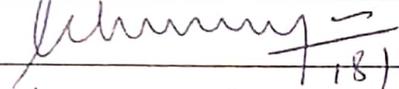
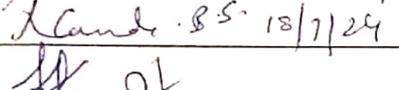
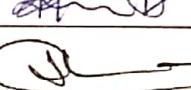
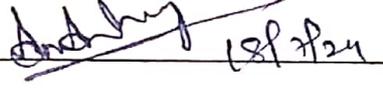
A meeting of internal Board of Studies members in UG (E&C) is scheduled for July 18, 2024, at 3.00 PM in self-learning in the E&C Dept. to discuss the following agenda: Informed all the members to attend the meeting.

#### Agenda

1. Discussion on 5<sup>th</sup> and 6<sup>th</sup> semester of P22 scheme (NEP 2020)
2. Discussion on 7<sup>th</sup> and 8<sup>th</sup> semester of P21 scheme (NEP 2020)
3. Modification of Open elective to Professional Elective
4. To final<sup>2e</sup> the syllabus

  
Dr. Punith Kumar M B 18/7/2024  
Chairman, BOS (G-E&C)

#### BOS (UG) Members

Sl. No.	Name	Designation	Signature
1.	Dr. Punith Kumar M B	Chairman, BOS (UG-E&C)	 18/7/24
2.	M Subramanyam	Member	 18/7/24
3.	Dr. B S Nanda	Member	 18/7/24
4.	Kumar N Krishamurthy	Member	
5.	Dr. Mahesh	Member	 18/7/24
6.	Ashaya A N	Member	 18/7/24



# P.E.S COLLEGE OF ENGINEERING, MANDYA - 571 401

(An Autonomous Institution Affiliated to VTU, Belagavi)

Ref.No.: PESCE/DEAN-ACAD/2023-2024/122

Date: 19<sup>th</sup> July 2024

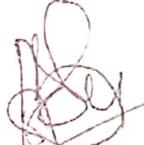
## CIRCULAR

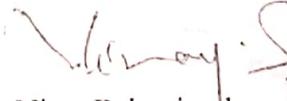
**Subject:** Replacement of Open Elective Subject with Professional Core Course in Fifth semester of P22 Scheme. Reg

As per the feedback from the Chairman's Board of Studies and the meeting of Heads of Departments (HODs) on 16th July 2024, it was unanimously decided to replace the **Open Elective subject** with a **Professional Core Course** in the Fifth Semester of the P22 Scheme starting from the academic year 2024-2025.

Sl.No	P22Scheme (Existing Course)	P22Scheme (Replaced Course)
1.	Open Elective (P22XXO505X)	Professional Core Course (P22XX505)

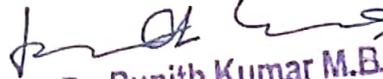
All HODs are requested to bring this modification to the notice of all faculty members and **ensure its incorporation into the syllabus.**

  
 19/7/24  
 Dean Academic  
 Dean (Academic)  
 P.E.S.C.E., MANDYA

  
 19/7  
 Vice Principal  
 Vice Principal  
 P.E.S. College of Engg. Mandya

  
 19/7/24  
 Principal  
 PRINCIPAL  
 PES College of Engineering  
 Mandya - 571 401.

circulate to  
 MS  
 DO BSN  
 Dr. M  
 K.N.M.  
 ANA

  
 Dr. Punith Kumar M.B.  
 Professor & HOD  
 Department of E and C Engineering  
 P.E.S. College of Engineering  
 Mandya - 571 401  
 19/7/2024

## Proceedings of the Board of Studies (Under Graduate)

Meeting held on 29<sup>th</sup> May 2024 in the Department of E and C Engineering, PESCE, Mandya - 571401

Venue: Self Learning Lab, Time: 10 AM

### Members Present

Sl. No.	Name	Role	Sl. No.	Name	Role
1.	Dr. Punith Kumar M B Professor and HoD (E & C) PESCE, Mandya	Chairman BoS (UG - E & C)	7.	Dr K R Sudhindra Associate Professor, (E & C) BMSCE, Bangalore	Expert Member (External)
2.	M Subramanyam Associate Professor, (E & C) PESCE, Mandya	Expert Member (Internal)	8.	Dr S. B. Rudra Swamy Associate Professor, (E & C) SJCE, Mysore	Expert Member (External)
3.	Dr. B S Nanda Professor, (E & C) PESCE, Mandya	Expert Member (Internal)	9.	Dr Dinesha P Professor, (E & C) Dayanand Sagar College of Engineering, Bangalore	Expert Member (External) VTU Nominee
4.	Kumar N. Krishna Murthy Assistant Professor, (E & C) PESCE, Mandya	Expert Member (Internal) Member	10.	Dr Srikanth T Project Manager L & T Technology Services Mysore	Expert Member (Industry)
5.	Dr Mahesh Associate Professor, PESCE	Expert Member (Internal)	11.	Dr Sashidhar H R Associate Professor, (E & C) NIE, Mysore	Expert Member (Alumni)
6.	Ashrya A N Assistant Professor, (E & C) PESCE, Mandya	Expert Member (Internal)	12.	Dr Apurba Das Chief Architect Head Cognitive AI (IoT & DE) TCS, Bangalore	Expert Member (Industry)

Dr. Punith Kumar M. B., Chairman BoS (UG, E, and C), welcomed all the BoS members. He also introduced all the members to the board. One of the members, an industry expert, was unable to join the meeting online. The chairman started the meeting by reading the agenda of the meeting.

Agenda:

1. Approving the syllabus for the 5<sup>th</sup> and 6<sup>th</sup> semesters of the P22 scheme (NEP 2020)
2. Approving the syllabus for the 7<sup>th</sup> and 8<sup>th</sup> semesters of the P21 scheme (NEP 2020)
3. Approving the syllabus of the 6<sup>th</sup> semester professional elective subjects of the P21 scheme (NEP 2020)

**5<sup>th</sup> Semester**

Sl. No.	Course Code with Title	Suggestions provided by BoS members	Action taken on the BoS Members input
1	P22EC501 Innovation Entrepreneurship and Management	Approved	Accepted the course content in its current form.
2	P22EC502 Digital CMOS VLSI Design	Change the subject name. Suggested the title Fundamentals of CMOS VLSI.	The course title seems to be appropriate, hence it is retained as is.
P22EC 503X Professional Elective Course – I (Four subjects)			
3	P22EC5031 Fundamentals of object oriented Language and Database Concepts	Changes are required in the title. Remove the database concepts. Add data structure concepts and change the syllabus accordingly. (Include some of the concepts insert, push, pop, etc.)	The course is titled Fundamentals of Object-Oriented Language and Data Structures. The database part is removed, and data structures are included. The syllabus is changed accordingly.
4	P22EC5032 System Verilog	Approved	Accepted the course content in its current form.
5	P22EC5033 Control System	Approved If possible, make it a core course.	Accepted the course content in its current form. At present, it is not possible to consider it a core course due to various constraints.

6	P22EC5034 ARM Processors	Approved		Accepted the course content in its current form.
7	P22EC 504 Digital Signal Processing	Reduce syllabus. Exclude the application of DSP.  It is suggested to rearrange the syllabus. Remove the FIR filter using frequency . sampling. Remove AD; keep only BLT.  Suggested use of DSP by author Li Tan	Instead of FFT concepts being taught in detail, any application-level topics can be added with the inclusion of respective experiments (speech processing) along with Python coding.	For conceptual continuity, the filter design methods have been retained as is.  The DSP Book by Li Tan is included as a reference.
P22ECO505X Open Elective – I (Four subjects)				
8	P22ECO5051 E-Waste Management	Approved		Accepted the course content in its current form.
9	P22ECO5052 Principles of Communication Systems	Approved		Accepted the course content in its current form.
10	P22ECO5053 Biometrics	In Unit -1 while adding syllabus? Is there need to remove this. COs need modifications. Textbook numbering should be in proper order. Necessity of Watermarking section?		The content of Unit 1 is modified as per suggestions. Textbook numbering is done correctly. CO's are reviewed and modified. Watermarking is discussed in the context of secured biometrics and to enhance biometric systems.
11	P22ECO5054 Introduction to IoT	Changes required in title (IoT and Sensors) retain only IoT. Reframe the Syllabus (reduce the syllabus). Change text book according to syllabus.		The course is retitled "Introduction to IoT," and the syllabus is reframed with a change of text book.
12	P22EC L506 Circuit Simulation Laboratory	Approved		Accepted the course content in its current form.
13	P22INT507 Internship - II	Approved		Accepted the course content in its current form.

14	P22HSMC508 Employability Enhancement Skills – V	Approved	Accepted the course content in its current form.
15	P22UHV509 Social Connect and Responsibility	Approved	Accepted the course content in its current form.

**6<sup>th</sup> Semester**

Sl. No.	Course Code with Title	Suggestions provided by BOS members	Action taken on the BOS Members input
1	P22EC601 Analog CMOS VLSI Design	Approved	Accepted the course content in its current form.
P22EC602X Professional Elective Course – II (Four subjects)			
2	P22EC6021 ITC and Multimedia	Changes are required in the syllabus title. Suggestions were given to change it to ITC and Multimedia or only ITC. But we need to remove communication from that title. Reduce the syllabus.	The course is retitled ITC and Multimedia. The communication part is retained as is, as it discusses multimedia from the perspective of transmission.
3	P22EC6022 DSP Processor and Applications	Approved	Accepted the course content in its current form.
4	P22EC6023 Embedded Systems	Approved If possible, introduce a complete embedded system development perspective starting from scratch.	Accepted the course content in its current form.
5	P22EC6024 Operating System	Suggested the title RTOS. Change the syllabus according to this title.	The current title is very appropriate with respect to the content framed; hence, it is retained as is.
P22EC603X Professional Elective Course – III (Four subjects)			
6	P22EC6031 Computer Organization	Approved	Accepted the course content in its current form.
7	P22EC6032 Digital Image Processing	Approved Self study component to be modified	Accepted the course content in its current form. Self study component is modified

8	P22EC6033 Design for Testability	Approved	Accepted the course content in its current form.
9	P22EC6034 Artificial Intelligence and Machine Learning using VLSI	Unit-1 topics repeated twice need to be checked. Textbook not added; need to check on this. The basics of AIML need to be explicitly and enthusiastically included in the introduction (concepts like support vector machines, Bayesian networks, and regression). Change the title of the course to Introduction to Artificial Intelligence and Machine Learning.	There was little confusion about the version of the syllabus; the latest version of the syllabus was verified by internal BoS members and found to address the suggestions.
10	P22EC604 Microwave and Antenna	L. T. and P need changes (3:0:2). Suggested tools for this AFSS and CST. Dr. K. R. Sudhindra suggested exploring the possibilities of a MoU to use the tools available at his institute. Textbook numbering should be in order.	L:T:P is changed as per the scheme, and the text book list is reordered. BoS has passed on the information about the MOU and its need to the Department Advisory Committee.
P22ECO605X Open Elective – II (Four subjects)			
11	P22ECO6051 Electronic Instrumentation	In line with the Mechanical and Civil Departments	The current course content is in line with the needs of the mechanical and civil departments.
12	P22ECO6052 Introduction to Embedded Systems	Approved	Accepted the course content in its current form.
13	P22ECO6053 Introduction to Image Processing	CLOs numbering should be in order. SPATIAL filters.	CLOs are reordered. SPATIAL filters are included as a part of Unit III.
14	P22ECO6054 Automotive Electronics	Course code need correction missing O in it. Unit 4: The self-learning component (SSC) needs changes. Text 1 is not written "mention that." CLOs need proper numbering.	The version of the syllabus draft copy was older; the latest version is found to be correct, as verified by member internal BoS.

15	P22ECL606 VLSI Laboratory	Changes are required in the syllabus title. We need to add the fundamental experiment inverter to the syllabus.	The course name is rephrased as suggested.
16	P22ECMP607 Mini – Project	CLOs numbering should be in order.	CLOs numbering is done properly
17	P22HSMC608 Employability Enhancement Skills - VI	Approved	Accepted the course content in its current form.
18	P22LHV609 Universal Human Values and Professional Ethics	Approved	Accepted the course content in its current form.

7<sup>th</sup> Semester

Sl. No.	Course Code with Title	Suggestions provided by BOS members	Action taken on the BOS Members input
1	P21EC701 Wireless and Mobile Communication	In COs, the same verb should not repeat. COs need changes to the self-learning component of units 4 and 5. I need to explain the 4G concept before unit 4.	CO's rephrased as per suggestions. Action taken on the BOS Members input
2	P21EC702X Professional Elective Course – IV (Four subjects)	We need a simulator for CO5.	
3	P21EC7021 Low Power VLSI Design	Content of the syllabus is more check the syllabus and reduce the same. In COs, the same keyword should not repeat.	The content is appropriate as per the domain requirements. CO's rephrased as per suggestions.
4	P21EC7022 Cryptography and Network Security	Approved	Accepted the course content in its current form.
5	P21EC7023 Wireless Sensor Networks	Approved	Accepted the course content in its current form.
6	P21EC7024 Multicore architecture and Programming	Check COs. COs should be written by POs, not Bloom's Taxonomy.	CO's are corrected as per suggestions.
7	P21EC703X Professional Elective Course – V (Four subjects)		
8	P21EC7031 Satellite Communications	Approved	Accepted the course content in its current form.
9	P21EC7032 System on Chip	Title of the subject need to be changed	Title of the course is changed as "System on Chip".
10	P21EC7033 Advanced Wireless Technology	More number of wireless subjects.	BOS members collectively advised to keep the course.
11	P21EC7034 Biomedical Signal Processing	Approved	Accepted the course content in its current form.

12	P2IEC704 Computer Communication Network and IoT	L: T: P need changes (3:0:2). Split CCN and IoT	The course cannot be split as the credits are squeezed due to NEP; within the limited credits, the concepts of CCN and IoT need to be blended and served.
13	P2IEC705 Research Methodology, Report Writing and IPR	Approved	Accepted the course content in its current form.
14	P2IEC706 Project Work Phase - I	Approved	Accepted the course content in its current form..
8 <sup>th</sup> Semester			
Sl. No.	Course Code with Title	Suggestions provided by Bos members	Action taken on the BOS Members input
1	P2IEC801 Self-Study Course	Approved	Accepted the course content in its current form.
2	P2INT802 Research / Industry Internship - III	Change the title for this it has (Research / Industry)	The course title is as per the scheme provided by Dean Academics.
3	P2IEC803 Project Work Phase - II	COs need to be changed. Introduce all POs	CO's are changed with effective reframing of PO mapping.

The panel meeting was concluded with an overall summary read by Dr. Punith Kumar M.B., Chairman, BOS, stating the suggestions and comments to be taken for implementation. Chairman BOS thanked all the BOS members for their valuable time and valid suggestions.



Dr. Punith Kumar M.B,

Chairman

Board of Studies (UG - E & C)

Dr. Punith Kumar, M.B.,

Professor & HOD

Department of Engineering

V.E.S. College of Engineering

Mandya - 571 401

Ref: PESCE/ECE/2023-24/ BOS (UG) /18

Date: 14-06-2024

### Proceedings of the BOS Meeting

A meeting of internal Board of Studies members in UG (E&C) is conducted on June 10, 2024, at 3.30 p.m. in the HOD chamber of the E&C Department to discuss the following agenda. Along with the BOS members, the NPTEL coordinator and student coordinator also attended the meeting.

### Agenda

1. Discussion on the selection of NPTEL courses for the 6<sup>th</sup> semester students.

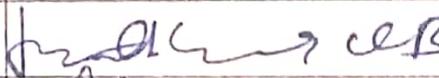
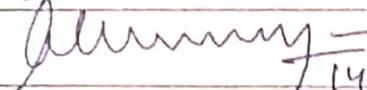
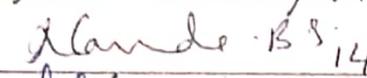
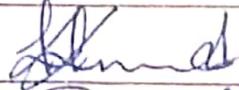
Chairman BOS welcomed the BOS members, NPTEL Coordinator, and student coordinator, and started the meeting. Mr. Santhosh Babu K. C., MOOC Coordinator, explained the various courses that will benefit the students. BOS members appreciated his efforts in preparing the list of NPTEL courses. Mr. Mahantesh P, the student coordinator, was also satisfied with the list, as it covered a variety of subjects catering to the needs of all the students.

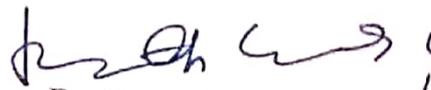
The following list is the suggested NPTEL courses for 6<sup>th</sup> Semester BE student's for the AY-2024-25.

The 6<sup>th</sup> semester students are hereby informed to register and complete **any one** course mentioned below **compulsorily**.

Sl No.	Course ID	Course Name	Duration in Weeks
1.	noc24-ee102	VLSI Design Flow: RTL to GDS	12 Weeks
2.	noc24-ee132	Simulation of Communication Systems using Matlab	12 Weeks
3.	noc24-ee134	Digital VLSI Testing	12 Weeks
4.	noc24-ee143	Semiconductor Devices and Circuits	12 Weeks
5.	noc24-ee110	Enclosure Design of Electronics Equipment	12 Weeks
6.	noc24-cs83	Computer Architecture	12 Weeks
7.	noc24-ee131	Fiber Optic Communication Technology	12 Weeks
8.	noc24-de18	Control Systems	12 Weeks
9.	noc24-ee152	5G Wireless Standard Design	12 Weeks
10.	noc24-cs88	Artificial Intelligence : Search Methods For Problem solving	12 Weeks
11.	noc24-ee80	Low Voltage CMOS Circuit Operation	8 Weeks
12.	noc24-ee93	VLSI Interconnects	8 Weeks
13.	noc24-ee86	Digital Switching - I	8 Weeks

14.	noc24-ee95	An Introduction to Coding Theory	8 Weeks
15.	noc24-ee151	Principles of Modern CDMA/ MIMO/ OFDM Wireless Communications*	8 Weeks
16.	noc24-ee150	Analysis And Design Principles Of Microwave Antennas*	8 Weeks
17.	noc24-ee149	Introduction to Adaptive Signal Processing	8 Weeks
18.	noc24-ee90	Advanced Linear Continuous Control Systems: Applications with MATLAB Programming and Simulink	8 Weeks
19.	noc24-ee94	System Design Through Verilog	8 Weeks
20.	noc24-cs78	Programming, Data Structures and Algorithms using Python	8 Weeks

Sl No.	Members	Signature
1.	Dr.Punith Kumar M B, Chairman, BOS	 14/6/24
2.	Mr. M Subramanyam, BOS Member	 14/6/24
3.	Dr. B S Nanda, BOS Member	 14/6/24
4.	Mr. Kumar N. Krishna Murthy, BOS Member	
5.	Dr. Mahesh, BOS Member	
6.	Ms. Ashaya A N, BOS Member	 14/6/24
7.	Mr. Santhosh Babu K C, MOOC Coordinator	
8.	Mr. Mahantesh P, Student Coordinator	 14/6/24

  
Dr. Punith Kumar M B  
Chairman, BOS (UG-E&C) 14/6/24

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## Department of Electronics and Communication Engineering

Ref.: PESCE/ECE/2023-24/ BOS (UG) /17

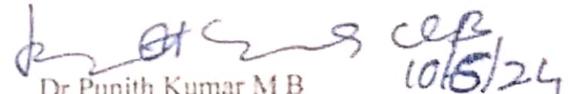
Date: 10-6-2024

### Circular

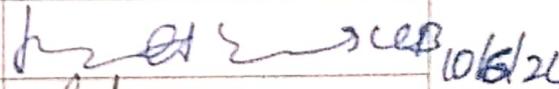
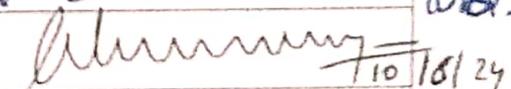
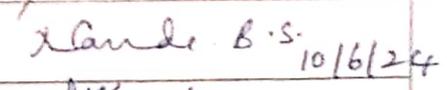
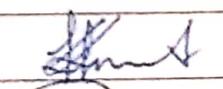
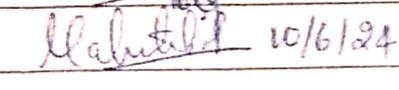
A meeting of internal Board of Studies members in UG (E&C) is scheduled for June 10, 2024, at 3.30 PM in HOD chamber of the E&C Dept. to discuss the following agenda: Informed all the BOS members, NPTEL Coordinator, student coordinator to attend the meeting.

### Agenda

1. Discussion on selection of NPTEL Courses for the 6<sup>th</sup> semester students.

  
Dr. Punith Kumar MB  
Chairman, BOS (UG-E&C)  
10/6/24

### BOS (UG) Members

Sl. No.	Name	Designation	Signature
1	Dr. Punith Kumar M B	Chairman, BOS (UG-E&C)	 10/6/24
2	M Subramanyam	BOS Member	 10/6/24
3	Dr. B S Nanda	BOS Member	 10/6/24
4	Kumar N Krishamurthy	BOS Member	
5	Dr. Mahesh	BOS Member	
6	Ashaya A N	BOS Member	
7	Santhosh Babu K C	MOOC Coordinator	
8	Mahantesh P	Student Coordinator	 10/6/24



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# E.S. College of Engineering, Mandya

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## Department of Electronics and Communication Engineering

Date: 29-5-2024

Ref.: PESCE/ECE/2023-24/ BOS (UG) /Even/16

### Meeting Invitation

You are cordially invited to the Board of Studies (BOS) in the UG (E & C) meeting scheduled for May 29<sup>th</sup>, 2024. Your presence will enhance the values of deliberation and help us design effective Curriculum.

Kindly find the agenda as follows:

#### Agenda:

1. Approving the syllabus for the 5<sup>th</sup> and 6<sup>th</sup> semesters of the P22 scheme (NEP 2020)
2. Approving the syllabus for the 7<sup>th</sup> and 8<sup>th</sup> semesters of the P21 scheme (NEP 2020)
3. Approving the syllabus of the 6<sup>th</sup> semester professional elective subjects of the P21 scheme (NEP 2020)

Date: May 29<sup>th</sup>, 2024;

Time: 10:00 AM

Venue: Dept of E & C Engg

With best regards

Dr. Punith Kumar M B

Chairman, BOS (G-E&C)

*[Handwritten signature]*  
29/5/24

#### BOS (UG) Members

Sl. No.	Name	Designation	Signature
1.	Dr.Punith Kumar M B	Chairman, BOS (UG-E&C)	<i>[Handwritten signature]</i>
2.	M Subramanyam	Member	<i>[Handwritten signature]</i>
3.	Dr. B S Nanda	Member	<i>[Handwritten signature]</i>
4.	Kumar N Krishnamurthy	Member	<i>[Handwritten signature]</i>
5.	Dr. Mahesh	Member	<i>[Handwritten signature]</i>
6.	Ashaya A N	Member	<i>[Handwritten signature]</i>
7.	Dr K R Sudhindra	Member	<i>[Handwritten signature]</i>
8.	Dr. S B Rudra Swamy	Member	<i>[Handwritten signature]</i>
9.	Dr. Dinesha P	VTU Nominee	<i>[Handwritten signature]</i>
10.	Dr Srikanth T	Member	<i>[Handwritten signature]</i>
11.	Dr. Shashidhar H R	Member	
12.	Dr. Apurba Das	Member	Attended through online



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## Department of Electronics and Communication Engineering

Date: 25-5-2024

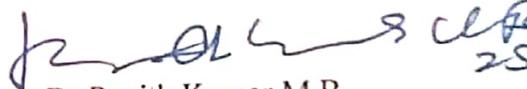
Ref.: PESCE/ECE/2023-24/BOS (UG) /Even/17

### Circular

A meeting of internal Board of Studies members in UG (E&C) is scheduled for May 27, 2024, at 3.30 p.m. in the HOD Chamber. To discuss the following agenda: The below members and faculty are informed to attend the meeting.

### Agenda:

1. Finalization of the syllabus for the 5<sup>th</sup> and 6<sup>th</sup> semesters of the P22 scheme (NEP 2020)
2. Finalization of the syllabus for the 7<sup>th</sup> and 8<sup>th</sup> semesters of the P21 scheme (NEP 2020)

  
Dr. Punith Kumar M B  
Chairman, BOS (UG - E&C) 25/5/24

### BOS (UG) Members

1. Dr. Punith Kumar M B
2. M Subramanyam
3. Dr. B S Nanda
4. Kumar N Krishnamurthy
5. Dr. Mahesh
6. Ashaya A N

Chairman, BOS (UG-E&C)

Member

Member

Member

Member

Member

**Department of Electronics and Communication Engineering**  
**Board of Studies - UG (2021 - 24)**  
(As per VTU Status an Autonomous Colleges (Amended) 2018)

Sl. No.	Category	Nomination of the committee	Name
1.	Head of the Department	Chair Person	<b>Dr. M J Anand</b> Associate Professor and Head, Dept of E & C Engg PES College of Engg, Mandya-571401 Mail: <a href="mailto:anandmj@pesce.ac.in">anandmj@pesce.ac.in</a> Tel(mob): 8050020106
2.	Faculty members of the department at different levels with different specialization having minimum experience of 5 years	Members (Max of 5)	<b>M. Subramanya</b> Associate Prof in E & C Engg <b>Mrs. B S Nanda</b> Associate Prof in E & C Engg <b>Dr. Mahesh Koti</b> Asst Prof in E & C Engg <b>Mr. Kumar N Krishnamurthy</b> Asst Prof in E & C Engg <b>Dr. Revanesh M</b> Associate Prof in E & C Engg
3.	Subject experts from outside the college nominated by academic Council	Members (Max of 2)	<b>Dr. S B RudraSwamy</b> Associate Professor Dept. of E&C Engg. SJCE, Mysore Mob: 8861020598 Email: <a href="mailto:rudra.swamy@sjce.ac.in">rudra.swamy@sjce.ac.in</a> <b>Dr. K R Sudhindra</b> Associate Prof in E & C Engg BMS College of Engg, Bangalore. Email: <a href="mailto:sudhin77@gmail.com">sudhin77@gmail.com</a> Mobile No: 9743871177
4.	Expert from outside college Nominated by Vice chancellor	Propose 6 members where the University nominates any ONE member	<b>Dr. Dinesha P</b> Professor, Dept, of ECE Dayananda Sagar College of Engineering, Bangalore-570078 Mobile No 9900483483 <a href="mailto:dineshprg@gmail.com">dineshprg@gmail.com</a>
5.	Representative from Industry Corporate Sector/ Allied area relating to placement nominated by Academic council	One member	<b>Dr. Srikanth T</b> Project Manager, L & T Technology Services Mysore. Mob: 9986483968 Email: <a href="mailto:shreekanth_t@lts.com">shreekanth_t@lts.com</a>
6.	Post Graduate Meritorious alumnus Nominated by Principal	One member	<b>Dr. Shashidhar H R</b> Associate Professor Dept. of E&C Engg.NIE, Mysore Mob: 8095999271 Email: <a href="mailto:shashidharahr@nie.ac.in">shashidharahr@nie.ac.in</a>

  
**Dr. R Girisha**  
Dean - Academic  
**Dr. R. Girisha**  
Dean (Academic)  
P.E.S.C.E., Mandya.

  
**Dr. R M Mahalingegowda**  
Principal PRINCIPAL  
PES College of Engineering  
Mandya - 571 401.



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## Department of Electronics and Communication Engineering

Ref.: PESCE/ECE/2023-24/BOS (UG) /odd/01

Date: 28-2-2024

### Circular

A meeting of internal Board of Studies members in UG (E&C) is scheduled for March 11, 2024, at 10.30 AM in self-learning in the E&C Dept. to discuss the following agenda: Informed all the members to attend the meeting.

### Agenda

1. Discussion on 5<sup>th</sup> and 6<sup>th</sup> semester of P22 scheme (NEP 2020)
2. Discussion on 7<sup>th</sup> and 8<sup>th</sup> semester of P21 scheme (NEP 2020)
3. Discussion on Syllabus Preparation.

  
Dr. Punith Kumar M B 28/2/2024

Chairman, BOS (G-E&C)

### BOS (UG) Members

1. Dr. Punith Kumar M B
2. M Subramanyam
3. Dr. B S Nanda
4. Kumar N Krishnamurthy
5. Dr. Mahesh
6. Ashaya A N

Chairman, BOS (UG-E&C)

Member

Member

Member

Member

Member



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## Department of Electronics and Communication Engineering

Ref.: PESCE/ECE/2023-24/ BOS (UG) /odd/02

Date: 13-3-2024

### Circular

Dear Colleagues,  
Hereby, I inform BOS Members and all faculty members to update the course outcomes and CAM of the 5<sup>th</sup> and 6<sup>th</sup> semester subjects of the P22 schemes.

#### **BOS (UG) Members**

1. Dr.Punith Kumar M B - Chairman, BOS (UG - E& C)
2. M Subramanyam - Member
3. Dr. B S Nanda - Member
4. Kumar N Krishnamurthy - Member
5. Dr. Mahesh - Member
6. Ashya A N - Member

#### Allotment of Subjects to faculty updating the COs and CAM of 5<sup>th</sup> and 6<sup>th</sup> Semesters (P22 Scheme)

Dr. Punith Kumar M B

1.	P22 EC 504	Digital Signal Processing	Dr. M J Anand	Ms Nischitha K
2.	P22 EC 6022	DSP Processor and Applications	Dr. Sahanaraj B S	Ms Nischitha K
3.	P22 EC 6032	Digital Image Processing	Dr. R. Manjunatha	Dr. Mahesh kumar A S
4.	P22 EC O 6053	Introduction to Image Processing	Dr. R. Manjunatha	Dr. Mahesh kumar A S

Mr M. Subramanyam

1.	P22 EC 5031	Fundamentals of Object Oriented Language and Database Concepts	Ms Sushma M P	Mr Yashwanth B
2.	P22 EC 601	Analog CMOS VLSI Design	Mr Santhosh Babu K C	Mr. Janardhan S Y
3.	P22 EC 5033	Control System	Ms S. Jyothi	Ms. Vidyashree B P
4.	P22 EC 6034	Artificial Intelligence and Machine Learning in VLSI	Dr. Mahesh	Ms. Anisha A
5.	P22 EC L606	VLSI Lab	Ms Noor ayesha	Mr Yashwanth B
6.	P22 EC508/ P22EC608	Employability Enhancement Skills - V Employability Enhancement Skills - VI	Mr Vinay Kumar H S	Mr Yashwanth B



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## Department of Electronics and Communication Engineering

Dr. B. S. Nanda

1.	P22 EC 502	Digital CMOS VLSI Design	Mr Vinay Kumar H S	Mr. Santhoshbabu K C
2.	P22 EC O 5052	Principles of Communication Systems	Dr R. Manjunatha	Ms. Shwetha S K
3.	P22 EC 604	Microwave and Antenna	Ms Sushma P S	Ms Sushma M P
4.	P22 EC 607	Miniproject	Dr.N M Maheshgowda	Ms Nischitha K

Dr Mahesh

1.	P22 EC 5032	System Verilog	Dr. Punith Kumar M B	Dr Sahararaj B S
2.	P22 ECO 5051	E-Waste Management	Ms Kavyashree J	Ms. Dimple R
3.	P22EC6024	Operating System	Mr. Kumar N. Krishna Murthy	Mr. Amith S
4.	P22 EC 6033	Design for Testability	Mr Santhosh Babu K C	Ms. Spoorthy M R
5.	P22 ECO 6054	Automotive Electronics	Dr Sahana Raj B S	Ms. Chaitra K
6.	P22EC507	Internship	Dr R. Manjunatha	Ms Vidyaashree B. P

Mr Kumar N. Krishna Murthy

1.	P22 EC 501	Management and Entrepreneurship	Ms Nooraysha	Ms Niveditha V K
2.	P22 ECO 5053	Biometrics	Dr Sahana Raj B S	Ms. Spoorthy M R
3.	P22 EC L506	Circuit Simulation Laboratory	Ms A. N. Ashraya	Ms Dimple R
4.	P22EC6031	Computer Organization	Mr.Janardhan	Mr. Amith S
5.	P22 ECO 6051	Electronics Instrumentation	Dr R. Manjunatha	Ms Niveditha V K

Ms A. N. Ashraya

1.	P22 EC 5034	ARM Processors	Dr N M Mahesh Gowda	Ms. Kavyashree J
2.	P22 ECO 5054	Sensors and IoT	Ms S. Jyothi	Ms. Minugu B
3.	P22 EC 6021	ITC and Multimedia Communications	Dr N M Mahesh Gowda	Ms. Minugu B
4.	P22 EC 6023	Embedded Systems	Dr. Punith Kumar M B	Ms. Spoorthy M R
5.	P22 ECO 6052	Introduction to Embedded Systems		

Dr. Punith Kumar M B  
Professor and HOD  
Department of E and C Engineering  
P.E.S.C.E Mandya  
13/3/24

Department of E and C Engineering  
P.E.S.C.E Mandya



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## Department of Electronics and Communication Engineering

Ref : PESCE/ECE/2023-24/BOS (UG)/Odd/03

Date:- 13.3

2024

Dear Colleagues,

Hereby, the members are informed to prepare the syllabus for P21 scheme of the 7<sup>th</sup> and 8<sup>th</sup> semester subjects as per the list in below table.

### Circular

#### BOS (UG) Members

1. Dr.Punith Kumar M B - Chairman, BOS (UG - E& C)
2. M Subramanyam - Member
3. Dr. B S Nanda - Member
4. Kumar N Krishanurthy - Member
5. Dr. Mahesh - Member
6. Ashaya A N - Member

#### Allotment of Subjects to faculty for the preparation of the syllabus.

##### Dr. Punith Kumar M B

1.	P21EC7021	Low Power VLSI Design	Ms. S Jyothi	Mr. Santhoshbabu K C
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##### Mr M. Subramanyam

1.	P21EC7034	Biomedical Signal Processing	Dr. M J Anand	Ms. Shwetha S K
2.	P21EC705	Research Methodology, Report writing, IPR	Dr. Mahesh kumar A S	

##### Dr B. S. Nanda

1.	P21EC701	Wireless and Mobile Communication	Dr R Manjunatha	Mr. Anith S
2.	P21EC7023	Wireless Sensor Networks	Dr. Revanesh M	Mr. Jaganathan S Y



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## Department of Electronics and Communication Engineering

Dr Mahesh *(Signature)*

1.	P21EC7032	System on Chip and Network on Chip	Mr. Santhoshbabu K C <i>(Signature)</i>	Mr. Yashwanth B <i>(Signature)</i>
2.	P21EC704	Computer Communication Network and IoT	Dr. M N Radhika	Ms. Yashaswini R <i>(Signature)</i>
3.	P21EC802	Research/Industry Internship-III	Dr. M J Anand	

Mr Kumar N. Krishna Murthy

1.	P21EC7024	Multicore architecture and Programming	Dr.N M Maheshgowda <i>(Signature)</i>	Ms.Niveditha V K <i>(Signature)</i>
2.	P21EC7033	Advanced Wireless Technology	Ms.Vidyashree B P <i>(Signature)</i>	Ms. Anisha A
3.	P21EC801	Self-study course	Ms.Dimple <i>(Signature)</i>	

Ms A. N. Ashraya

1.	P21EC7022	Cryptography and Network Security	Dr. Sahanaraj B S <i>(Signature)</i>	Ms Minugu B
2.	P21EC7031	Satellite Communications	Dr. Maheshkumar A S <i>(Signature)</i>	Ms.Sushma M P <i>(Signature)</i>
3.	P21EC706	Project work phase-I	Dr.N M Maheshgowda <i>(Signature)</i>	Ms. Nischitha K <i>(Signature)</i>
4.	P21EC803	Project work phase-II	Dr.N M Maheshgowda <i>(Signature)</i>	Ms. Nischitha K <i>(Signature)</i>

*(Signature)*  
Dr. Punith Kumar M B  
Professor and HOD  
Department of E and C Engineering  
P.E.S.C.E, Mandya



**P.E.S. COLLEGE OF ENGINEERING,  
MANDYA.571401**

(An Autonomous Institution Under VTU, Belgaum)

**Department of Electronics & Communication Engineering**

7.07.2023

From

Dr.M.J.Anand  
Associate Professor and Head, E & C Engg  
Chairman, Board of Studies in UG program (E & C)  
PES College of Engineering, Mandya-571401

To

Dean (Academics)  
PES College of Engineering, Mandya

Dear Professor,

The BOS (UG- E& C) meeting is schedule on Tuesday, 11<sup>th</sup> July 2023. All the external board members have been informed about the meeting date and they agree for this date. This is for your information.

. Date: 11-07-2023

Time: 11.00 AM

Venue: Dept of E & C Engg

Agenda:

1. Approving scheme from 5<sup>th</sup> to 8<sup>th</sup> semesters of P21 scheme (NEP 2020).
2. Approving the syllabus of 5<sup>th</sup> and 6<sup>th</sup> semesters of P21 scheme (NEP 2020).
3. Approving the scheme and syllabus of 3<sup>rd</sup> and 4<sup>th</sup> semesters of P22 scheme.

Thanking you

With best regards

  
7/7/2023  
Dr.M.J.Anand

**Dr. M. J. Anand**  
Associate Professor & HOD  
Department of Electronics & Communication Engineering  
P.E.S. College of Engineering,  
Mandya - 571 401.

Proceedings of the Board of Studies (Under Graduate)

Meeting held on 11-07-2023 in the Department of E and C Engineering, PESCE, Mandya.  
Venue: Self Learning Lab, Time: 11 AM

Member present

Sl no	Name	Role	Sl no	Name	Role
1	Dr M.J.Anand, Associate Professor and HOD	Chairman	7	M.Sul Yamanya, Associate Prof, PESCE	Expert member (internal)
2	Dr. S B RudraSwamy Associate Professor Dept. of E&C Engg. SICE. Mysore	Expert member (external)	8	Dr.D S Nanda, Associate prof, PESCE	Expert member (internal)
3	Dr K R Sudhindra Associate Prof in E & C Engg, BMS College of Engg, Bangalore	Expert member (external)	9	Dr. Mahesh Koti, Asst Prof, PESCE	Expert member (internal)
4	Dr. Dinesha P Professor, Dept, of ECE Dayanandasagar College of Engineering, Bangalore-570078	Expert member (external, nominated by VC)	10	Mr. Kumar N Krishnamurthy, Asst Prof, PESCE	Expert member (internal)
5	Dr. Srikanth T Project Manager L & T Technology Services, Mysore	Expert member (Industry)	11	Ashraya N Asst Prof, PESCE	Expert member (internal)
6	Dr. Shashidhar HR Associate Professor, Dept. of E&C Engg. NIE, Mysore	Expert member (Alumni)	12	Dr.Apurba Das, chief Architect, Head Cognitive AI(IoT & DE),TCS, Bangalore	Expert member (Industry)

Dr M. J. Ananda, Chairman BoS (UG-E and C) welcomed all the BoS members. He also introduced all the members to the board. One of the members who were industry experts was unable to join the meeting online.

Chairman started the meeting by reading the agenda of the meeting.

Agenda:

1. Approval of 5<sup>th</sup> and 6<sup>th</sup> Scheme's syllabus of P21 Scheme (NEP2020).
2. Approval of P22 Scheme and syllabus of 3<sup>rd</sup> to 4<sup>th</sup> Semesters (NEP2020).

Agenda 1: Approval of 5<sup>th</sup> and 6<sup>th</sup> Scheme's syllabus of P21 Scheme (NEP2020)

Dr Dinesha P and Dr K R Sudindhra suggested the following changes in the subject Digital CMOS VLSI Design Shift 3<sup>rd</sup> and 4<sup>th</sup> unit and vice versa and also suggested to include textbook by Pucknell

Dr. Srikanth T suggested the following for the subject Fundamentals of object oriented Language and Database Concepts  
Add the topics of how to build software/executable in Unit-1. (Relevant to the subject)

Dr Dinesha P and Dr Shashidhar H R Sudindhra enquired about the following in the subject System Verilog  
Assertions missing, Where verifications used? In Unit-1 provide hands on instead of giving assignment-2.

Dr. Srikanth T suggested the following for the subject Digital Signal Processing  
Check Zoom FFT in Unit-2., Keep only 2 filters in unit-3., Remove Kaiser., Realisation of IIR and FIR., FIR filter keep only 2., Application specific in unit-5, Check text book from author Tarun Kumar.

Dr K R Sudindhra enquired about the following in the subject E-Waste management  
Check EST STD in text book. Question framing techniques

Dr. Srikanth T and Dr. S B RudraSwamy suggested the following for the subject IoT and Sensors  
Change the subject name to 'Sensors and IOT'.

Dr K R Sudindhra suggested the following for the subject DSP Processor and Applications  
Be specific on naming of DSP Processor from TMS320C54XX to TMS320C6713.

Dr Shashidhar suggested the following for the subject Embedded Systems  
To Check Target Hardware for debugging.

Dr Shashidhar suggested the following for the subject Operating systems  
Try to fit as core course. Keep Scheduling concepts replacing threats in unit-5.

During the discussion of the subject Control systems, members suggested to move it to 5<sup>th</sup> semester and move DIP to 6<sup>th</sup> Semester  
For the subject AI and ML in VLSI, members suggested few changes in Unit-2 and 3

With respect to Analog and Digital VLSI Design Laboratory Dr. S B RudraSwamy suggested interchanging Analog and Digital experiments.  
Keep Digital VLSI in Part-A and Keep Analog VLSI in Part-B

Dr. S B RudraSwamy enquired about self study courses and open electives and External BOS members suggested adding Pre-requisite to select open elective subject.

HOD mentioned that only NPTEL/SWAYAM online courses are considered.  
He also mentioned that students are encouraged to register to the online courses as early as possible.

Approval of 5<sup>th</sup> and 6<sup>th</sup> Scheme and syllabus of P21 Scheme (NEP2020)

Table I. Bos Panel Review Comments

Scheme and Syllabus was read by Dr M. J. Anand, Chairman, BOS(UG)

Following are the changes/suggestions discussed for scheme and syllabus of 5<sup>th</sup> and 6<sup>th</sup> semester in External BOS meeting held on 11/07/2023.

SI No.	Course Code	Course Title	Remarks: Comments, Suggestions	Action to be taken
1.	P21EC501	Innovation, Entrepreneurship and Management	Approved	Accepted the course as is
2.	P21EC502	Digital CMOS VLSI Design	Shift 3 <sup>rd</sup> to 4 <sup>th</sup> Unit and vice versa.	Suggestions are considered After update accepted the course as is

			Text book Pucknell and Moore.	
3.	P2IEEC5031	Fundamentals of object oriented Language and Database Concepts	Add the topics of how to build software/executable in Unit-1. (relevant to the subject) Assertions missing. Where verifications used? In Unit-1 Give Hands on instead of giving assignment-2.	Suggestions are considered Accepted the course as is
4.	P2IEEC5032	System Verilog		Suggestions are considered After update accepted the course as is
5.	P2IEEC5033	Digital Image Processing	Remove '?' in Unit-1.	Editing is done
6.	P2IEEC504	Digital Signal Processing	Check Zoom FFT in Unit-2. Keep only 2 filters in unit-3. Remove Kaiser. Realisation of IIR and FIR. FIR filter keep only 2. Application specific in unit-5. Keep text book from author Tarun Kumar.	Suggestions are considered After update accepted the course as is
7.	P2IEEC5051	E-Waste Management	Check EST STD in text book.	Suggestions are considered After update accepted the course as is
8.	P2IEECO5052	Principles of Communication Systems	Approved	Accepted the course as is
9.	P2IEECO5053	Biometrics	Approved	Accepted the course as is
10.	P2IEECO5054	IoT and Sensors	Change subject name to 'Sensors and IOT'.	Suggestions are considered After update accepted the course as is
11.	P2IEECL506	Circuit Simulation Laboratory	Approved	Accepted the course as is
12.	P2IEEC61	Analog CMOS VLSI Design	Approved	Accepted the course as is
13.	P2IEEC6021	ITC and Multimedia Communications	Approved	Accepted the course as is
14.	P2IEEC6022	DSP Processor and Applications	Be specific on naming from TMS320C54XX to	Suggestions are considered After update accepted the course as is

15.	P21ECC6023	Embedded Systems	TMS320CC6713.	Accepted the course as is
16.	P21ECC6024	Operating Systems	Check Target Hardware for debugging. Try to fit as core course. Keep Scheduling concepts replacing threats in unit-5.	Suggestions are considered After update accepted the course as is
17.	P21ECC6031	Computer Organization	Approved	Accepted the course as is
18.	P21ECC6032	Control Systems	Move the subject DIP to 6 <sup>th</sup> semester. Move Control Systems to 5 <sup>th</sup> semester.	Suggestions are considered After update accepted the course as is
19.	P21ECC6033	Design for Testability	Approved	Accepted the course as is
20.	P21ECC6034	Artificial Intelligence and Machine Learning in VLSI	Few changes in unit-2 and 3.	Suggestions are considered After update accepted the course as is
21.	P21ECC604	Microwaves and Antennas	Approved	Accepted the course as is
22.	P21ECCO6051	Electronic Instrumentation	Approved	Accepted the course as is
23.	P21ECCO6052	Introduction to Embedded Systems	Approved	Accepted the course as is
24.	P21ECCO6053	Introduction to Image Processing	Approved	Accepted the course as is
25.	P21ECCO6054	Automotive Electronics	Approved	Accepted the course as is
26.	P21ECL606	Analog and Digital VLSI Design Laboratory	Keep Digital VLSI in Part-A Keep Analog VLSI in Part-B	Suggestions are considered Accepted the course as is

Agenda 2: Approval of P22 Scheme and syllabus of 3<sup>rd</sup> to 4<sup>th</sup> Semesters (NEP2020)

As per the guidelines from the Dean Academics, Scheme and syllabus of 3<sup>rd</sup> to 4<sup>th</sup> Semesters of P21 Scheme (NEP2020) is retained for P22 Scheme and BOS(UG) members approved the same

The panel meeting was concluded with an overall summary read by Dr M. J. Anand, Chairman, BOS, stating the suggestions and comments to be taken for implementation with revision of the scheme and course contents. Chairman BOS thanked all the BOS members for their valuable time and valid suggestions.

  
Dr M.J Anand

Chairman – Board of Studies (Bos – UG, E and C)



# P.E.S. COLLEGE OF ENGINEERING: MANDYA

(An Autonomous & Govt. Aided Institution Affiliated to VTU, Belagavi)

## DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Date: 26/06/2023

### Respected Professor's

In order to finalize the syllabus for 5<sup>th</sup> and 6<sup>th</sup> Semester & to present the same for BOS Meeting, you are being assigned to prepare the syllabus for P21 Scheme. Kindly prepare syllabus with following criteria,

- Unit wise syllabus to match the allotted hours of teaching
- Text book & Reference book to be mentioned
- Pedagogy adopted
- Learning validation

**Text Book(s):**

**Reference Book(s):**

**Web and Video link(s):**

**E-Books/Resources:**

### Assignment Questions

- List the unit wise assignment questions,
- Ask at least three HOTS (Higher order Thinking) questions, which promotes critical thinking
- Adopt Problem Based Learning (PBL), which fosters students Analytical skills, develop thinking skills such as the ability to evaluate, generalize, and analyze information rather than simply recall it.

### Review questions

List the questions from all the units

### Course outcomes –

CO1 should contain apply the basic Engineering knowledge;  
Define/identify/memorize/quote/ Explain (In short form less Marks allotted)

CO2 should contain apply the knowledge to illustrate/explain (More Marks allotted)/summarize/write

CO3 should contain analysis of the topic;  
Solve/Sketch/Examine/Discover/Devise/analyze

CO4 should contain Design component; Design/modify/judge/defend/correlate. IF NO Design content then use case studies or it should map with PO7, PO8, and PO9 etc.

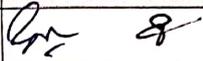
CO5 for lab component of integrated courses

### Course Articulation Matrix: CO-PO MAPPING

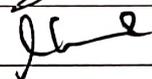
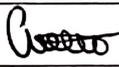
Curriculum  
Committee pre.

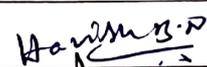
*Mahesh Kumar K. M.*  
**Dr. MAHESH KUMAR. K. M.**  
Associate Professor & HOD  
Dept. of Electrical & Electronics Engineering  
P.E.S. College of Engineering  
Mandya-571401.



Course Code	Course Title	Staff	Signature
P21EE601	Computer Techniques in Power Systems	Dr.SGN+HNS	
P21EE602X	Professional Elective Course – II		
P21EE603X	Professional Elective Course – III		
P21EE604	Control System (Integrated)	HNS	
P21EEO605X	Open Elective–II		
P21EEL606	Power System Simulation Lab	Dr.SGN+ MSS	

Professional Elective Course – I (P21EE503X)		Staff	Signature
Course Code	Course Code		
P21EE6021	PLC and SCADA	Dr. KMM	
P21EE6022	Embedded system & IOT	MSS	
P21EE6023	Electrical Machine Design	DMS	
P21EE6024	Power Quality	SK	

Professional Elective Course – I (P21EE503X)		Staff	Signature
Course Code	Course Code		
P21EE6031	Switchgear and Protection	HCM	
P21EE6032	Renewable Energy Sources	SKR	
P21EE6033	Digital Signal Processing	MSS	
P21EE6034	Flexible AC Transmission Systems	HRC	

Open Elective – I(P21EEO505X)		Staff	Signature
Course Code	Course Code		
P21EEO6051	Utilization of Electrical Power	GH	
P21EEO6052	Electrical Vehicles	BNH	
P21EEO6053	Energy auditing and DSM	MKA	
P21EEO6054	Testing & Commissioning of Electrical Equipment	HCM	

Faculty allotment for syllabus preparation for P21 NEP Scheme is as shown below. Hereby informed to prepare the syllabus considering following factors

- Time and credit allotted for the course
- Pedagogy technique that can be incorporated
- Covering of L1 to L4 blooms outcomes based education criteria
- Availability of text book and Reference books
- Course outcomes, Program outcomes and articulation matrix

Sl. No.	Course Code	Course Title	Staff Members
1	P21EE501	Management and Entrepreneurship	MSS
2	P21EE502	Power System analysis and Stability	Dr. SGN
3	P21EE503X	<b>Professional Elective Course-I</b>	
4	P21EE504	Power Electronics (Integrated)	BNH
5	P21EE505X	<b>Open Elective-I</b>	
6	P21EEL506	Auto CAD Laboratory	DMS
7	P21INT507	Internship-II	
8	P21HSMC508	Employability Enhancement Skills-V	-
9.	P21UHV509	Social Connect and Responsibility	-

Professional Elective Course – I (P21EE503X)		Staff Members
Course Code	Course Code	
P21EE5031	Utilization of Electrical Power	HCM
P21EE5032	Measurement & Instrumentation	SK
P21EE5033	Special Electrical Machines	MKA
P21EE5034	Data communication and Networking	Dr. KMM

Open Elective – I(P21EEO505X)		Staff Members
Course Code	Course Code	
P21EEO5051	Power Plant Engineering	GH
P21EEO5052	Renewable Energy Sources	SKR
P21EEO5053	Fuzzy Logic	MSS+HNS
P21EEO5054	Illumination Engineering	HCM

Last date :- 26/06/2023. (Hand & soft copy)

(PTO)

Course Code	Course Title	Staff Members
P21EE601	Computer Techniques in Power Systems	HNS
P21EE602X	Professional Elective Course – II	
P21EE603X	Professional Elective Course – III	
P21EE604	Control System (Integrated)	HNS
P21EEO605X	Open Elective–II	
P21EEL606	Power System Simulation Lab	Dr.SGN+ MSS
P21EEMP607	Mini–Project	
P21HSMC608	Employability Enhancement Skills–VI	
P21UHV609	Universal Human Values and Professional Ethics	

Professional Elective Course – I (P21EE503X)		Staff Members
Course Code	Course Code	
P21EE6021	PLC and SCADA	Dr. KMM
P21EE6022	Embedded system & IOT	MSS
P21EE6023	Electrical Machine Design	DMS
P21EE6024	Power Quality	SK

Professional Elective Course – I (P21EE503X)		Staff Members
Course Code	Course Code	
P21EE6031	Switchgear and Protection	HCM
P21EE6032	Renewable Energy Sources	SKR
P21EE6033	Digital Signal Processing	MSS
P21EE6034	Flexible AC Transmission Systems	HRC

Open Elective – I(P21EEO505X)		Staff Members
Course Code	Course Code	
P21EEO6051	Utilization of Electrical Power	GH
P21EEO6052	Electrical Vehicles	BNH
P21EEO6053	Energy auditing and DSM	MKA
P21EEO6054	Testing & Commissioning of Electrical Equipment	HCM

All are informed to check mail Id., The soft copy of syllabus pattern is mailed to respective mail Id's

Mandva 19/01/2023  
**Dr. MAHESH KUMAR. K. M.**  
 Associate Professor & HOD  
 Dept. of Electrical & Electronics Engineering  
 P.E.S. College of Engineering  
 Mandva-571404.

# P.E.S. COLLEGE OF ENGINEERING

MANDYA - 571401, KARNATAKA.

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## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Ref.: PESCE/EEE/2022-23/Even/23

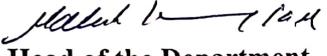
Date: 04/07/2023

Submitted.

### DEPARTMENT CURRICULUM COMMITTEE MEETING

This is to inform all BOS members and teaching staffs that Department Curriculum Committee Meeting is scheduled at 2:30 PM on Wednesday, 05th July 2023 to discuss the 5th and 6<sup>th</sup> semester syllabus of P21 Scheme.

1. Dr. S Gopiya Naik 
2. Mr. B N Harish 
3. Mr. D M Srinivasa 
4. Mr. Sunil Kumar K 
5. Mr. H C Manohar 
6. Mr. Srinath M S 
7. Mrs. Anusha M K 
8. Mrs. Ashwini C N 
9. Ms. Sukanya H N 
10. Ms. Gaana H 
11. Ms. Sushmita K R 
12. Mr. H R Chethan 

  
Head of the Department

(Dr. Mahesh Kumar K M)

**Dr. MAHESH KUMAR. K. M.**  
Associate Professor & HOD  
Dept. of Electrical & Electronics Engineering  
P.E.S. College of Engineering  
Mandya-571401.

TO MR A

☎: 08232-220043 Fax No.: 08232-222075 Website : [www.pescemandya.org](http://www.pescemandya.org)



# P.E.S. COLLEGE OF ENGINEERING

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## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Date: 08-07-2023

### Board of Studies (BOS-UG)

Sl. No	Category	Nominated to the committee	Name of the Person	Signature
1.	Head of the Department	Chairperson	Dr. Mahesh Kumar K M	
2.	Faculty members at different levels & with different specialization	Members Dept. of E & E Engg., PESCE Mandya	Dr. Gopiya Naik	
			Mr. B N Harish	
			Mr. D M Srinivasa	
			Mr. Sunil Kumar C	
			Mr. H C Manohara	
3.	Subject experts from outside college. Nominated by Academic Council	Member	Dr. B V Sumangala Professor, MSRIT, Bangalore	 08/7/23
			Dr. Lakshmi Narayana Professor, BMSCE, Bangalore	
4.	Expert from outside college. Nominated by Vice Chancellor, VTU, Belagavi	Member	Dr. Shobha Shankar Professor, VVCE, Mysore	ABSENT
5.	Representative from Industry/Corporate sector/allied area relating to placement. Nominated by Academic Council	Member	Dr. Senthil Kumar S Global senior IP counsel Hitachi Energy	ONLINE
			Mr. Naveen Kumar Thokala Scientist, TCS Research	ONLINE
6.	Post Graduate Meritorious Alumnus. Nominated by the principal.	Member	Dr. Mohana Lakshmi Associate Professor, MCE Hassan	

(Dr. K. M. MAHESH KUMAR)  
Chairman  
Board of studies, Dept. of E& E Engg.,  
**Dr. MAHESH KUMAR. K. M.**  
Associate Professor & HOD  
Dept. of Electrical & Electronics Engineering  
P.E.S. College of Engineering  
Mandya-571401.

# P.E.S. COLLEGE OF ENGINEERING

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**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

Date: 08/07/2023

## Proceedings of the Board of Studies meeting of Department of Electrical & Electronics Engineering held on 08/07/2023

**Sub:** Approval of 5<sup>th</sup> and 6<sup>th</sup> Semester P21 NEP Syllabus

Dr. Mahesh Kumar K M, Head of the Department and Chairman, Board of Studies welcomed all the members of Electrical & Electronics Engineering Board of studies members to discuss and approval of P21 NEP Syllabus (5<sup>th</sup> and 6<sup>th</sup> Semester)

The distinguished members of the board have gone through the scheme and syllabus of 5<sup>th</sup> and 6<sup>th</sup> semester P21 Scheme.

Dr. B V Sumangala, Professor, MSRIT, Bangalore, have suggested writing course outcome to entire syllabus rather than unit wise.

Dr. Lakshmi Narayana, Professor, BMSCE, Bangalore, have suggested to include Electrical Engineering related Estimation & Costing course in Management Course.

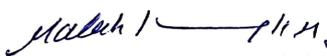
Dr. Senthil Kumar S, Global Senior IP Counsel, Hitachi Energy, have suggested including more number of industry related courses like VLSI & Embedded Systems, PLC & SCADA, AI & ML.

Mr. Naveen Kumar Thokala, Scientist, TCS Research, have suggested including research oriented courses like Research Methodology (Introduction & basics) in order build a strong foundation for research works.

Dr. Mohana Lakshmi J, Associate Professor, MCE, Hassan, alumnus of PESCE, have suggested including trending Power Plant Engineering as Open Elective Course.

After detailed constructive discussion and deliberations, the board members have approved the syllabi for various courses of 5<sup>th</sup> and 6<sup>th</sup> semester for the academic year 2023-24.

At the end of the session, Mr. Sunil Kumar C, Assistant Professor of the host institute has expressed gratitude to all the members for their critical and constructive views for the course.

  
Associate Prof. & Head

**Dr. MAHESH KUMAR. K. M.**  
Associate Professor & HOD  
Dept. of Electrical & Electronics Engineering  
P.E.S. College of Engineering  
Mandya-571401.

# P.E.S. COLLEGE OF ENGINEERING

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## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Date: 12/07/2023

### Actions taken after Board of Studies meeting of Department of Electrical & Electronics Engineering held on 08/07/2023

After detailed constructive discussion and deliberations, the Board of Studies members have suggested some of the changes and improvements in various courses of the syllabus of 5<sup>th</sup> and 6<sup>th</sup> semester- P21 Scheme.

The actions taken are discussed below:

- Course outcomes have been written for entire syllabus (P21 Scheme) of a particular course instead of writing it for individual Module (P18 Scheme).
- Course Title: "Management & Entrepreneurship" with Course Code: P18EE51 has been modified as "Strategic Management & Electrical Estimation". Electrical Estimation & Costing is introduced in 4<sup>th</sup> and 5<sup>th</sup> units of the syllabus.
- Courses like 'Embedded Systems & IOT (P21EE6022)', 'PLC & SCADA ((P21EE6022)' and 'Artificial Neural Networks & Artificial Intelligence' are introduced as Professional electives in various semesters.
- A Course: 'Research Methodology, Report Writing and IPR' with Code: P21EE705 has been introduced for 7<sup>th</sup> semester students for 3 credits.
- A Course: 'Power Plant Engineering' with Code: P21EEO5051 has been introduced as open elective course for 5<sup>th</sup> semester students.

  
Associate Prof. and HOD

**Dr. MAHESH KUMAR. K. M.**  
Associate Professor & HOD  
Dept. of Electrical & Electronics Engineering  
P.E.S. College of Engineering  
Mandya-571401.

# P.E.S. COLLEGE OF ENGINEERING

MANDYA - 571401, KARNATAKA.

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## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING



Date: 08/07/2023

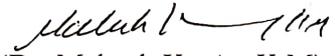
Proceedings of Board of Studies meeting of Department of Electrical & Electronics Engineering  
held on 08-07-2023.

**Sub:** Approval of 5<sup>th</sup> and 6<sup>th</sup> Semester P21 NEP Syllabus

Dr. Mahesh Kumar K M, Head of the Department and Chairman, Board of Studies welcomed the all the members of Electrical & Electronics Engineering Board of studies member to discuss and approval of P21 NEP Syllabus (5<sup>th</sup> and 6<sup>th</sup> semester).

The distinguished members of the board have gone through the scheme and syllabus of 5<sup>th</sup> and 6<sup>th</sup> semester P21 Scheme. After detailed constructive discussion and deliberations, the board members have approved the syllabi for various courses of 5<sup>th</sup> and 6<sup>th</sup> semester for the academic year 2023-24.

At the end of the session, Mr. Sunil Kumar C Assistant Professor of the host institute has expressed gratitude to all the members for their critical and constructive views for the course.

  
(Dr. Mahesh Kumar K M)

Chairman

Board of Studies of E&E Engineering

**Dr. MAHESH KUMAR. K. M.**

Associate Professor & HOD

Department of Electrical & Electronics Engineering

P.E.S. College of Engineering

Mandya-571401.

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Proceeding of BOS Meeting held on 8/7/2023

→ The fifth and sixth semester syllabus have been studied in details & suggestion have been given for slight modification in some units.

→ The syllabus of fifth & sixth semester for NEP 21 scheme have been approved by all the committee members

Mahesh K. V.  
(Dr. MAHESH K. V. M.P.R. X. W.)

Dr. B. V. Sunargala  
08/7/23

Dr. C. Lakshminarayana  
8/7/23

Dr. Mohana Lakshmi J.



# P.E.S. COLLEGE OF ENGINEERING, MANDYA

(An Autonomous & Govt. Aided Institution Affiliated to VTU, Belagavi)

## DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

(Accredited by NBA upto June 2026)

Ref.: PESCE/EEE/2023-24/Even/30

Date: 14/05/2024

### Board of Studies Committee - 2021-24

Date: 15/05/2024

Place: Department Seminar Hall

Time: 10.30AM

**Agenda:** to finalize 7<sup>th</sup> and 8<sup>h</sup> semester Syllabus for NEP21 Scheme

Sl. No.	Committee members	Nominations	Mode of Consent shown for attending meeting
1.	Dr. Mahesh Kumar K M	Chairperson, HOD	Offline
2.	Dr. Gopiya Naik	Internal Members	Offline
	Mr. B N Harish		
	Dr. D M Srinivasa		
	Dr. Sunil Kumar C		
	Mr. H C Manohara		
3.	Dr. B V Sumangala Professor, MSRIT, Bangalore	Subject Experts nominated by academic council	Offline
4.	Dr. Lakshmi Naryana Professor, BMSCE, Bangalore		Offline
5.	Dr. Shobha Shankar Professor, VVCE, Mysore	Subject Expert - University Nominee	Offline
6.	Dr. Senthil Kumar S Global senior IP counsel Hitachi Energy	Industry Experts nominated by Academic Council	Online
7.	Mr. Naveen Kumar Thokala Scientist, TCS Research		Online
8.	Dr. Mohana Laxmi Associate Professor, MCE Hassan	Alumni nominated by Principal	online



# P.E.S. COLLEGE OF ENGINEERING

[Govt. Aided & Autonomous Institution Affiliated to VTU, Belagavi, Accredited by NAAC (A Grade)]

MANDYA-571401, KARNATAKA

Department of Electrical & Electronics Engineering

(NBA Accredited upto June 2026)

Ref: EED/PESCE/BOS/2023-24/06

Date: 06-05-2024

To  
Mr. B N Harish  
Assistant Professor  
PESCE, Mandya

Respected Sir,

**Sub: Invitation to attend Board of Studies Meeting**

I am pleased to invite you to attend the Board of Studies Meeting scheduled on Wednesday 15<sup>th</sup> May 2024 at 10.30 AM in the Department of Electrical & Electronics Engineering, PESCE, Mandya.

Agenda of the meeting:

- To finalize Syllabus of Seventh & Eighth Semester B.E Program (P21 Scheme),
- Approve P22 Scheme & Syllabus

I request your kind self to accept our Invitation and make it convenient to attend the meeting. Your esteemed presence is essential to make use of your expertise in the deliberations of the Meeting.

Thanking you

Yours sincerely

*Mahesh Kumar K M*

(Dr. Mahesh Kumar K M)

HoD & BOS Chair person

Dept. of Electrical & Electronics Engineering  
P.E.S College of Engineering  
Mandya -571 401



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MANDYA-571401, KARNATAKA

Department of Electrical & Electronics Engineering

(NBA Accredited upto June 2026)

Ref: EED/PESCE/BOS/2023-24/06

Date: 06-05-2024

To

Dr. B V Sumangala  
Professor  
MSRIT, Bangalore

Respected Madam,

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Yours sincerely

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HoD & BOS Chair person

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Department of Electrical & Electronics Engineering

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Ref: EED/PESCE/BOS/2023-24/06

Date: 06-05-2024

To  
Dr. D M Srinivasa  
Assistant Professor  
PESCE, Mandya

Respected Sir,

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Yours sincerely

*Mahesh K M*

(Dr. Mahesh Kumar K M)

HoD & BOS Chair person

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Ref: EED/PESCE/BOS/2023-24/06

Date: 06-05-2024

To  
Dr. S Gopiya Naik  
Professor  
PESCE, Mandya

Respected Sir,

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*Mahesh Kumar K M*

(Dr. Mahesh Kumar K M)

HoD & BOS Chair person

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Department of Electrical & Electronics Engineering

(NBA Accredited upto June 2026)

Ref: EED/PESCE/BOS/2023-24/06

Date: 06-05-2024

To  
Dr. Lakshmi Narayana  
Professor  
BMSCE, Bangalore

Respected Sir,

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*Mahesh Kumar K M*

(Dr. Mahesh Kumar K M)

HoD & BOS Chair person

Dept. of Electrical & Electronics Engineering  
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Department of Electrical & Electronics Engineering

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Ref: EED/PESCE/BOS/2023-24/06

Date: 06-05-2024

To

Dr. Lakshmi Naryana

Professor,

BMSCE, Bangalore

Respected Sir,

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Ref: EED/PESCE/BOS/2023-24/06

Date: 06-05-2024

To  
Dr. Mohana Lakshmi  
Associate Professor  
MCE, Hassan

Respected Madam,

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Ref: EED/PESCE/BOS/2023-24/06

Date: 06-05-2024

To

Dr. Senthil Kumar S  
Global Senior IP Counsel  
Hitachi Energy

Respected Sir,

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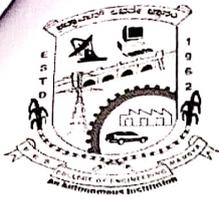
Yours sincerely

(Dr. Mahesh Kumar K M)

HoD & BOS Chair person

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Ref: EED/PESCE/BOS/2023-24/06

Date: 06-05-2024

To  
Dr. Shobha Shankar  
Professor  
VVCE, Mysore

Respected Madam,

**Sub: Invitation to attend Board of Studies Meeting**

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HoD & BOS Chair person

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Department of Electrical & Electronics Engineering

(NBA Accredited upto June 2026)

Ref: EED/PESCE/BOS/2023-24/06

Date: 06-05-2024

To

Dr. Sunil Kumar C

Assistant Professor,

PESCE, Mandya

Respected Sir,

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Ref: EED/PESCE/BOS/2023-24/06

Date: 06-05-2024

To  
Mr. H C Manohara  
Assistant Professor  
PESCE, Mandya

Respected Sir,

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*Mahesh K M*

(Dr. Mahesh Kumar K M)

HoD & BOS Chair person

Dept. of Electrical & Electronics Engineering  
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Department of Electrical & Electronics Engineering

(NBA Accredited upto June 2026)

Ref: EED/PESCE/BOS/2023-24/06

Date: 06-05-2024

To  
Mr. Naveen Kumar Thokala Scientist  
TCS Research  
Hyderabad, Telangana, India

Respected Sir,

**Sub: Invitation to attend Board of Studies Meeting**

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HoD & BOS Chair person

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P.E.S College of Engineering  
Mandya -571 401





# P.E.S. COLLEGE OF ENGINEERING

MANDYA - 571 401, KARNATAKA.

An Autonomous Institution under Visvesvaraya Technological University, Belagavi

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**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

Ref: PESCE/EEE/2023-24/Even/30

Date: 15/05/2024

## Board of Studies Committee-2021-24



Sl. No.	Committee members	Nominations
1.	Dr. Mahesh Kumar K M	Chairperson, HOD
2.	Dr. S Gopiya Naik	Internal Members
	Mr. B N Harish	
	Dr. D M Srinivasa	
	Dr. Sunil Kumar C	
	Mr. H C Manohara	
3.	Dr. B V Sumangala Professor MSRIT, Bangalore	Subject Experts nominated by academic council
4.	Dr. Lakshmi Naryana C Professor, BMSCE, Bangalore	
5.	Dr. Shobha Shankar Professor, VVCE, Mysore	Subject Expert -University Nominee
6.	Dr. Senthil Kumar S Global senior IP counsel Hitachi Energy	Industry Experts nominated by Academic Council
7.	Mr. Naveen Kumar.Thokala Scientist, TCS Research	
8.	Dr. Mohana Lakshmi Associate Professor, MCE Hassan	Alumni nominated by Principal
9.	Venusurya S (4PS20EE046)	Student Representatives
10.	Suchithra N (4PS20EE043)	

*Mahesh K M*  
Dr. MAHESH KUMAR. K. M.  
Associate Professor & HOD  
Dept. of Electrical & Electronics Engineering  
P.E.S. College of Engineering  
Mandya-571401.

# P.E.S. COLLEGE OF ENGINEERING

MANDYA - 571 401, KARNATAKA.

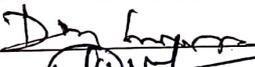
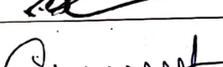
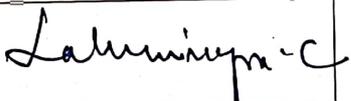
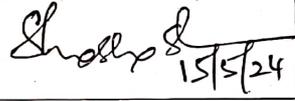
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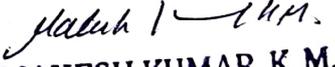
## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Ref: PESCE/EEE/2023-24/Even/30

Date: 15/05/2024

### Board of Studies Committee-2021-24

Sl. No.	Committee members	Nominations	Signature
1.	Dr. Mahesh Kumar K M	Chairperson, HOD	
2.	Dr. S Gopiya Naik	Internal Members	
	Mr. B N Harish		
	Dr. D M Srinivasa		
	Dr. Sunil Kumar C		
	Mr. H C Manohara		
3.	Dr. B V Sumangala Professor MSRIT, Bangalore	Subject Experts nominated by academic council	
4.	Dr. Lakshmi Naryana C Professor, BMSCE, Bangalore		
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6.	Dr. Senthil Kumar S Global senior IP counsel Hitachi Energy	Industry Experts nominated by Academic Council	online
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8.	Dr. Mohana Lakshmi Associate Professor, MCE Hassan	Alumni nominated by Principal	online
9.	Venusurya S (4PS20EE046)	Student Representatives	S. Dawsurya
10.	Suchithra N (4PS20EE043)		Suchithra.N

  
**DR. MAHESH KUMAR. K. M.**  
Associate Professor & HOD  
Dept. of Electrical & Electronics Engineering  
P.E.S. College of Engineering  
Mandya-571401.

# P.E.S. COLLEGE OF ENGINEERING

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## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Date: 15/05/2024

### Proceedings of the Board of Studies meeting of Department of Electrical & Electronics Engineering held on 15/05/2024

**Sub:** Approval of 7<sup>th</sup> and 8<sup>th</sup> Semester P21 NEP Syllabus

Dr. Mahesh Kumar K M, Head of the Department and Chairman, Board of Studies welcomed all the members of Electrical & Electronics Engineering Board of studies members to discuss and take approval of P21 NEP Syllabus (7<sup>th</sup> and 8<sup>th</sup> Semester)

The distinguished members of the board have gone through the scheme and syllabus of 7<sup>th</sup> and 8<sup>th</sup> semester P21 Scheme.

The suggestions given by BOS Members are as follows

Dr. B V Sumangala, Professor, MSRIT, Bangalore, [External Member- Subject Expert]

- Incorporating artificial intelligence and machine learning in Power system related courses
- In the course Electric & Hybrid Vehicles, suggested to refrain by removing basic of Power Electronics in unit -IV.
- Prerequisites should be mentioned for each and every course.
- Discussion on L:T:P and course Credit allocation.

Dr. Lakshmi Narayana C, Professor, BMSCE, Bangalore, [External Member- Subject Expert]

- Improve the course 'Smart Grid' to 'Smart Grid Technology' by adding communication protocols & technology related topics and tailoring the syllabus as per allotted credits.
- Reframing Course Outcomes according to Bloom's taxonomy.
- Introduce the course 'Artificial Intelligence & Artificial Neural Networks' in the earlier semesters rather than in the final year so that the students are able to do minor & major project work in this area.

Dr. Shobha Shankar, Professor, VVCE, Mysore, [Subject Expert - VTU Nominee]

- Suggested to rename the 'Self Study Course' as 'MOOC'S/NPTEL Course' in 8<sup>th</sup> Semester scheme.
- In each course define one of the COs for activity based learning in order to achieve POs.

Dr. Senthil Kumar S, Global Senior IP Counsel, Hitachi Energy, [Industry Experts]

- For the Course "AC & DC Drives" suggested incorporate design concept with Course outcome with design level attributes.
- In the course Power System Operation & Control try to include AI & ML concepts. The Course should have tutorial hour to encourage students to learn MATLAB & AI/ML. This course is also Industrial focused which will be helpful in R&D sector.

☎: 08232-220043 Fax No.: 08232-222075 Website : [www.pescemandya.org](http://www.pescemandya.org)



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**DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING**  
(Accredited by NBA upto June 2026)

Mr. Naveen Kumar Thokala, Scientist, TCS Research, [Industry Experts]

- Suggested including research oriented courses like Research Methodology (Introduction & basics) in order build a strong foundation for research works.

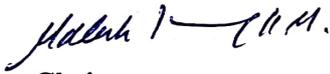
Dr. Mohana Lakshmi J, Associate Professor, MCE, Hassan, [Alumnus of PESCE]

- Suggested including the course Advanced Electric Drives which is very much needed in current scenario of Electric Vehicles.

Internal committee members have incorporated suggestion in the syllabus and Course outcome have been defined by considering blooms taxonomy terms.

After detailed constructive discussion and deliberations, the board members have approved the syllabi for various courses of 7<sup>th</sup> and 8<sup>th</sup> semester for the academic year 2024-25.

At the end of the session, Dr. Mahesh Kumar K M, HOD & Chairperson of BOS has expressed gratitude to all the members for their crucial and constructive views.



**Chairperson**

**BoS, E&E Engineering**

**DR. MAHESH KUMAR. K. M.**  
Associate Professor & HOD  
Dept. of Electrical & Electronics Engineering  
P.E.S. College of Engineering  
Mandya-571401.



PAGE: / /  
DATE: / /

PES College of Engineering, Mandya

Department of Electrical & Electronics Engineering

Proceedings of Board of Studies  
meeting of Electrical & Electronics Engg.  
Department held on 15/05/2024.

Agenda: Approval of syllabus for 7<sup>th</sup> & 8<sup>th</sup>  
Semester, BE - 2021 scheme.

Members Present

Signature

1. Dr. Mahesh Kumar KM  
Chairperson & HOD, E&EE  
PESCE, Mandya.

Mahesh  
15/5/2024

2. Dr. B.V. Sumangala  
Professor, MSRIT, Bangalore

B.V. Sumangala

3. Dr. Lakshmi Narayana C  
Professor, BMSCE,  
Bangalore

Lakshmi C  
15/5/24

4. Dr. Shobha Shankar  
Professor, VVCE,  
Mysore

Shobha S  
15/5/24

5. Dr. Senthil Kumar S  
Global Senior IP Counsel  
Hitachi Energy

online

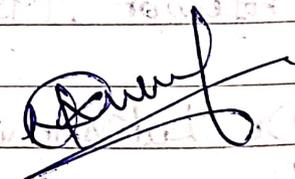
6. Mr. Naveen Kumar Thokala  
Scientist, TCS Research Online

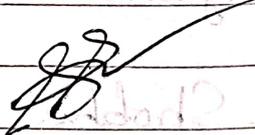
7. Dr. Mohana Laxmi  
Associate Professor, MCE  
Hosur. online

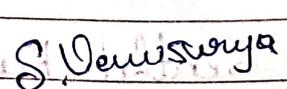
8. Dr. Gopiya Naik  
Prof, Dept. of E&EE  
PESCE, Mandya 

9. Mr. B N Harish  
Asst. Prof. Dept of E&EE  
PESCE, Mandya 

10. Dr. D.M. Srinivasa  
Asst. Prof. Dept. of E&EE  
PESCE, Mandya 

11. Dr. Sunil Kumar C  
Asst. Prof. Dept. of E&EE  
PESCE, Mandya 

12. Mr. H.C. Manoham  
Asst. Prof. Dept. of E&EE  
PESCE, Mandya 

13. Venuswaya S  
Student  
4PS20EE046  
PESCE, Mandya 



14. Sushithra. N  
Student  
4PS20 EE043  
PESCE, Mandya

Sushithra. N



Ref No: PESCE/IP/2023-24/318

Date: 14/05/2024

## BOS (UG) Meeting Proceedings

BOS meeting was conducted on 8<sup>th</sup> May 2024, Wednesday to approve 7<sup>th</sup> and 8<sup>th</sup> Semester P21 Scheme syllabi and 5<sup>th</sup> & 6<sup>th</sup> Semester P22 Scheme which is to be implemented for the academic year 2024 – 25. The following changes were implemented as per the suggestion from the BOS Committee members.

1. Dr. Srinath MS, MCE, Hassan suggested to frame activity based syllabus & Application oriented.
2. All the BOS External members suggested to minimize the syllabus as per the hours of teaching and credits.
3. New edition textbooks and reference books were suggested to include.

### **P21 Scheme 7<sup>th</sup> & 8<sup>th</sup> Sem**

1. **Supply Chain Management - P21IP701** – Dr. H N Diwakar, NIE Mysore and Dr. Srinath MS, MCE, Hassan Suggested to Add Logistics Part to the Supply Chain Management Course accordingly the Logistics Portions has been Included.
2. The External Members Suggested to Include Industry 4.0 and IOT to the Course accordingly the Industry 4.0 and IOT has been included in **Virtual Design & Manufacturing (P21IP7033)** Course.
3. External Members suggested that the Internal BOS & BOE Members along with the coordinator of the department in selecting NPTEL Courses for the Students.

### **P22 Scheme 5<sup>th</sup> & 6<sup>th</sup> Sem**

1. Dr. H N Diwakar, NIE Mysore and Dr. Savitha M SJCE Mysore insisted to Included **Computer Integrated Manufacturing (P22IP5033)** in the 7<sup>th</sup> Sem Instead of 5<sup>th</sup> Sem, Accordingly Computer Integrated Manufacturing (P22IP5033) have been shifted to 7<sup>th</sup> Sem and **Mechatronics** Course have been introduced in the 5<sup>th</sup> Sem.
2. Dr. Srinath MS, MCE, Hassan Suggested to Change the Course Title of **Principles of Marketing (P22IP5051)** to **Marketing Management** accordingly Title of the Course have been changed.
3. Members suggested that the Students should carry **Internship-II (P22INT507)** and **Mini Project (P22IPMP607)** in the Industry to get Industrial Exposure.
4. **External Members suggested to reduce the portions in Just In Time Manufacturing (P21IP6051)** since it is an Open Elective accordingly the portions have been reduced.

**Professor & H.O.D.**  
**Industrial & Production Engg.**  
**P.E.S. College of Engineering**  
**MANDYA - 571 401.**



**ಪಿ.ಇ.ಎಸ್. ಕಾಲೇಜ್ ಆಫ್ ಇಂಜಿನಿಯರಿಂಗ್**

**ಮಂಡ್ಯ - 571401 ಕರ್ನಾಟಕ.**

(ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾನಿಲಯದ ಅಡಿಯಲ್ಲಿನ ಸ್ವಾಯತ್ತ ಸಂಸ್ಥೆ, ಕರ್ನಾಟಕ ರಾಜ್ಯ ಅನುದಾನಿತ ಸಂಸ್ಥೆ ಮತ್ತು ಯು.ಜಿ. ವಿಭಾಗಗಳು ಎನ್.ಬಿ.ಎ.ಯ ಮಾನ್ಯತೆ ಪಡೆದಿರುತ್ತದೆ)

**P.E.S. COLLEGE OF ENGINEERING**

**MANDYA - 571 401 KARNATAKA**

(An Autonomous Institution under Visvesvaraya Technological University, Belagavi Aided by the Govt. of Karnataka and U.G. Programmes are Accredited By National Board of Accreditation )

Ref No: PESCE/DEAN-ACAD/2024-25/8/54

Date: 3<sup>rd</sup> October, 2024

To,

**Dr. Minavathi**  
Professor,  
Dept. of Information Science & Engineering,  
PES College of Engineering,  
Mandya.

Dear Ma'am,

**Sub:** Nomination to the **Board of studies (Dept. of Information Science & Engineering)** of PES College of Engineering, Mandya (Autonomous) for the term August, 2024 to July, 2027 (3 Years) – Reg.

With reference to the above, we are pleased to nominate you as a **Chairperson** to the **Board of studies (Dept. of Information Science & Engineering)** of PES College of Engineering, Mandya (Autonomous) for the term August, 2024 to July, 2027 (3 Years).

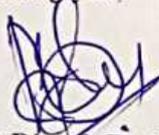
You are requested to conduct the meetings of the **Board of studies (Dept. of Information Science & Engineering)** with the Board of Studies panel members as and when required.

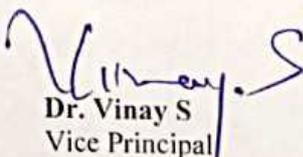
**Functions of Board of Studies:**

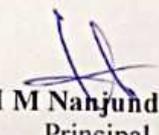
1. Prepare syllabi for various courses keeping in view the objectives of the College, interest of the stakeholders and State / National requirements for consideration and approval of the Academic Council.
2. Suggest methodologies for innovative teaching, learning and evaluation techniques.
3. Coordinate research, teaching, extension and other academic activities in the Department and
5. Any other function that may be assigned by the Academic Council.

After every meeting, you are requested to submit the proceedings of the meeting to the Dean-Academic office.

Thanking you,

  
**Dr. B Dinesh Prabhu**  
Dean Academic

  
**Dr. Vinay S**  
Vice Principal

  
**Dr. H M Nahjundaswamy**  
Principal

**Enclosure: Board of studies (Dept. of Information Science & Engineering) Members Panel List for the term August, 2024 to July, 2027 (3 Years)**

Phone : +918232-220043, 238683, 238042.  
website : www.pescemandya.org, Email : principal@pesce.ac.in



# P.E.S COLLEGE OF ENGINEERING, MANDYA - 571 401

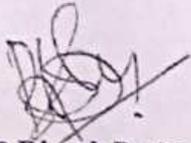
(An Autonomous Institution Affiliated to VTU, Belagavi)

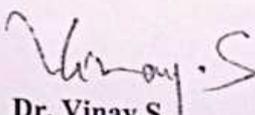
Department of Information Science of Engineering

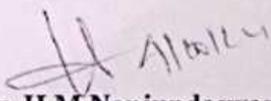
Board of Studies – UG (2024 – 27)

[As per VTU Statutes on Autonomous Colleges (Amended) 2018]

Sl. No.	Category	Nomination of the committee	Name
1.	Head of the Department	Chair Person	<b>Dr. Minavathi</b> Professor
2.	Faculty members of the department at different levels with different specialization having minimum experience of 5 years	Members	<b>Prof. M R Suresh</b> , Associate Professor <b>Dr. T S Prabhakar</b> , Assistant Professor <b>Dr. S M Bramesh</b> , Assistant Professor <b>Prof. Rakshith N</b> , Assistant Professor <b>Prof. Harshith K S</b> , Assistant Professor
3.	Subject experts from outside the college nominated by academic Council	Members	<b>Dr. Prathibha R J</b> Associate Professor, Dept. of CS&E, Sri Jaya Chamarajendra College of Engineering, Mysuru-570006 Contact No: 9986971559 Email: <a href="mailto:rjprathibha@gmail.com">rjprathibha@gmail.com</a> <b>Dr. Raghuveer K</b> Professor, Dept. of IS&E, National Institute of Engineering, Mysore-570008 Contact No: 9448716564 Email: <a href="mailto:raghu@nie.ac.in">raghu@nie.ac.in</a>
4.	Expert from outside college Nominated by Vice chancellor	VTU Nominee	<b>Dr. A B Rajendra</b> Professor, IS&E Dept, Vidyavardhaka College of Engineering, Mysuru -570001 Contact No: 9480204423 Email: <a href="mailto:abrajendra@vvce.ac.in">abrajendra@vvce.ac.in</a>
5.	Representative from Industry Corporate Sector/ Allied area relating to placement nominated by Academic council	Member	<b>Madhura K R</b> Data Visualisation associate JP Morgan chase and co towers, Bangalore.560103 Contact No: 9538223400 Email: <a href="mailto:madhurakr92@gmail.com">madhurakr92@gmail.com</a>
6.	Post Graduate Meritorious alumnus Nominated by Principal	Member	<b>B V Pallavi</b> Lead-ETA, Infosys, Mysore - 570027 Contact No:9632044382 Email: <a href="mailto:pallavi_bedre@infosys.com">pallavi_bedre@infosys.com</a>

  
**Dr. B Dinesh Prabhu**  
Dean Academic  
Dean (Academic)  
P.E.S.C.E., MANDYA

  
**Dr. Vinay S**  
Vice Principal  
P.E.S. College of Engg. Mandya

  
**Dr. H M Nanjundaswamy**  
Principal  
P.E.S. College of Engineering  
Mandya - 571 401.



# Department of Information Science and Engineering

P.E.S. College of Engineering, Mandya – 571401

(An Autonomous Institution under Visvesvaraya Technological University, Belgaum)

Aided by the Govt. of Karnataka

☎: 08232-220043, Fax: 08232-222075; web site: [www.pescemandya.org](http://www.pescemandya.org)



Accredited by NBA

Dr. Minavathi Ph.D  
Prof & Head

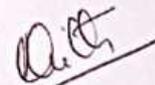
Ph: 08232-220043, Ext-217  
Email: hodis@pesce.ac.in

## Department of Information Science of Engineering Board of Studies – UG (2024 – 26)

03/10/2024

Sl. No.	Category	Nomination of the committee	Name
1.	Head of the Department	Chair Person	Dr. Minavathi
2.	Faculty members of the department at different levels with different specialization having minimum experience of 5 years	Members	1. M.R Suresh 2. Dr. Prabhakar T.S 3. Dr. Bramesh S.M 4. Rakshith .N 5. Harshith K S
3.	Subject experts from outside the college nominated by academic Council	Members	1.Dr.Prathibha R J Associate Professor Dept. of CS&E. Sri Jaya Chamarajendra College of Engineering, Mysuru-570006 Contact No: 9986971559 Email : rjprathibha@gmail.com  2.Dr. Raghuv eer K Professor Dept. of IS&E National Institute of Engineering, Mysore-570008 Contact No: 9448716564 Email: raghu@nie.ac.in
4.	Expert from outside college Nominated by Vice chancellor	Member	1. Dr. Roopa C K Associate Prof, IS&E Dept, Sri Jaya Chamarajendra College of Engg.Mysuru.570006 Contact No:9986682542 Email: ckr@sjce.ac.in  2. Dr. Annapoorna V K Professor, Dept. of CS&E National Institute of Engineering, Mysore.570008 Contact No: 9886134797 Email.annapurnavk@nie.ac.in  3.Dr. A B Rajendra Professor , IS&E Dept, Vidyavardhaka College of Engineering, Mysuru -570001 Contact No: 9480204423 Email: abrajendra@vvce.ac.in

			<p>4. Dr. Ayesha Taranum Professor, Dept. of CS&amp;E Vidyavardhaka College of Engineering, Mysuru-570001 Contact: 9620001132 <a href="mailto:Ayesha.cs@vvce.ac.in">Ayesha.cs@vvce.ac.in</a></p> <p>5. Dr. Vani H Y Associate Prof, Dept. of CS&amp;E, Sri Jaya Chamarajendra College of Engg, Mysuru-570006 Contact No: 9964286326 Email: <a href="mailto:Vanihy@sjce.ac.in">Vanihy@sjce.ac.in</a></p> <p>6. Dr. Vani Ashok Professor, Dept. of CS&amp;E Sri Jaya Chamarajendra College of Engg, Mysuru-570006 Contact No: 9986085007 Email: <a href="mailto:vanisj@sjce.ac.in">vanisj@sjce.ac.in</a></p>
5.	Representative from Industry Corporate Sector/ Allied area relating to placement nominated by Academic council	Member	<p>Madhura K R Data Visualisation associate JP Morgan chase and co towers, Bangalore.560103 Contact No: 9538223400 Email: <a href="mailto:madhurakr92@gmail.com">madhurakr92@gmail.com</a></p>
6.	Post Graduate Meritorious alumnus Nominated by Principal	Member	<p>B V Pallavi Lead-ETA Infosys, Mysore - 570027 Contact No: 9632044382 Email: <a href="mailto:pallavi_bedre@infosys.com">pallavi_bedre@infosys.com</a></p>



**Head of the Department**

Professor and Head  
Information Science & Engg.  
P.E.S. College of Engineering  
Mandya - 571 401.



**P.E.S. COLLEGE OF ENGINEERING, MANDYA**  
**P21 SCHEME (NATIONAL EDUCATION POLICY) W.E.F ACADEMIC YEAR 2021-22**

Bachelor of Engineering (VII –Semester)										
Sl. No.	Course Code	Course Title	Teaching Department	Hrs / Week			Credits	Examination Marks		
				L	T	P		CIE	SEE	Total
1	P21IS701	Industry 4.0 ✓	IS	3	-	-	3	50	50	100
2	P21IS702X	Professional Elective Course – IV	IS	3	-	-	3	50	50	100
3	P21IS703X	Professional Elective Course – V	IS	3	-	-	3	50	50	100
4	P21IS704	Data Science (Integrated)	IS	3	-	2	4	50	50	100
5	P21IS705	Research Methodology, Report Writing and IPR	IS	3	-	-	3	50	50	100
6.	P21IS706	Project Work Phase – I	IS	-	-	-	4	100	-	100
<b>Total</b>							<b>20</b>			

Professional Elective Course – IV (P21IS702X)	
Course Code	Course Title
P21IS7021	Business Analytics
P21IS7022	Big Data
P21IS7023	Pattern Recognition
P21IS7024	Management Information System

Professional Elective Course – V (P21IS703X)	
Course Code	Course Title
✓ P21IS7031	Full Stack Development <i>Check mark!</i>
P21IS7032	Parallel Computing
✓ P21IS7033	Natural Language Processing
P21IS7034	Multicore Programming

Bachelor of Engineering (VIII –Semester)										
Sl. No.	Course Code	Course Title	Teaching Department	Hrs / Week			Credits	Examination Marks		
				L	T	P		CIE	SEE	Total
1	P21IS801	Self-Study Course	IS	-	-	-	2	100	-	100
2	P21INT802	Research / Industry Internship – III	IS	-	-	-	6	-	100	100
3	P21IS803	Project Work Phase – II	IS	-	-	-	8	100	100	100
<b>Total</b>							<b>16</b>			

**P.E.S. COLLEGE OF ENGINEERING, MANDYA**  
**P21 SCHEME (NATIONAL EDUCATION POLICY) W.E.F ACADEMIC YEAR 2021-22**

<b>INDUSTRY 4.0</b> [As per Choice Based Credit System (CBCS) & OBE Scheme] <b>SEMESTER VII</b>			
<b>Course Code:</b>	<b>P21IS701</b>	<b>Credits:</b>	<b>03</b>
<b>Teaching Hours/Week (L:T:P):</b>	<b>3:0:0</b>	<b>CIE Marks:</b>	<b>50</b>
<b>Total Number of Teaching Hours:</b>	<b>40</b>	<b>SEE Marks:</b>	<b>50</b>
<b>Course Learning Objectives:</b> This course will enable the students to			
<ul style="list-style-type: none"> <li>• Student Can Understand conceptual framework for Industry 4.0 with respect to its design principle</li> <li>• Student can understand set the Industry 4.0 strategies,</li> <li>• Student can select the key technologies, determine the projects.</li> <li>• Student can understand digital transformation in current technology</li> </ul>			
<b>UNIT – I</b>			<b>8 Hours</b>
<b>Conceptual Framework for Industry 4.0:</b>			
Introduction, Main Concept & Components of Industry4.0, Proposed framework for Industry 4.0,			
<b>Smart and Connected Products Business Models:</b> Introduction, Business Models, Key Business Models Components of Smart and Connected Products.			
<b>Self-study component:</b>	Proposed framework		
<b>UNIT – II</b>			<b>8 Hours</b>
<b>Data Analytics in Manufacturing:</b> Introduction, Methodology: Techniques used for Predictive Analytics, Forecast Accuracy Calculation.			
<b>Internet of Things &amp; New Value Proposition:</b> Introduction, Internet of Things, Examples of IoT's Creations in Different Industries: Smart Agriculture, Smart City, Smart Life-Wearable Technologies, Smart Health.			
<b>Self-study component:</b>	IoTs Value Creation Barriers		
<b>UNIT – III</b>			<b>8 Hours</b>
<b>Advances in Robotics in the Era of Industry 4.0:</b> Introduction, Recent Technological Components of Robots, Advanced Sensor technologies, Artificial Intelligence, Internet of Robotic Things, Cloud Robotics, Cognitive Architecture for Cyber-Physical Robotics.			
<b>Self-study component:</b>	Industrial Robotics Applications		
<b>UNIT – IV</b>			<b>8 Hours</b>
<b>The Role of Augmented Reality in the Age of Industry 4.0:</b> Introduction, AR Hardware and Software Technology, Industrial Applications of AR.			
<b>Additive Manufacturing Technologies And Applications:</b> Introduction, Additive Manufacturing Technologies, Application Areas of Additive Manufacturing,			
<b>Self-study component:</b>	Impact of Additive Manufacturing Technology on society.		

**P.E.S. COLLEGE OF ENGINEERING, MANDYA**  
**P21 SCHEME (NATIONAL EDUCATION POLICY) W.E.F ACADEMIC YEAR 2021-22**

UNIT – V		8 Hours	
<b>Digital Traceability Through Production Value Chain:</b> Introduction, Digital Traceability Technologies, Applications, Project Management in digital traceability.			
<b>Overview of Cyber Security in the Industry 4.0 Era:</b> Introduction, Security threats & Vulnerabilities of IoT, Industrial Challenge, Evolution of Cyber attacks, Strategic Principals of Cyber Security,			
<b>Self-study component:</b>	Cyber Security Measures		
<b>Course Outcomes:</b> On completion of this course, students are able to:			
COs	Course Outcomes with <i>Action verbs</i> for the Course topics	Bloom's Taxonomy Level	Level Indicator
CO1	Understand Framework for Industry 4.0	Understand	L1
CO2	Identify Importance of Data Analytics for Industry 4.0	Identify	L2
CO3	Analyze the usage & applications of Robotics in Industry 4.0	Analyze	L3
CO4	Evaluate the Digital Traceability & Cyber Security threats' in the Industry 4.0	Evaluate	L4
<b>Text Book(s):</b>			
1. Industry 4.0: Managing The Digital Transformation, By Alp Ustundag, Emre Cevikcan, Springer Series in Advanced Manufacturing, 24 May 2019.			
<b>Reference Book(s):</b>			
1. Industry 4.0 Current Status and Future Trends Edited by Jesús Hamilton Ortiz, Edited by Jesús Hamilton Ortiz, 10 Lower Thames Street, London, EC3R 6AF, United Kingdom, 2005.			
2. Industry 4.0 Concepts, Processes and Systems Edited By <u>Ravi Kant</u> , <u>Hema Gurung</u> , Copyright 2024.			

Course Articulation Matrix (CAM)														
Course Outcomes	Program Outcomes (PO's)												PSO's	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	1											1		1
CO2	1	2										1		
CO3			1									1		3
CO4			1	2	1		1					1		2

**P.E.S. COLLEGE OF ENGINEERING, MANDYA**  
**P21 SCHEME (NATIONAL EDUCATION POLICY) W.E.F ACADEMIC YEAR 2021-22**

<b>DATA SCIENCE</b> [As per Choice Based Credit System (CBCS) & OBE Scheme] <b>SEMESTER – VII</b>			
<b>Course Code:</b>	<b>P21IS704</b>	<b>Credits:</b>	<b>04</b>
<b>Teaching Hours/Week (L:T:P):</b>	<b>3 : 0 : 2</b>	<b>CIE Marks:</b>	<b>50</b>
<b>Total Number of Teaching Hours:</b>	<b>40</b>	<b>SEE Marks:</b>	<b>50</b>
<b>Total Laboratory Hours:</b>	<b>24</b>		
<b>Course Learning Objectives:</b> This course will enable the students to: <ul style="list-style-type: none"> <li>• Describe the fundamentals of Data Science.</li> <li>• Carry out EDA on given dataset.</li> <li>• Use basic machine learning algorithms on a given dataset by considering ethical issues using R.</li> </ul>			
<b>UNIT – I</b>	<b>Introduction to Data Science</b>		<b>08 Hours</b>
<p>What is Data Science? Big Data and Data Science hype - and getting past the hype, Why now? – Datafication, Current landscape of perspectives, Skill sets needed.</p> <p>Statistical Inference - Populations and samples, Statistical modeling, probability distributions, fitting a model.</p>			
<b>Self-study component:</b>	Intro to R.		
<b>Practical Topics:</b> (06 Hours)	Programs to implement the following statistical tests: i) Correlation test between two variables ii) Correlation Matrix between multiple variables iii) Comparing the means of two groups iv) Comparing the means of more than two groups		
<b>UNIT – II</b>	<b>Data Science Process</b>		<b>08 Hours</b>
<p>Basic tools (plots, graphs and summary statistics) of EDA, Philosophy of EDA, The Data Science Process, Case Study: RealDirect (online real estate firm).</p> <p>Three Basic Machine Learning Algorithms - Linear Regression, k-Nearest Neighbors(k-NN), k-means.</p>			
<b>Self-study component:</b>	Exercise: Basic Machine Learning Algorithms.		
<b>Practical Topics:</b> (06 Hours)	Program to perform data exploration and pre-processing on a given dataset. Program to implement linear regression for a given dataset.		
<b>UNIT – III</b>	<b>Applications of Machine Learning Algorithms</b>		<b>08 Hours</b>
<p>Motivating application: Filtering Spam, Why Linear Regression and k-NN are poor choices for Filtering Spam, Naive Bayes and why it works for Filtering Spam.</p> <p>Feature Generation and Feature Selection (Extracting Meaning From Data) - Motivating application: user (customer) retention, Feature Generation (brainstorming, role of domain expertise, and place for imagination), Feature Selection algorithms, Filters; Wrappers.</p>			
<b>Self-study component:</b>	Data Wrangling: APIs and other tools for scraping the Web.		
<b>Practical Topics:</b>	Program to implement Multiple Linear regression for a given dataset.		

**P.E.S. COLLEGE OF ENGINEERING, MANDYA**  
**P21 SCHEME (NATIONAL EDUCATION POLICY) W.E.F ACADEMIC YEAR 2021-22**

(04 Hours)	Program to implement K-NN algorithm on a given dataset.		
<b>UNIT – IV</b>	<b>Recommendation Systems and Mining Social-Network Graphs</b>	<b>08 Hours</b>	
Building a User-Facing Data Product – Algorithmic ingredients of a Recommendation Engine, Dimensionality Reduction, Singular Value Decomposition, Principal Component Analysis. Mining Social-Network Graphs – Social networks as graphs, Clustering of graphs, Direct discovery of communities in graphs, Partitioning of graphs.			
<b>Self-study component:</b>	Neighborhood properties in graphs.		
<b>Practical Topics:</b> (04 Hours)	Build a recommendation system using; i) Item Based Collaborative Filtering ii) User Based Collaborative Filtering		
<b>UNIT – V</b>	<b>Data Visualization</b>	<b>08 Hours</b>	
Basic principles, ideas and tools for data visualization, Examples of inspiring (industry) projects, Exercise: create your own visualization of a complex dataset. Data Science and Ethical Issues – Discussions on privacy, security, ethics, A look back at Data Science.			
<b>Self-study component:</b>	Next-generation data scientists.		
<b>Practical Topics:</b> (04 Hours)	The United States has resettled more than 600,000 refugees from 60 different countries since 2006. <u>Download</u> the department of Homeland Security's annual count of people granted refugee status between 2006-2015. Use ggplot, <u>Illustrator</u> , <u>Inkscape</u> , or <u>Gravit Designer</u> to explore where these refugees have come from by handling Personal Identifiable Information (PII), if any.		
<i>give space</i> ←			
<b>Course Outcomes:</b> On completion of this course, students are able to:			
<b>COs</b>	<b>Course Outcomes with <i>Action verbs</i> for the Course topics</b>	<b>Bloom's Taxonomy Level</b>	<b>Level Indicator</b>
<b>CO1</b>	Explain data science process and statistical inference.	Understand	L2
<b>CO2</b>	Illustrate EDA and feature engineering.	Apply	L3
<b>CO3</b>	Identify basic machine learning algorithms to use in applications.	Apply	L3
<b>CO4</b>	Illustrate mining social-network graphs.	Apply	L3
<b>CO5</b>	Create effective visualization of a given data (to communicate or persuade ethically).	Apply	L3
<b>Text Book(s):</b> 1. Cathy O'Neil and Rachel Schutt. Doing Data Science, Straight Talk From The Frontline. O'Reilly. 2014.			
<b>Reference Book(s):</b> 1. Jure Leskovek, Anand Rajaraman and Jeffrey Ullman. Mining of Massive Datasets. V2.1, Cambridge University Press. 2014. 2. Kevin P. Murphy. Machine Learning: A Probabilistic Perspective. ISBN 0262018020. 2013. 3. Foster Provost and Tom Fawcett. Data Science for Business: What You Need to Know about Data Mining and Data-analytic Thinking. ISBN 1449361323. 2013.			

**Web and Video link(s):**

1. [https://infyspringboard.onwingspan.com/web/en/app/toc/lex\\_auth\\_0130944380316303362566\\_shared/overview](https://infyspringboard.onwingspan.com/web/en/app/toc/lex_auth_0130944380316303362566_shared/overview)

**E-Books/Resources:**

- <https://sites.google.com/view/brameshm>

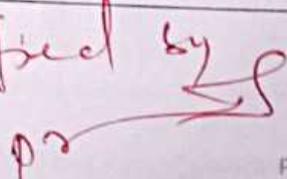
Course Articulation Matrix (CAM)														
Course Outcomes	Program Outcomes (PO's)												PSO's	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	1												1	1
CO2	2				2								1	2
CO3	2				2								1	2
CO4	2				2								1	2
CO5	2				2								1	2

Verified by  
  
 A. BRAMESH (S.W.)

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**PROFESSIONAL ELECTIVE COURSE - IV**

<b>BUSINESS ANALYTICS</b> [As per Choice Based Credit System (CBCS) & OBE Scheme] <b>SEMESTER - VII</b>			
<b>Course Code:</b>	<b>P21IS7021</b>	<b>Credits:</b>	<b>03</b>
<b>Teaching Hours/Week (L:T:P):</b>	<b>3:0:0</b>	<b>CIE Marks:</b>	<b>50</b>
<b>Total Theory Teaching Hours:</b>	<b>40</b>	<b>SEE Marks:</b>	<b>50</b>
<b>Course Learning Objectives:</b> This course will enable the students to: <ul style="list-style-type: none"> <li>• Understand the concept of correlation and its role in analytics.</li> <li>• Learn to calculate correlation between two continuous variables.</li> <li>• Learn how to apply the applications of predictive models to support relational marketing strategies.</li> <li>• Focus on optimization models aimed at the integrated planning of the logistic chain from the perspective of a single company.</li> </ul>			
<b>UNIT - I</b>			<b>8 Hours</b>
Business Analytics: Why Analytics, Business Analytics: The Science of data driven decision making, Descriptive Analysis, Predictive Analytics, Prescriptive Analytics, Big Data Analytics, Web and Social Media Analytics, Machine Learning Algorithms, Framework for data driven decision making, Analytics Capability Building, Roadmap, Challenges.			
<b>Self-study component:</b>	Types (Descriptive, Predictive and Prescriptive).		
<b>UNIT - II</b>			<b>8 Hours</b>
Descriptive Analytics: Data Types and Scales, Types of Data Measurement Scales, Population and Sample, Measures of Central Tendency, Percentile, Decile, and Quartile, Measures of Variation, Measures of Shape -Skewness and Kurtosis.			
<b>Self-study component:</b>	Data Visualization.		
<b>UNIT - III</b>			<b>8 Hours</b>
Decision Support systems: Definition of system, Representation of the decision making process, Evolution of information systems, definition of Decision Support systems.			
Data Warehousing: Definition of Data warehousing, Data warehousing architecture, Cubes and multidimensional analysis.			
<b>Self-study component:</b>	Development of Decision Support systems.		
<b>UNIT - IV</b>			<b>8 Hours</b>
Business Intelligence applications: Marketing models, Relational marketing, sales force management, Business case studies.			
<b>Self-study component:</b>	Cross selling in retail industry.		

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UNIT – V			8 Hours
Logistics and production models: Supply chain optimization, optimization models for logistics planning, Revenue management systems, Business case studies.			
Data Envelopment Analysis: Efficiency measures, efficient frontier, the CCR model, identification of good operating practices.			
<b>Self-study component:</b>	Other models.		
<b>Course Outcomes:</b> On completion of this course, students are able to:			
CO	Course Outcomes with <i>Action verbs</i> for the Course topics	Bloom's Taxonomy Level	Level Indicator
CO1	<b>Understand</b> various elements of analytics business context, technology and data science	Understand	L2
CO2	<b>Apply</b> the emergence of analytics in a competitive strategy.	Apply	L3
CO3	<b>Analyse</b> need of Decision Support systems.	Analyse	L4
CO4	<b>Analyse</b> various tools and techniques in analytics with business applications.	Analyse	L4
CO5	<b>Design</b> and develop techniques to solve problems from different industries.	Design	L5
<b>Text Book(s):</b>			
<ol style="list-style-type: none"> <li>1. U. Dinesh Kumar, "Business Analytical – The science of data driven decision making", Wiley 2017.</li> <li>2. Carlo-Vercellis, "Business intelligence datamining and optimization for decision making", First Edition.</li> </ol>			
<b>Reference Book(s):</b>			
<ol style="list-style-type: none"> <li>1. Business Analytics Principles, Concepts, and Applications: What, Why, and How Paperback – 29 September Marc J. Schniederjans, Dara G. Schniederjans, Christopher M. Starkey.</li> </ol>			

Course Articulation Matrix (CAM)														
Course Outcomes	Program Outcomes (PO's)												PSO's	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	1	1	1									1		2
CO2	1	1	1									1	1	2
CO3	1	2	3	1								1	1	2
CO4	1	2	3	2	1							1	1	2
CO5	1	1	3	2	1					1	1	1	1	2

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<b>BIG DATA</b> [As per Choice Based Credit System (CBCS) & OBE Scheme] <b>SEMESTER – VII</b>			
<b>Course Code:</b>	<b>P21IS7022</b>	<b>Credits:</b>	<b>03</b>
<b>Teaching Hours/Week (L:T:P):</b>	<b>3:0:0</b>	<b>CIE Marks:</b>	<b>50</b>
<b>Total Theory Teaching Hours:</b>	<b>40</b>	<b>SEE Marks:</b>	<b>50</b>
<b>Course Learning Objectives:</b> This course will enable the students to: <ul style="list-style-type: none"> <li>• Understanding the role of data in business intelligence and Business analysis and business at large.</li> <li>• To provide students with the fundamentals and essentials of Big Data.</li> <li>• To discuss the challenges traditional mining algorithms face when analyzing Big Data.</li> <li>• To enable the students to optimize business decisions and create competitive advantage with big data analytics.</li> <li>• To impart the architectural concepts of Hadoop and Map reduce paradigm and to enable the students to make use of programming tools PIG,HIVE and Cassandra.</li> </ul>			
<b>UNIT – I</b>			<b>8 Hours</b>
Types of Digital Data: Classification of Digital Data. Introduction to Big Data: Introduction to Big Data, Characteristics of Data, Definition of Big Data, Challenges with Big Data, Characteristics of Data Which are not Definitional Traits of Big Data, Need of Big Data, Traditional Business Intelligence (BI) versus Big Data. Big Data Analytics: What is Big Data Analytics?, What Big Data Analytics Isn't?, Classification of Analytics, Greatest Challenges that Prevent Businesses from Capitalizing on Big Data, Top Challenges Facing Big Data, Big Data Analytics Important.			
<b>Self-study component:</b>	Basically Available Soft State Eventual Consistency (BASE).		
<b>UNIT – II</b>			<b>8 Hours</b>
The Big Data Technology Landscape: NoSQL (Not Only SQL), Hadoop. Introduction to Hadoop: Introducing Hadoop, Why Hadoop?, Why not RDBMS?, RDBMS versus Hadoop, Distributed Computing Challenges, History of Hadoop, Hadoop Overview, Use Case of Hadoop, Hadoop Distributors, HDFS (Hadoop Distributed File System), Processing Data with Hadoop, Managing Resources and Applications with Hadoop YARN (Yet Another Resource Negotiator).			
<b>Self-study component:</b>	Interacting with Hadoop Ecosystem.		
<b>UNIT – III</b>			<b>8 Hours</b>
Introduction to Hive: What is Hive?, Hive Architecture, Hive Data Types, Hive File Format, Hive Query Language (HQL), RCFile Implementation.			
<b>Self-study component:</b>	User-Defined Function (UDF).		
<b>UNIT – IV</b>			<b>8 Hours</b>
Introduction to Pig: What is Pig?, The Anatomy of Pig, Pig on Hadoop, Pig Philosophy, Use Case for Pig: ETL Processing, Pig Latin Overview, Data Types in Pig, Running Pig, Execution Modes of Pig, HDFS Commands, Relational Operators, Eval Function, Complex Data Types, Piggy Bank,			

*Self-study by SP*

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User-Defined Functions (UDF), Parameter Substitution, Diagnostic Operator, Word Count Example using Pig, When to use Pig?, When not to use Pig?, Pig at Yahoo!.

**Self-study component:** Pig versus Hive.

**UNIT – V**

**8 Hours**

Introduction to Cassandra: Apache Cassandra – An Introduction, Features of Cassandra, CQL Data Types, CQLSH, Keyspaces, CRUD (Create, Read, Update, and Delete) Operations, Collections, Using a Counter, Time to Live (TTL), Alter Commands, Querying System Tables, Practice Examples.

**Self-study component:** Import and Export.

**Course Outcomes:** On completion of this course, students are able to:

COs	Course Outcomes with <i>Action verbs</i> for the Course topics	Bloom's Taxonomy Level	Level Indicator
CO1	Understand the requirements for and constraints in Big Data ecosystem.	Understand	L2
CO2	Apply concepts of Hadoop/Map-reduce framework for solving typical Big data problems	Apply	L3
CO3	Apply the Hive platforms to manage Big data.	Apply	L3
CO4	Apply Pig Latin for solving big data challenges	Apply	L3
CO5	Apply Cassandra query language in handling Big data storage.	Apply	L3

**Text Book(s):**

- Big Data Analytics, Seema Acharya and Subhashini Chellappan. Wiley India Pvt. Ltd. 2<sup>nd</sup> Edition 2019.

**Reference Book(s):**

- Network Data Analytics, Siddesh G M et.al., Springer, 2018

Course Outcomes	Program Outcomes (PO's)												PSO's	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	1	2							2	1		2	1	2
CO2	1	2							2	1		2	1	2
CO3	1	2							2	1		2	1	2
CO4	1	2							2	1		2	1	2
CO5	1	2							2	1		2	1	2

<b>PATTERN RECOGNITION</b>			
[As per Choice Based Credit System (CBCS) & OBE Scheme]			
<b>SEMESTER VII</b>			
<b>Course Code:</b>	P21IS7023	<b>Credits:</b>	03
<b>Teaching Hours/Week (L:T:P):</b>	3:0:0	<b>CIE Marks:</b>	50
<b>Total Number of Teaching Hours:</b>	40	<b>SEE Marks:</b>	50
<b>Course Learning Objectives:</b> This course will enable the students to:			
<ul style="list-style-type: none"> <li>• To learn about supervised and unsupervised pattern classifiers.</li> <li>• To familiarize about different feature extraction techniques.</li> <li>• To explore the role of Hidden Markov model and SVM in pattern recognition.</li> <li>• To understand the application of Fuzzy logic and genetic algorithms for pattern classifier</li> </ul>			
<b>UNIT – I</b>	<b>Pattern Classifier</b>	<b>8 Hours</b>	
Overview of Pattern recognition, Discriminate functions ,Supervised learning , Parametric estimation ,Maximum Likelihood Estimation, Bayesian parameter Estimation , Problems with Bayes approach			
<b>Self-study component:</b>		Pattern classification by distance functions, Minimum distance pattern classifier.	
<b>UNIT – II</b>	<b>Clustering</b>	<b>8 Hours</b>	
Clustering for unsupervised learning and classification, Clustering concept Hierarchical clustering, Graph theoretic approach to pattern Clustering, Validity of Clusters.			
<b>Self-study component:</b>		C Means algorithm,	
<b>UNIT – III</b>	<b>Feature Extraction And Structural Pattern Recognition</b>	<b>8 Hours</b>	
Principle component analysis, Independent component analysis, linear discriminant analysis, Feature selection through functional approximation, Elements of formal grammars, Syntactic description, stochastic grammars.			
<b>Self-study component:</b>		Structural Representation	
<b>UNIT – IV</b>	<b>Hidden Markov Models And Support Vector Machine</b>	<b>8 Hours</b>	
State Machines, Hidden Markov Models, Training, Classification, Support vector Machine			
<b>Self-study component:</b>		Feature Selection.	
<b>UNIT – V</b>	<b>Recent Advances</b>	<b>8 Hours</b>	
Basics of Fuzzy logic, Fuzzy logic ,Fuzzy Pattern Classifiers , Pattern Classification using Genetic Algorithms.			
<b>Self-study component:</b>		Case Study Using Fuzzy Pattern Classifiers and Perception	

**Course Outcomes:** On completion of this course, students are able to:

COs	Course Outcomes with <i>Action verbs</i> for the Course topics	Bloom's Taxonomy Level	Level Indicator
CO1	Differentiate between supervised and unsupervised classifiers	Differentiate	L4
CO2	Classify the data and identify the patterns.	Classify	L4
CO3	Extract feature set and select the features from given data set.	Extract	L3
CO4	Apply fuzzy logic and genetic algorithms for classification problems	Apply	L3

**Text Book(s):**

- Andrew Webb, "Statistical Pattern Recognition", Arnold publishers, London, 2002.

**Reference Book(s):**

- S.Theodoridis and K.Koutroumbas, "Pattern Recognition", 4th Ed., Academic Press. 2009
- C.M.Bishop, "Pattern Recognition and Machine Learning", Springer, 2006.

**Web and Video link(s):**

- [What is Pattern Recognition? A Gentle Introduction \(2024\) - viso.ai](#)
- [Pattern Recognition in Machine Learning \[2024 Guide\] \(analyticsvidhya.com\)](#)

**E-Books/Resources:**

- [Pattern Recognition | Journal | ScienceDirect.com by Elsevier](#)
- [Pattern Recognition and Machine Learning | SpringerLink](#)

Course Outcomes	Program Outcomes (PO's)												PSO's	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	1	1							2			1	1
CO2	3	2	2							2			2	1
CO3	3	3	2							2	2		3	2
CO4	3	3	3							2	2		3	3

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<b>MANAGEMENT INFORMATION SYSTEM</b> [As per Choice Based Credit System (CBCS) & OBE Scheme] <b>SEMESTER VII</b>			
<b>Course Code:</b>	<b>P21IS7024</b>	<b>Credits:</b>	<b>03</b>
<b>Teaching Hours/Week (L:T:P):</b>	<b>3:0:0</b>	<b>CIE Marks:</b>	<b>50</b>
<b>Total Number of Teaching Hours:</b>	<b>40</b>	<b>SEE Marks:</b>	<b>50</b>
<b>Course Learning Objectives:</b> This course will enable the students to: <ul style="list-style-type: none"> <li>• To enable students evaluate the role of information systems in today's competitive business environment</li> <li>• To enable students understand the various knowledge representation methods and different expert system structures as strategic weapons to counter the threats to business and make business more competitive.</li> <li>• Apply a framework for evaluating information-related ethical dilemmas commonly faced by managers.</li> <li>• Enhance self-confidence, ability to make proper decisions and effective communication, and Pursue lifelong learning and continuing education.</li> </ul>			
<b>UNIT – I</b>	<b>Foundation Concepts</b>	<b>08 Hours</b>	
<p><b>Foundations of Information Systems in Business:</b> The Real World of Information Systems, The Fundamental Roles of IS in Business, Types of Information Systems, Managerial Challenges of Information Technology, <b>The Components of Information Systems: System Concepts:</b> A Foundation, Components of Information Systems, Information System Resources, Information System Activities. <b>Competing with Information Technology:</b> Strategic IT, Strategic Uses of Information Technology, building a Customer-Focused Business, The Value Chain and Strategic IS, Reengineering Business Processes, becoming an Agile Company, creating a Virtual Company, building a Knowledge-Creating Company.</p>			
<b>Self-study component:</b>		The Role of e-Business in Business, Trends in Information Systems.	
<b>UNIT – II</b>	<b>E-Business Systems</b>	<b>08 Hours</b>	
<p>Introduction, Cross-Functional Enterprise Applications, Enterprise Application Integration, Transaction Processing Systems, Enterprise Collaboration Systems. Functional Business Systems: Introduction, Marketing Systems, Targeted Marketing, Manufacturing Systems, Human Resource Systems, Accounting Systems. Enterprise Business Systems: Introduction, what is CRM? The Three Phases of CRM, Benefits and Challenges of CRM, trends in CRM. Enterprise Resource Planning: Introduction, what is ERP? Benefits and Challenges of ERP, Trends in ERP. Supply Chain Management: introduction, what is SCM? Benefits and Challenges of SCM, Trends in SCM.</p>			
<b>Self-study component:</b>		Sales Force Automation, Financial Management Systems	
<b>UNIT – III</b>	<b>E-Commerce Fundamentals</b>	<b>08 Hours</b>	
<p>Introduction to e-Commerce, Scope of E-commerce, Essential e- Commerce Processes, Electronic Payment Processes, e-Commerce Trends, e-Commerce Success Factors, Web Store Requirements, Business-to-Business e-Commerce, e-Commerce Marketplaces, Clicks and Bricks in e-Commerce. <b>Decision Support in Business:</b> Introduction, Decision Support Trends, Decision Support Systems, Management Information Systems, Online Analytical Processing, Using Design Support Systems, Executive Information Systems, Enterprise Portals and DecisionSupport, Knowledge management system.</p>			

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<b>Self-study component:</b>		Business and AI, The Domains of Artificial Intelligence	
<b>UNIT – IV</b>	<b>Development Processes</b>	<b>08 Hours</b>	
Developing Business/IT Strategies: Planning Fundamentals: Introduction, Organizational Planning, the Scenario Approach, Planning for Competitive Advantage, Business Models and Planning, Business/IT Architecture Planning, Identifying Business/IT Strategies, Business Application Planning. Implementation Challenges: Implementation, Implementing Information Technology, End-User Resistance and Involvement, Change Management. Developing Business/IT Solutions: IS Development, the Systems Approach, Systems Analysis and Design, Starting the Systems Development Process, Systems Analysis, system design, End user development.			
<b>Self-study component:</b>		Implementing Business Systems	
<b>UNIT – V</b>	<b>Management Challenges</b>	<b>08 Hours</b>	
Security, Ethical, and Societal Challenges of IT: Introduction, Ethical Responsibility of Business Professionals, Computer Crime, Privacy Issues, the Current State of Cyber Law and other Challenges. Security Management of Information Technology: Introduction, Tools of Security Management, Inter-Networked Security Defenses, Other Security Measures, System Controls and Audits. Managing Information Technology: Business and IT, Managing Information Technology, Business/IT Planning, Managing the IT Function, Organizing IT, Outsourcing and Offshoring IT and IS, Failures in IT Management, Management Involvement.			
<b>Self-study component:</b>		Managing Global IT	
<b>Course Outcomes:</b> On completion of this course, students are able to:			
COs	Course Outcomes with <i>Action verbs</i> for the Course topics	Bloom's Taxonomy Level	Level Indicator
CO1	<b>Understand</b> the current generation of computing and information technologies for business and Apply the concepts of Management Information Systems to enhance business processes and support decision making.	Understand	L2
CO2	<b>Develop</b> a strategy to gain a competitive advantage using information technology.	Develop	L3
CO3	<b>Interpret</b> and <b>recommend</b> the use information technology to solve business problems.	Interpret	L2
CO4	<b>Apply</b> a framework and process for aligning organization's IT objectives with business strategy	Apply	L3
<b>Text Book(s):</b>			
2. James A. O' Brien, George M. Marakas: "Management Information Systems", 7 <sup>th</sup> Edition, Tata McGraw Hill, Reprint 2013.			
<b>Reference Book(s):</b>			
1. Kenneth C. Laudon and P. Laudon, "Management Information Systems", 13 <sup>th</sup> Edition, Pearson Education Limited 2014.			
2. Ralph M. Stair and George W. Reynolds, "Principles of Information Systems - A Managerial Approach", 9 <sup>th</sup> edition, Course Technology 2013.			
3. W.S. Jawadkar: Management Information Systems, Tata McGraw Hill 2008.			

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**Web and Video link(s):**

1. <https://youtu.be/5JMkdGQCm4k?list=PLE04B26C87FB0C0C6>
2. <https://youtu.be/-18Py3sX5sM>

**E-Books/Resources:**

1. <https://industri.fatek.unpatti.ac.id/wp-content/uploads/2019/03/186-Management-Information-Systems-James-A.-O%E2%80%99Brien-George-M.-Marakas-Edisi-10-2010.pdf>

Course Articulation Matrix (CAM)														
Course Outcomes	Program Outcomes (PO's)												PSO's	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1				2		2					2		1	1
CO2		2										2	1	
CO3	1		3										2	2
CO4	2	1	2					2					2	2

*B. P. K. S. / 11/6/2024*

**PROFESSIONAL ELECTIVE COURSE- V**

**FULL STACK WEB DEVELOPMENT**  
 [As per Choice Based Credit System (CBCS) & OBE Scheme]  
**SEMESTER – VII**

<b>Course Code:</b>	<b>P21IS7031</b>	<b>Credits:</b>	<b>04</b>
<b>Teaching Hours/Week (L:T:P):</b>	<b>3:0:0</b>	<b>CIE Marks:</b>	<b>50</b>
<b>Total Theory Teaching Hours:</b>	<b>40</b>	<b>SEE Marks:</b>	<b>50</b>

- Course Learning Objectives:** This course will enable the students to:
- Understand the major areas and challenges of web programming.
  - Understand JavaScript runtimes for building servers.
  - Understand front end framework for developing Interactive WebApp using ReactJS.
  - Understand Type script language for robust code and easy maintenance of JavaScript based application.
  - Understand latest Framework for fast API development.

**Course Overview**  
 The course provides fundamental understanding of full stack web development tools and techniques.

**UNIT – I**

**8 Hours**

**Server-Side Action:** Node and NPM Of JavaScript Runtimes and Building (Mostly) Servers First Baby Steps with Node: Installation More Useful: Executing JavaScript Source Files Node's Partner in Crime: NPM A Few More NPM Commands Initializing a New NPM/Node Project Adding Dependencies A Quick Aside: Semantic Versioning Fisher Price's "My First Node Web Server" Bonus Example: Advanced Node and NPM :More on package.json NPM: Other Commands Auditing Package Security Deduplication and Pruning Finding/Searching for Packages sans Browser Updating Packages Publishing/Unpublishing Packages Node: Standard Modules File System (fs)HTTP and HTTPS(http and https) OS (os) Path (path) Process Query Strings (querystring) URL (url) Utilities (util)  
 Textbook: Ch. 1,2

**Self-study component:** The Rest of the Cast

**UNIT – II**

**8 Hours**

**R Client-Side Adventures:** React A Brief History of React Yeah, Okay, History Nerd, That's All Great, but What IS React? The Real Star of the Show: Components Need Info: Props Components (Sometimes) Need Memory: State Making Them Look Good.  
 Textbook: Ch. 3

**Self-study component:** Style In the End Why Reach?

**UNIT – III**

**8 Hours**

**Advanced React A Better Way to Write React Code:** JSX Yeah, Okay, So What Does ItLOOKLIKE? A Slight Detour into Babel Land Compile JSX And Now, Put It All Together Whither Props? Default Props Typing Props  
 Textbook: Ch. 4

**Self-study component:** Component Lifecycle

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UNIT – IV		8 Hours	
<p><b>Building a Strong Foundation:</b> TypeScript What Is TypeScript? Jumping into the Deep End Beyond the Playground Configuring TypeScript Compilation The NittyGitty:Types String Number Boolean Any Arrays Tuples Enums Function Object Null, Void,and Undefined Custom Type Aliases Union Types TypeScript == ES6 Features for“Free”! The let and const Keywords Block Scope Arrow Functions Template Literals Default Parameters Spread and Rest (and as an Added Bonus: Optional Arguments)                      Textbook: Ch. 5</p>			
<b>Self-study component:</b>		Destructuring Classes	
UNIT – V		8 Hours	
<p><b>Advanced TypeScript:</b> Interfaces Argument/Object Interfaces Methods in Interfaces, Interfaces and Classes Extending Interfaces Namespaces and Modules Namespaces Modules Decorators Decorator Factories Third-Party Libraries Debugging TypeScript                      Textbook: Ch. 6</p>			
<b>Self-study component:</b>		Apps Source Maps	
<b>Course Outcomes:</b> On completion of this course, students are able to:			
COs	Course Outcomes with <i>Action verbs</i> for the Course topics	Bloom's Taxonomy Level	Level Indicator
CO1	<b>Explain</b> the role and functions of web servers and server frameworks.	<del>Explain</del> <i>understand</i>	L2
CO2	<b>Apply</b> intermediate and advanced web development practices, basic programming principles for the construction of websites.	Apply	L4
CO3	<b>Design</b> user interactions on web pages and front-end website architecture.	<del>Design</del> <i>Apply.</i>	L3
CO4	<b>Develop</b> a fully functioning website and deploy on a web server meeting the objectives of a particular business/domain	Develop	L4
<b>Text Book(s):</b>			
1. Frank Zammetti-Modern Full-Stack Development Apress 2020			
<b>Reference Book(s):</b>			
1. Basarat Ali Syed - Beginning Node.js-Apress ,2014.			
2. Anthony Accomazzo, Ari Lerner, Clay Allsopp, David Guttman, Tyler Mcginnis, Nate Murray,FullStack React The Complete Guide to ReactJS& Friends, Fullstack.io, 2017			
<b>Web and Video link(s):</b>			
1. <a href="https://www.youtube.com/watch?v=EccJQ05KTf4&amp;list=PLwoh6bBAszPrES-EOajos_E9gvRbL27wz">https://www.youtube.com/watch?v=EccJQ05KTf4&amp;list=PLwoh6bBAszPrES-EOajos_E9gvRbL27wz</a>			
2. <a href="https://www.youtube.com/watch?v=bWACo_pvKxg&amp;list=PLSDeUiTMfxW6VChKWb26Z_mPR4f6fAmMV">https://www.youtube.com/watch?v=bWACo_pvKxg&amp;list=PLSDeUiTMfxW6VChKWb26Z_mPR4f6fAmMV</a>			

Course Articulation Matrix (CAM)														
Course Outcomes	Program Outcomes (PO's)												PSO's	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3													2
CO2	3		2											2
CO3	3	2			2									2
CO4	3				2									2

**P.E.S. COLLEGE OF ENGINEERING, MANDYA**  
**P21 SCHEME (NATIONAL EDUCATION POLICY) W.E.F ACADEMIC YEAR 2021-22**

<b>PARALLEL COMPUTING</b> [As per Choice Based Credit System (CBCS) & OBE Scheme] <b>SEMESTER VII</b>			
<b>Course Code:</b>	<b>P21IS7032</b>	<b>Credits:</b>	<b>03</b>
<b>Teaching Hours/Week (L:T:P):</b>	<b>3:0:0</b>	<b>CIE Marks:</b>	<b>50</b>
<b>Total Number of Teaching Hours:</b>	<b>40</b>	<b>SEE Marks:</b>	<b>50</b>
<b>Course Prerequisites:</b> Computer Organization, Operating System, Design & Analysis of Algorithms, Data Structure			
<b>Course Learning Objectives:</b> This course will enable the students to: <ul style="list-style-type: none"> <li>• To learn the basics of parallel system and how parallel computers work.</li> <li>• To learn how to analyze the correct designs of parallel architectures, especially within the technological constraints.</li> <li>• To prepare students for a career in designing the computer systems of the future.</li> </ul>			
<b>UNIT – I</b>	<b>Introduction to Parallel Computing</b>		<b>08 Hours</b>
Thinking in Parallel, Parallelism Vs. Concurrency, Types and levels of parallelism, Different grains of parallelism, Introduction to parallelization and vectorization: Data dependencies, SIMD technology, Definition of thread and process, Parallel programming models, Decomposition methodologies for parallel program development, The message passing paradigm, load balancing issues for parallel programs, PRAM computational model, Flynn's Taxonomy, current issues in parallel processing, Parallel Processing speedup issues: Amdahl's law.			
<b>Self-study component:</b>	Parallel Processing speedup issues: Gustafson's Laws.		
<b>UNIT – II</b>	<b>Heterogeneous Architectures</b>		<b>08 Hours</b>
Motivation for Heterogeneous Computing, Introduction to heterogeneous architectures- GPU in particular Modern GPU architecture. Introduction to GPU computing, GPU architecture case studies: NVIDIA Fermi Tesla C2050/Kepler K20, languages for parallel computing: MPI Parallel Programming.			
<b>Self-study component:</b>	Languages for parallel computing: OpenMP Parallel Programming.		
<b>UNIT – III</b>	<b>Introduction to CUDA programming Compute Unified Device Architecture</b>		<b>08 Hours</b>
CUDA Architecture, CUDA programming model, execution model, thread organization: Concept of grid, block and thread, thread index generation, warp; memory model: Introduction to global, shared, local memories, usage of cache, texture cache, constant memory, memory banks and bank conflicts. CUDA structure, API and library.			
<b>Self-study component:</b>	CUDA example programs		
<b>UNIT – IV</b>	<b>Multicore Programming with OpenMP</b>		<b>08 Hours</b>
Fundamentals of Shared Memory Programming, Basic OpenMP concepts, PARALLEL directive, data scoping rules, basic OpenMP constructs/directives/calls, examples, parallelizing an existing code using OpenMP, More advanced OpenMP directives and functions.			
<b>Self-study component:</b>	OpenMP performance issues		

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<b>UNIT – V</b>	<b>Problem solving using GPUs and Optimizations and Tools</b>	<b>08 Hours</b>	
Single vs double precision, solving problems that involves Vectors, Matrices, Binomial coefficients, Bernstein coefficients.			
Memory coalescing, Reduction operation using prefix sum example. Usage of shared memory optimally, Performance issues in algorithms- deciding parallelization of a part of algorithm and selecting the highest parallelism, Need of profilers and analyzers.			
<b>Self-study component:</b>	Introduction to CUDA Tools: MemCheck, Command line and Visual Profilers.		
<b>Course Outcomes:</b> On completion of this course, students are able to:			
<b>COs</b>	<b>Course Outcomes</b> with <i>Action verbs</i> for the Course topics	<b>Bloom's Taxonomy Level</b>	<b>Level Indicator</b>
CO1	<b>Understand</b> fundamentals of parallel computing.	Understand	L2
CO2	<b>Design</b> parallel programs for GPU.	Design	L3
CO3	<b>Design</b> OpenMP and CUDA programs.	Design	L3
CO4	<b>Develop</b> parallel algorithms using Pthreads/OpenMP/MPI.	Develop	L4
CO5	<b>Analyse</b> the performance and design the parallel programs.	Analyse	L4
<b>Text Book(s):</b>			
1. AnanthGrama, Anshal Gupta, GreogeKarypis, Vipin Kumar, "Introduction to Parallel Computing", Second Edition.			
2. Parallel Programming in C with MPI and OpenMP by Michael J. Quinn, Tata McGrawHill Edition.			
<b>Reference Book(s):</b>			
1. Jason Sanders and Edward Kandrot, "CUDA by Example: An Introduction to General-Purpose GPU Programming", 2010.			
2. David B. Kirk and Wen-mei W. Hwu, "Programming Massively Parallel Processors: A Hands-On Approach", Second Edition (MK-Morgan Kaufmann Publication)			
3. Advanced computer architecture by Kai Hwong, Tata McGraw-Hill Edition, 2001			
<b>Web and Video link(s):</b>			
1. <a href="https://archive.nptel.ac.in/courses/106/102/106102114/">https://archive.nptel.ac.in/courses/106/102/106102114/</a>			
2. <a href="https://www.youtube.com/watch?v=RpT-fRbQeuM">https://www.youtube.com/watch?v=RpT-fRbQeuM</a>			

**P.E.S. COLLEGE OF ENGINEERING, MANDYA**  
**P21 SCHEME (NATIONAL EDUCATION POLICY) W.E.F ACADEMIC YEAR 2021-22**

Course Articulation Matrix (CAM)														
Course Outcomes	Program Outcomes (PO's)												PSO's	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2											2	2
CO2	2	2	3		2				3			1	1	2
CO3	1	1	3		2				1			3	1	2
CO4	2	2	3		2				3			3	2	3
CO5	1		2						2			2	3	1

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 11/6/2024

<b>NATURAL LANGUAGE PROCESSING</b> [As per Choice Based Credit System (CBCS) & OBE Scheme] <b>SEMESTER – VII</b>			
<b>Course Code:</b>	<b>P21IS7033</b>	<b>Credits:</b>	<b>03</b>
<b>Teaching Hours/Week (L:T:P):</b>	<b>3:0:0</b>	<b>CIE Marks:</b>	<b>50</b>
<b>Total Theory Teaching Hours:</b>	<b>40</b>	<b>SEE Marks:</b>	<b>50</b>
<b>Course Learning Objectives :</b> This course will enable the students to: <ul style="list-style-type: none"> <li>• Student Can Understand Grammar-Processing</li> <li>• Student Can analyze Syntactic Analysis</li> <li>• Student Can explore Relation Extraction</li> <li>• Student can implement Information Retrieval &amp; valuation Lexical Resources.</li> </ul>			
<b>UNIT – I</b>			<b>8 Hours</b>
<b>Overview and language modelling:</b> Overview: Origins and challenges of NLP-Language and Grammar-Processing Indian Languages-NLP Applications-Information Retrieval. Language Modelling: Various Grammar- based Language Models-			
<b>Self-study component:</b>	Statistical Language Model.		
<b>UNIT – II</b>			<b>8 Hours</b>
<b>Word level and syntactic analysis:</b> Word Level Analysis: Regular Expressions-Finite State Automata-Morphological Parsing-Spelling Error Detection and correction-Words and Word classes-Part-of Speech Tagging. Syntactic Analysis: Context-free Grammar..			
<b>Self-study component:</b>	Constituency- Parsing-Probabilistic Parsing		
<b>UNIT – III</b>			<b>8 Hours</b>
<b>Extracting Relations from Text: From Word Sequences to Dependency Paths:</b> Introduction, Subsequence Kernels for Relation Extraction, A Dependency-Path Kernel for Relation Extraction and Experimental Evaluation.			
<b>Mining Diagnostic Text Reports by Learning to Annotate Knowledge Roles:</b> Introduction, Domain Knowledge and Knowledge Roles, Frame Semantics and Semantic Role Labelling.			
<b>Self-study component:</b>	Learning to Annotate Cases with Knowledge Roles and Evaluations.		
<b>UNIT – IV</b>			<b>8 Hours</b>
<b>Evaluating Self-Explanations in iSTART:</b> Word Matching, Latent Semantic Analysis, and Topic Models: Introduction, iSTART: Feedback Systems, iSTART: Evaluation of Feedback Systems, <b>Textual Signatures: Identifying Text-Types Using Latent Semantic Analysis to Measure the Cohesion of Text Structures:</b>			

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Introduction, Cohesion, Coh-Matrix, Approaches to Analyzing Texts, Latent Semantic Analysis, Predictions.

**Self-study component:** Results of Experiments.

**UNIT – V** **8 Hours**

**INFORMATION RETRIEVAL AND LEXICAL RESOURCES:**  
 Information Retrieval: Design features of Information Retrieval Systems-Classical, Non classical, Alternative Models of Information Retrieval – valuation Lexical Resources: World Net-Frame Net Stemmers-POS Tagger.

**Self-study component:** Research Corpora.

**Course Outcomes:** On completion of this course, students are able to:

COs	Course Outcomes with <i>Action verbs</i> for the Course topics	Bloom's Taxonomy Level	Level Indicator
CO1	Define the importance of natural language	Define	L1
CO2	Understand the concepts Text mining.	Understand	L2
CO3	Analyze the natural language text corpus.	Analyze	L3
CO4	Illustrate information retrieval techniques	Illustrate	L3

**Text Book(s):**  
 1. Tanveer Siddiqui, U.S. Tiwary, "Natural Language Processing and Information Retrieval", Oxford University Press, 2008.  
 2. Anne Kao and Stephen R. Poteet (Eds), "Natural Language Processing and Text Mining", Springer-Verlag London Limited 2007.

**Reference Book(s):**  
 1. Daniel Jurafsky and James H Martin, "Speech and Language Processing: An introduction to Natural Language Processing, Computational Linguistics and Speech Recognition", 2nd Edition, Prentice Hall, 2008.  
 2. James Allen, "Natural Language Understanding", 2nd edition, Benjamin/Cummings publishing company, 1995.  
 3. Gerald J. Kowalski and Mark.T. Maybury, "Information Storage and Retrieval systems", Kluwer academic Publishers, 2000.

Course Outcomes	Program Outcomes (PO's)												PSO's		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO1	1		1												1
CO2		2		1											1
CO3				1								1			1
CO4	2	1				1						1			1

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<b>MULTICORE PROGRAMMING</b> [As per Choice Based Credit System (CBCS) & OBE Scheme] <b>SEMESTER – VII</b>			
<b>Course Code:</b>	<b>P21IS7034</b>	<b>Credits:</b>	<b>03</b>
<b>Teaching Hours/Week (L:T:P):</b>	<b>3:0:0</b>	<b>CIE Marks:</b>	<b>50</b>
<b>Total Theory Teaching Hours:</b>	<b>40</b>	<b>SEE Marks:</b>	<b>50</b>
<b>Course Learning Objectives:</b> This course will enable the students to: <ul style="list-style-type: none"> <li>• Identify the limitations of ILP and the need for multicore architectures.</li> <li>• Solve the issues related to multiprocessing and suggest solutions.</li> <li>• Make out the salient features of different multicore architectures and how they exploit parallelism.</li> </ul>			
<b>UNIT – I</b>			<b>8 Hours</b>
<b>Introduction:</b> The ERA of multicore machines, a taxonomy of parallel machines, a glimpse of contemporary computing machines: the cell be processor, nvidia's kepler, amd's apus, multicore to many-core: tilera's tile-gx8072 and intel's xeon phi. Performance metrics, predicting and measuring parallel program performance. Ch 01			
<b>Self-study component:</b>	Amdahl's Law, Gustafson-Barsis's Rebuttal		
<b>UNIT – II</b>			<b>8 Hours</b>
<b>Multicore and parallel program design:</b> The Pcam Methodology, Decomposition Patterns: Task Parallelism, Divide-And-Conquer Decomposition, Geometric Decomposition, Recursive Data Decomposition, Pipeline Decomposition, Event-Based Coordination Decomposition Ch 02			
<b>Self-study component:</b>	Program Structure Patterns		
<b>UNIT – III</b>			<b>8 Hours</b>
<b>Shared-memory programming: OpenMP :</b> your first openmp program, variable scope: openmp integration v.0: manual partitioning, openmp integration v.1: manual partitioning without a race condition, openmp integration v.2: implicit partitioning with locking, openmp integration v.3: implicit partitioning with reduction. Ch 04			
<b>Self-study component:</b>	Loop-Level Parallelism		
<b>UNIT – IV</b>			<b>8 Hours</b>
<b>Distributed memory programming:</b> Communicating processes, mpi, core concepts, your first mpi program, program architecture: spmd, mpmd. Point-to-point communication. Ch 05			
<b>Self-study component:</b>	Alternative Point-To-Point Communication Modes		

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UNIT – V			8 Hours	
<b>GPU programming:</b> Gpu Programming, Cuda's Programming Model: Threads, Blocks, And Grids, Cuda's Execution Model: Streaming Multiprocessors And Warps, Memory Hierarchy: Local Memory/Registers, Shared Memory, Constant Memory.				
<b>Self-study component:</b>		Optimization Techniques: Block And Grid Design		
<b>Course Outcomes:</b> On completion of this course, students are able to:				
COs	Course Outcomes with <i>Action verbs</i> for the Course topics	Bloom's Taxonomy Level	Level Indicator	
CO1	<b>Explain</b> the current trends in computing machine design and how these trends influence software development	Understand	L2	
CO2	<b>Define</b> fundamental concepts of parallel programming and its design issues	Understand	L2	
CO3	<b>Demonstrate</b> the role of OpenMP and programming concept	Apply	L3	
<b>Text Book(s):</b>				
1. Gerassimos Barlas, "Multicore and GPU Programming: An Integrated Approach Paperback", 1st Edition, Morgan Kaufmann, 2014.				
<b>Reference Book(s):</b>				
1. Multicore Programming , Increased Performance through Software Multi-threading by Shameem Akhter and Jason Roberts , Intel Press , 2006				
2. Yan Solihin, "Fundamentals of Parallel Multicore Architecture", 1st Edition, CRC Press/Taylor and Francis, 2015.				
<b>Web and Video link(s):</b>				
3. <a href="https://www.youtube.com/watch?v=vhlwuNjzVG4&amp;list=PLE638294EA3288272">https://www.youtube.com/watch?v=vhlwuNjzVG4&amp;list=PLE638294EA3288272</a>				
4. <a href="https://www.youtube.com/watch?v=pPStdjuYzSI">https://www.youtube.com/watch?v=pPStdjuYzSI</a>				
5. <a href="https://www.youtube.com/watch?v=fYJP9F_y4rl&amp;list=PL1VUG29jR5kka2eze4U4ngLcf7U7HCqGh">https://www.youtube.com/watch?v=fYJP9F_y4rl&amp;list=PL1VUG29jR5kka2eze4U4ngLcf7U7HCqGh</a>				

Course Articulation Matrix (CAM)														
Course Outcomes	Program Outcomes (PO's)												PSO's	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3													2
CO2	3	2			2									2
CO3	3	2	3		2									2



**Department of Information Science and Engineering**  
**P.E.S. College of Engineering, Mandya – 571401**

(An Autonomous Institution under Visvesvaraya Technological University, Belgaum)  
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☎: 08232-220043, Fax: 08232-222075; web site: [www.pescemandya.org](http://www.pescemandya.org)



Accredited by NBA 2017 to 2020, 2020 to 2023 and 2023 to 2026

Ph: 08232-220043, Ext-217

Email: [hodis@pesce.ac.in](mailto:hodis@pesce.ac.in)

Dr. Minavathi Ph.D

Prof & Head

Date: 29-05-2024

To,

Dean (Academic)  
PESCE  
Mandya.

Respected sir,

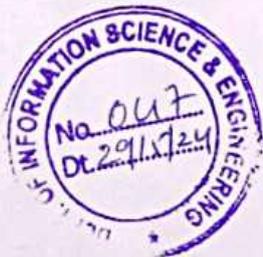
**Sub:** Requisition to conduct BOS meeting on 1-06-2024

As per your letter No: **PES/ACAD-Dean/2023-2024/89** dated **26-03-2024**, we would like to bring to your kind notice that, we have scheduled the BOS meeting to **identify the courses and to formulate the syllabi of BE fourth year ( 7<sup>th</sup> and 8<sup>th</sup> sem ) P21scheme** for the academic year 2024-2025, on **01-06-2024** Saturday at 10 am in ISE seminar hall. We hereby request you to kindly permit us to conduct the BOS meeting.

Thanking you,

Dr. Minavathi  
Prof & Head  
BOS Chairman  
IS & E Department  
PESCE, Mandya

Professor and Head  
Information Science & Engg.  
P.E.S. College of Engineering  
Mandya - 571 401.





# Department of Information Science and Engineering

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Accredited by NBA 2017-18 to 2019-20 and 2020-21 to 2022-23

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Email: [hodis@pesce.ac.in](mailto:hodis@pesce.ac.in)

Dr. Minavathi, Ph.D  
Prof & Head

Date: 01-06-2024

To  
The Dean (Academic)  
PESCE, Mandya.

Dear Sir,  
We have conducted the BOS meeting of IS&E department, PESCE, Mandya on 01-06-2024 at 10.30 AM in IS&E Department to discuss and finalize the Syllabus of VII & VIII Sem P21 Scheme.

The proceedings of the meeting are attached herewith.  
The following members were present during the meeting.

Sl.No.	Name of the Members	Designation	College	Signature
1.	Dr.Minavathi	Professor & HOD	PESCE, Mandya	

INTERNAL

Sl.No.	Name of the Members	Designation	College	Signature
1.	M.R.Suresh	Associate Professor	PESCE, Mandya	
2.	Dr. Mahesh Kaluti	Associate Professor	PESCE, Mandya	
3.	Dr. Geethanjali T. M	Asst. Professor	PESCE, Mandya	
4.	T.S.Prabhakar	Asst. Professor	PESCE, Mandya	
5.	S.M.Bramesh	Asst. Professor	PESCE, Mandya	

EXTERNAL

Sl.No.	Name of the Members	Designation	College	Signature
1.	Dr. Devaki P D	Professor, Dept. of IS&E	NIE, Mysore	
2.	Manojna C S L	Senior Software Engineer, CISCO, Juniper networks	CISCO, B'lore	
3.	Pallavi Bedre	Lead-ETA	Infosys, Mysore	



BOS Chairman  
BOS Chairman  
Information Science & Engg. Dept.  
P.E.S. College of Engineering,  
Mandya, Karnataka.



# Department of Information Science and Engineering

**P.E.S. College of Engineering, Mandya – 571401**

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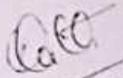
**Dr.Minavathi, Ph.D**  
Prof & Head

Ph: 08232-220043, Ext-217  
Email: [hodis@pesce.ac.in](mailto:hodis@pesce.ac.in)

Date: 01.06.2024

## Proceedings of External BOS meeting

1. BOS Chairperson welcomed all the BOS members.
2. Faculties presented the framed syllabus.
3. BOS Members (Internal and External) gave their opinions or suggestions. The important suggestions given are:
  - Check whether there are recent text books, if any, for the courses.
  - Specify the lab experiments in detail.
  - Do COs and POs, PSOs mapping for each course.
4. BOS Chairperson instructed to Faculty members who frame the syllabus for incorporate all the given suggestions related to subject.
5. BOS Chairperson closed the Meeting by thanking one and all.

  
**Signature with seal**  
Professor and Head  
Information Science & Engg.  
P.E.S. College of Engineering  
Mandya - 571 401

SUGGESTIONS REPORTED BY EXTERNAL BOS MEMBERS REGARDING THE SYLLABUS FRAMING FOR 7th AND 8th SEMESTER SUBJECTS OF NEP P21SCHEME.

**Manogna C S L**

Senior Software Engineer  
CISCO, Juniper Network.

**Industry 4.0:-**

- Discuss Smart Metering AMI (Advanced Metering Infrastructure), DA (distributed Automation) and DER, case studies to be discussed.

**Business Analytics:-**

- Application of analytic models with examples
- Use of business analytics in information technology to be discussed

**Big Data :-**

- Discuss various tools and framework available to analyse Big Data

**Pattern Recognition :-**

- Highlight different pattern recognition algorithm

**Management Information System:-**

- Correlate Business Analytics and its application use in MIS.
- Use of Business Analytics data to improve business and strategy
- Case studies and MIS tools / framework to be introduced.

**Parallel Computing :-**

- Discuss / Introduce / Provide assignments on multi threaded programming using POSIX threads
- Discuss applications of parallel computing in AI and ML
- Discuss case studies / applications of real problems which needs parallelism

**Full stack development :-**

- Course name is generic while the course discusses only on web development "Full Stack Development" would be a better name.
- Introduce full stack development
- What qualities a programmer to be a full stack developer
- Instead of focussing only on respective tool discuss on couple of more tool

**Multicore Programming :-**

- Application case studies to be discussed
- Correlate parallel computing course concepts

**Data Science:-**

- Relate AI and ML in Data Science
- Discuss - privacy issues in data analytics introduce PII personally identifiable information in the context of privacy

**Natural Language Processing: -**

- Discuss the importance of state machine / state diagrams.
- Discuss application of NLP in AI chat GPT and chat Bits
- Application of NLP in debugging real world problem.

SUGGESTIONS REPORTED BY EXTERNAL BOS MEMBERS REGARDING THE SYLLABUS FRAMING FOR 7th AND 8th SEMESTER SUBJECTS OF NEP P21SCHEME .

**Dr. Devaki P D**

Professor

Dept. Of CS and E

NIE, Mysore.

- CO – PO-PSO Mappings needs revisit
- Active verbs like understand can be replaced and also multiple action verbs in same CO, needs change
- Level-3 is missing in most of the courses in CO-PO mapping
- In the course data science CO2 and CO4 needs revisit on framing of theory question will be difficult
- In the course pattern recognition include “Basics of Fuzzy logic ”topic which is in the self study component to the main topic
- In few of the course PSO'S one not mapped.
- In the course NLP CO-PO mapping one at level-1 please revisit

SUGGESTIONS REPORTED BY EXTERNAL BOS MEMBERS REGARDING THE SYLLABUS FRAMING FOR 7th AND 8th SEMESTER SUBJECTS OF NEP P21SCHEME .

**Pallavi Bedre**

Corporate Trainer

Infosys, Mysore.

**Industry 4.0:-**

- Robotics introduce prompt engineering

**Business Analytics:-**

- Introduce the tools
- Research work assignments to explore tools

**Management Information System:-**

E commerce

- Introduce one assignment to analyze at least three types of marketing system.

**Full Stack Development :-**

- Comparison of MEAN stack and MERN stack

**Data Science:**

- On PII related activity to categorize the data

**Natural Processing Language:**

- LLM Introduce Prompt engineering with chat GPT

  
Professor and Head  
Information Science & Engg.  
P.E.S. College of Engineering  
Mandya - 571 401.

1. Industry 4.0
  - Discuss Smart Metering (AMM - Advanced Metering Infrastructure), DA (Distributed Automation) and DER. Case studies to be discussed.
2. Business Analytics
  - Application of analytic models with examples
  - Use of business analytics in Information Tech. to be discussed.
3. Big Data
  - Discuss various tools and frameworks available to analyse big data.
4. Pattern Recognition
  - Highlight different pattern recognition algorithms
5. Management Information System
  - Correlate Business Analytics and its application/ use in MIS.
  - Impact/ use of Business Analytics data to improve business and strategy.
  - Case studies and MIS tools/framework to be introduced.
6. Parallel computing
  - Discuss/Introduce/provide assignments on multithreaded programming using POSIX threads
  - Discuss applications of parallel computing in AI & ML
  - Discuss case studies/applications of real problems which needs parallelism.

## 7. Fullstack Development

- Course name is generic while the course discusses only on web development. "Fullstack web development" would be a better name.
- Introduce full stack development.
- What qualifies a programmer to be a fullstack developer.
- Instead of focusing only on ~~Python~~ tool discuss on couple of more tools.

## 8. Multicore Programming:

- Applications / case studies to be discussed.
- Correlate Parallel computing course concepts here.

## 9. Data Science:

- Relate AI & ML in Data Science
- Discuss Security/Privacy issues in data analysis. Introduce PII - Personally Identifiable Information in the context of privacy.

## 10. Natural Language Processing

- Discuss the importance of state machine / state diagrams.
- Discuss application of NLP in AI, ChatGPT and ChatBots.
- Application of NLP in debugging real world problem.

Dr P. DEVAH, NIE, Mysur

## Remarks

- ① Co-PO-PSO mappings needs revisit
- ② Data verbs like understand can be replaced  
• & also. multiple action verbs in the same CO, needs change
- ③ Level -3 is missing in most of the Courses in Co-PO mapping
- ④ in the Course Data science CO2 + CO4 needs revisit on Inaugural theory question will be difficult
- ⑤ In the Course pattern recognition include "Basics of Fuzzy logic" topic which is in the self-study component to it main topic.
- ⑥ In few of the Courses PSO's are not mapped

P.T.O

⑦

In the Course N&P

Co-po mappings are at level -  
pls verify

~~P. [Signature]~~  
1/06/24

Pallon  
Copy  
Bwin

## Business Analytics:-

1. Introduce the Tools
2. Research work assignments to explore tools.

## Industry 4.0

1. Robotics: Introduce Prompt Engineering

## Management Information System:-

### E-commerce:

1. Introduce one assignment to analyze atleast 3 types of marketing system

## Full Stack Development:-

1. Comparison of MEAN Stack and MERN Stack

## Data Science:

1. One PII related activity  
To categorize the data

## Natural Processing Language:

1. LLM: Introduce Prompt Engineering  
With Chat GPT

**SUGGESTIONS REPORTED BY EXTERNAL BOS MEMBERS REGARDING THE SYLLABUS FRAMING FOR 7th AND 8th SEMESTER SUBJECTS OF NEP P21SCHEME .**

**Manogna C S L**

Senior Software Engineer  
CISCO, Juniper Network.

**Industry 4.0:-**

- Discuss Smart Metering AMI (Advanced Metering Infrastructure), DA (distributed Automation) and DER, case studies to be discussed.

**Business Analytics:-**

- Application of analytic models with examples
- Use of business analytics in information technology to be discussed

**Big Data :-**

- Discuss various tools and framework available to analyse Big Data

**Pattern Recognition :-**

- Highlight different pattern recognition algorithm

**Management Information System:-**

- Correlate Business Analytics and its application use in MIS.
- ---Use of Business Analytics data to improve business and strategy
- Case studies and MIS tools / framework to be introduced.

**Parallel Computing :-**

- Discuss / Introduce / Provide assignments on multi threaded programming using POSIX threads
- Discuss applications of parallel computing in AI and ML
- Discuss case studies / applications of real problems which needs parallelism

**Full stack development :-**

- Course name is generic while the course discusses only on web development "Full Stack Development" would be a better name.
- Introduce full stack development
- What qualities a programmer to be a full stack developer
- Instead of focussing only on respective tool discuss on couple of more tool

**Multicore Programming :-**

- Application case studies to be discussed
- Correlate parallel computing course concepts

**Data Science:-**

- Relate AI and ML in Data Science
- Discuss ~~privacy~~ / *privacy* issues in data analytics introduce P11 personally identifiable information in the context of privacy

**Natural Language Processing: -**

- Discuss the importance of state machine / state diagrams.
- Discuss application of NLP in AI chat GPT and chat Bits
- Application of NLP in debugging real world problem.

**SUGGESTIONS REPORTED BY EXTERNAL BOS MEMBERS REGARDING THE SYLLABUS FRAMING FOR 7th AND 8th SEMESTER SUBJECTS OF NEP P21SCHEME .**

**Dr. Devaki P D**

Professor

Dept. Of CS and E

NIE, Mysore.

- CO – PO-PSO Mappings needs revisit
- Active verbs like understand can be replaced and also multiple action verbs in same CO, needs change
- Level-3 is missing in most of the courses in CO-PO mapping
- In the course data science CO2 and CO4 needs revisit on framing of theory question will be difficult
- In the course pattern recognition include “Basics of Fuzzy logic” topic which is in the self study component to the main topic
- In few of the course PSO'S one not mapped.
- In the course NLP CO-PO mapping one at level-1 please revisit

SUGGESTIONS REPORTED BY EXTERNAL BOS MEMBERS REGARDING THE SYLLABUS FRAMING FOR 7th AND 8th SEMESTER SUBJECTS OF NEP P21SCHEME .

**Pallavi Bedre**

Corporate Trainer

Infosys, Mysore.

**Industry 4.0:-**

- Robotics introduce prompt engineering

**Business Analytics:-**

- Introduce the tools
- Research work assignments to explore tools

**Management Information System:-**

E commerce

- Introduce one assignment to analyze at least three types of marketing system.

**Full Stack Development :-**

- Comparison of MEAN stack and MERN stack

**Data Science:**

- On PII related activity to categorize the data

**Natural Processing Language:**

- LLM Introduce Prompt engineering with chat GPT



# Department of Information Science and Engineering

P.E.S. College of Engineering, Mandya - 571401

(An Autonomous Institution under Visvesvaraya Technological University, Belgaum)

Aided by the Govt. of Karnataka

☎: 08232-220043, Fax: 08232-222075; web site: [www.pescemandya.org](http://www.pescemandya.org)



Accredited by NBA

Ph: 08232-220043, Ext-217

Email: [hodis@pesce.ac.in](mailto:hodis@pesce.ac.in)

**Dr.Minavathi, Ph.D**  
Prof & Head

Date: 30.05.2024

To,

The Dean Academic  
PESCE, Mandya.

Respected Sir,

Subject: Finalizing Syllabus for 4<sup>th</sup> year (P21 Scheme).

Ref: No. PES/ ACAD - DEAN /2023-24/89 Dated: 26-03-2024

With respect to the above subject, Internal BOS meeting was held on 30-05-2024 in the department of Information Science and Engineering to finalizing the Syllabus for 4<sup>th</sup> year (P21 Scheme). The suggestions given by the members were noted and the proceeding is hereby attached with this letter. The following members were present in the meeting.

Sl. No.	Staff Name	BOS (UG)	Signature
1.	Dr. Minavathi	Chairperson	
2.	Prof. M R Suresh	Member	
3.	Dr. Mahesh Kaluti	Member	
4.	Prof. T S Prabhakar	Member	
5.	Prof. Bramesh S M	Member	
6.	Prof. Rakshith N	Member	
7.	Prof. B S Puttaswamy	Member	
8.	Prof. Harshith K S	Member	



**Professor and Head**  
Information Science and Engineering  
Professor and Head  
Information Science & Engg.  
P.E.S. College of Engineering  
Mandya - 571 401.



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Accredited by NBA

Dr.Minavathi, Ph.D  
Prof & Head

Ph: 08232-220043, Ext-217  
Email: hodis@pesce.ac.in

Date: 30.05.2024

## Proceedings of the meeting

1. BOS Chairperson welcomed all the BOS members.
2. Faculties presented the framed syllabus of fourth year (P21 Scheme) one by one.
3. Each faculty gave their opinions or suggestions. The suggestions given are:
  - Check whether there are recent text books, if any, for the courses.
  - Specify the lab experiments in detail.
  - Do COs and POs mapping for each course.
4. BOS Chairperson instructed to incorporate all the above given suggestions.
5. BOS Chairperson closed the Meeting by thanking one and all.

Signature with seal  
Professor and Head  
Information Science & Engg.  
P.E.S. College of Engineering  
Mandya - 571 401.

Handwritten notes in the left margin:  
- A small circular mark.  
- "Mandya M.R."  
- "List."  
- "Pr."  
- "P."  
- "R."



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Ph: 08232-220043, Ext-217

Email: [hodis@pesce.ac.in](mailto:hodis@pesce.ac.in)

Dr. Minavathi Ph.D  
Prof & Head

## Department of Information Science of Engineering Board of Studies – UG (2024 – 26)

Sl. No.	Category	Nomination of the committee	Name
1.	Head of the Department	Chair Person	Dr.Minavathi
2.	Faculty members of the department at different levels with different specialization having minimum experience of 5 years	Members	1.Dr.Mahesh Kaluti 2. M.R Suresh 3.T.S Prabhakar 4.S.M Bramesh 5.Rakshith .N
3.	Subject experts from outside the college nominated by academic Council	Members	1.Dr.Prathiba Associate Professor Dept. of CS&E Sri Jaya Chamarajendra College of Engineering, Mysuru Contact No: 9986971559  2.Dr.Raghuveer K Professor Dept. of IS&E National Institute of Engineering, Mysore. Contact No: 9448716564
4.	Expert from outside college Nominated by Vice chancellor	Member	1.Dr.Roopa C K Asst.Prof, IS&E Dept, Sri Jaya Chamarajendra College of Engg,Mysuru. Contact No:9986682542  2. Dr. Annapoorna V K . Dept. of CS&E National Institute of Engineering, Mysore. Contact No: 9886134797  3.Dr. A B Rajendra Professor IS&E Dept. Vidyavardhaka College of Engineering, Mysuru Contact No: 9480204423

			<p>4. Dr. Aysha Taranum Asst. Professor Dept. of CS&amp;E Vidyavardhaka College of Engineering, Mysuru Contact: 9620001132</p> <p>5. Dr. Vani H Y Asst. Prof, Dept. of CS&amp;E, Sri Jaya Chamarajendra College of Engg. Mysuru. Contact No: 9964286326</p> <p>6. Dr. Vani Ashok Associate Professor Dept. of CS&amp;E Sri Jaya Chamarajendra College of Engg. Mysuru Contact No: 9986085007</p>
5.	Representative from Industry Corporate Sector/ Allied area relating to placement nominated by Academic council	Member	<p>Madhura K R Data Visualisation ssociate JP Morgan chase and co towers, Bangalore. Contact No: 9538223400</p>
6.	Post Graduate Meritorious alumnus Nominated by Principal	Member	<p>Dr. B V Pallavi Lead-ETA Infosys, Mysore Contact No: 9632044382</p>



*Deeth*  
Professor and Head  
Information Science & Engg.  
P.E.S. College of Engineering  
Mandya - 571 401.



# Department of Information Science and Engineering

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Ph: 08232-220043, Ext-217

Email: [hodis@pesce.ac.in](mailto:hodis@pesce.ac.in)

Date: 09-09-2023

To

The Dean (Academic)  
PESCE, Mandya.

Dear Sir,

We have conducted the BOS meeting of IS&E department, PESCE, Mandya on 09-09-2023 at 10.30 AM in IS&E Department to discuss and finalize the Syllabus of V& VI Sem P21 Scheme.

The proceedings of the meeting are attached herewith.  
The following members were present during the meeting.

Sl.No.	Name of the Members	Designation	College	Signature
1.	Dr.Minavathi	Professor & HOD	PESCE, Mandya	

### INTERNAL

Sl.No.	Name of the Members	Designation	College	Signature
1.	M.R.Suresh	Associate Professor	PESCE, Mandya	
2.	Dr. Mahesh Kaluti	Associate Professor	PESCE, Mandya	
3.	T.M. Geethanjali	Asst. Professor	PESCE, Mandya	
4.	T.S.Prabhakar	Asst. Professor	PESCE, Mandya	
5.	S.M.Bramesh	Asst. Professor	PESCE, Mandya	

### EXTERNAL

Sl.No.	Name of the Members	Designation	College	Signature
1.	Dr. Geetha Kiran A	Professor and Head, Dept. of CS&E.	MCE, Hassan	
2.	Dr. Devaki P D	Professor, Dept. of IS&E	NIE, Mysore	
3.	Manojna C S L	Senior Software Engineer, CISCO, Juniper networks	Novell, B'lore Cisco	
4.	Pallavi Bedre	Lead-ETA	Infosys, Mysore	

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ISE

Professor and Head  
Information Science & Engg.  
P.E.S. College of Engineering,  
Mandya - 571 401.

**SUGGESTIONS REPORTED BY EXTERNAL BOS MEMBERS REGARDING THE  
SYLLABUS FRAMING FOR 5<sup>TH</sup> AND 6<sup>TH</sup> SEMESTER SUBJECTS OF NEP P21  
SCHEME**

**Dr.Geetha Kiran**  
Professor  
Dept of CS&E  
MCE,Hassan

1. Include ability enhancement courses, preferably practical oriented
2. Suggest a Bucket of ability enhancement courses, where the students can choose any one of them
3. Include value added courses in non-credit courses to improve the skills of the students with the current trend
4. Include mini project/activities in most of the courses for evaluation rather than regular writing test
5. Frame course outcomes with the intention of getting outcome for the course, not unit wise
6. Evaluation scheme could be more of activity
7. Pre-requisition of the course has to be thought as a bridge course prior to the semester, so as to bridge the course gap
8. Course outcomes have to be redefined/revisited
9. Introduce scenario based problems for laboratory.

**SUGGESTIONS REPORTED BY EXTERNAL BOS MEMBERS REGARDING THE  
SYLLABUS FRAMING FOR 5<sup>TH</sup> AND 6<sup>TH</sup> SEMESTER SUBJECTS OF NEP P21  
SCHEME**

**SUGGESTIO  
SYLLABUS**

**Dr. Devaki P**  
Professor  
Dept of CSE  
NIE, Mysore

1. Refer the VTU notification regarding CIE & SEE (2021-22 and 2022-23 scheme)
2. For Software Engineering & management: action verbs of CO's need to be redefined independent to modules/units and include latest version of textbook
3. For Computer Networks: unit 3 and 4 labels to be redefined
4. PO's and PSO's are not mapped for few courses
5. Suggested to replace C# with some core course (instead of language)

THE

**SUGGESTIONS REPORTED BY EXTERNAL BOS MEMBERS REGARDING THE  
SYLLABUS FRAMING FOR 5<sup>TH</sup> AND 6<sup>TH</sup> SEMESTER SUBJECTS OF NEP P21  
SCHEME**

**Manojna**  
CISCO  
9008013228

**Software Engineering & Project management**

- Discuss scrum, Agile, daily standup meetings, sprint planning, writing/tracking user stories
- Discuss resource planning/management and tools used for project management
- Highlight phases of software development and testing(requirement analysis, Design, Develop, test and Deploy)

**Computer Networks**

- Discuss and compare OSI layer with TCP/IP
- Visit of information at each layer(frame, packet, datagram/segment)
- Discuss and contrast routing and switching addressing concepts in routing & switching (IP address v/s MAC address)
- Compare IPv4 v/s Ipv6

**JAVA & J2EE**

- Highlight OOPS in contrast to Java
- Compare Java with C++
- Discuss major Java packages(J2EE,JDBC, CGI, servlets and JS)

**Robotic Process Automation**

- Importance of automation and its applications to the nature of tasks
- What is the significance/need of the word "robotic" in the course name ?

**Computer graphics with OpenGL**

- Compare Raster v/s Vector graphics
- Discuss typeset fonts, anti-aliasing
- Discuss a simple OpenGL programs and its capabilities

**Information Retrieval**

- Essential to introduce information types, data storage, file systems
- Searching and Sorting techniques for information retrieval

**Machine Learning**

- Introduce types of data and its characteristics
- Preprocessing data techniques to be highlighted
- Example programs to run on simple datasets

**Computer Networks Lab**

- Focus on Fundamentals, networking commands and tools
- Use wireshark packet analyser to capture and visualize packets and its headers/contents

### **Software Testing**

- Importance of software testing to be highlighted

### **Advanced Computer Networks**

- All fundamentals to be discussed in 5<sup>th</sup> semester computer networks
- Use wireshark to practically illustrate various layers, its headers in packets

### **Cloud Computing**

- Introduce SaaS, Naas, Paas etc.,
- Discuss case studies using AWS, OCS etc.,

**SUGGESTIONS REPORTED BY EXTERNAL BOS MEMBERS REGARDING THE  
SYLLABUS FRAMING FOR 5<sup>TH</sup> AND 6<sup>TH</sup> SEMESTER SUBJECTS OF NEP 21  
SCHEME**

**B.V.PALLAVI**  
Lead-ETA  
Infosys, Mysore

**Software engineering & Project management**

- Include more information on scrum and kanban, Agile jargons

**Advanced Java & J2EE**

- Include regular expressions & lambda functions so as to motivate the students by easing the complications

**Information Retrieval**

- Introduce few concepts of file structures to make students understand the problem

**Computer Networks Lab**

- Frame scenario based questions for the lab

**Software Testing**

- Emphasize importance of testing

**Cloud Computing**

- Types of cloud must be well explained with real time examples



**Professor and Head  
Information Science & Engg.  
P.E.S. College of Engineering  
Mandya - 571 401.**



**Department of Information Science and Engineering**

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Ph: 08232-220043, Ext-217

Email: [hodis@pesce.ac.in](mailto:hodis@pesce.ac.in)



Date: 30/08/2023

To,  
The Academic Dean  
P.E.S. College of Engineering,  
Mandya.

Dear Sir,

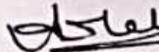
**Sub : BOS(UG- 5<sup>th</sup> and 6<sup>th</sup> semesters) Meeting – reg.**

As per your direction, BOS Meeting IS&E is arranged on 09/09/2023 at IS&E department from 10.30am to discuss and approve the syllabus of 5<sup>th</sup> and 6<sup>th</sup> semester (2021 scheme) B.E. List of BOS Members of department of I & E is enclosed with this letter.

This is for your kind information and needful.

Thanking you,

Yours Sincerely,

  
20/8/23  
Head of Department  
**Dr. ANITHA M.L.**  
Professor & Head  
Dept. of Information Science & Engg.  
P.E.S. College of Engineering,  
Mandya - 571 401.

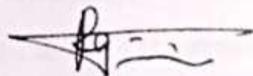
Agenda :

1. Approving scheme and syllabus of 5<sup>th</sup> and 6<sup>th</sup> semesters (2021 scheme) B.E.( IS & E).

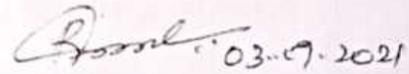
504

**Department of Information Science and Engineering**  
**Board of Studies - UG (2021 - 24)**  
**(As per VTU Status an Autonomous Colleges (Amended) 2018)**

Sl. No.	Category	Nomination of the committee	Name
1.	Head of the Department	Chair Person	<b>Dr. M L Anitha Prof &amp; HOD</b>
2.	Faculty members of the department at different levels with different specialization having minimum experience of 5 years	Members (Max of 5)	<b>Dr. H M Sanjay Asso Prof.</b> <b>M R Suresh Asso Prof.</b> <b>T M Geethanjali Asst. Prof.</b> <b>T S Prabhakar Asst. Prof.</b> <b>S M Bramesh Asst. Prof.</b>
3.	Subject experts from outside the college nominated by academic Council	Members (Max of 2)	<b>Dr. Geetha Kiran A</b> Professor and Head, CS&E, MCE, Hassan. Mobile No: 9448179074 Email: agk@mcehassan.ac.in <b>Dr. Devaki P D</b> Professor and Head, IS&E, NIE, Mysore Mobile No: 99453 08952 Email: devaki@nie.ac.in
4.	Expert from outside college Nominated by Vice chancellor	Propose 6 members where the University nominates any ONE member	<b>Dr. Uma B</b> Professor & Head, IS&E, MCE, Hassan Mobile No: 9964911267, Email: bu@mcehassan.ac.in
5.	Representative from Industry Corporate Sector/ Allied area relating to placement nominated by Academic council	One member	<b>Manojna C S L</b> Senior Software Engineer CISCO, Juniper networks, Novell Mobile No: 9008013228 Email: manojnacsl@gmail.com
6.	Post Graduate Meritorious alumnus Nominated by Principal	One member	<b>Pallavi Bedre</b> Lead-ETA Infosys, Mysore Mobile No: 9632044382 Email: Pallavi_Bedre@infosys.com



**Dr. R Girisha**  
Dean - Academic  
**Dr. R. Girisha**  
Dean (Academic)  
P.E.S.C.E., Mandya.



**Dr. R M Mahalingegowda**  
Principal PRINCIPAL  
PES College of Engineering,  
Mandya - 571 401.

09/09/2023

SGE & CIE → Ability Enhancement Course  
for 3rd to 5th Semester.

Streamline the course to open elective

MRS: SCRUM → Agile methods  
Remove levels with CO's

EN: 502 Computer Networks  
Credits (04) → (3)  
5th unit ~~refine~~

02 → illustrate

MLA Advanced Grammar 1200

Regular Expression } 3rd unit  
pattern matching }

Co, → rephrase.

SMS: RPA

Co2 → change (use)

Co5 → po's mapping Articulation Matrix

MLA

CE42

(5033)

SMS

5034

Co10 → change reference (understand)

file structure

Co's & po's mapping matrix

MLA: 504 ML Integrated

MLA: Introduction to Java (open elective)  
Reduce the syllabus content little bit  
Poo's mapping not done.

MLA: Web technology (open elective)

TSP: Fundamentals of DS (open elective)

Unit-1 Self study prefix to postfix.

TSP: Fundamentals of DB (OE)

Unit - II

RNS

CNL

NCS<sub>2</sub> → Simulation.

Scenario based Problem of solving by students.

HCS: Software testing (601)

C<sub>3</sub> → Apply ↔ Investigate.

ML: Advance CNL:

Course content added to previous semester  
- Self study more clear.

RN

- Teaching Hours (Remove).
  - Credit → (Remove).
  - Change the format (← "1") (Lab?)
  - Network layer I & II in unit III & IV
  - Refer 5th unit. → Reduce
  - Sequence of TCP & UDP
  - CO 2 → Illustrate ~~before~~ X
  -
- 

CN-2.

- 1) Check format.
- 2) Concept with scenario with C program
- 3) Workshop →
- 4) 1/50 ?
- 5) Add Subnetting in consistency
- 6) Specific Program in self study
- 7)

AR & VR

→ Self study → check.

OOMD

S:

CLO:

Co<sub>1</sub>: Parent Superclass

Co<sub>2</sub>: Acquire Superclass

Co<sub>1</sub>

Co<sub>2</sub> → Construct → reference

PAN

TSP: Check with PoS mapping

AR & VR

RN:

CC

AKK:

PoS mapping

BSP

Unix shell

HKS:-

ST lab

Ability Enhancement courses → 1 Credit

CIE & SEE → to discuss with Dean office

VTU

Stream wise

Minimum of (12) → without Assignment } CIE marks.  
(8) → Activities.

To include File systems. ← Some were

VTU

P18CS13/23 → Shruthi PS

P18CS32 → Dr. Nagarathna

P18CS46 → Sindhu B.S.

09/23

IS & E - 5/6 semester (BOS)

Sem :

(MANOJNA CSL/9008013228)

①. Software engineering & Project mgmt:

- Discuss <sup>(Agile)</sup> scrum, daily standup meetings, sprint planning, writing/tracking user stories
- Project/Configuration Mgmt: Discuss resource planning/mgmt and tools used for project mgmt
- Highlight phases of software development and testing (Requirement analysis, Design, Develop, Test, Deploy)
- Highlight OpenSource development/testing model.

② Computer Networks:

- Discuss and compare OSI layer with TCP/IP
- List of information at each layer (frame, packet, datagram/segment)
- Discuss and contrast Routing and Switching Addressing concepts in Routing & Switching (IP addr vs MAC addr)
- compare IPv4 vs IPv6 and its need
- Reference books: Data Communication (Forouzan) Unix Network Programming (Richard W Stevens)

③ Java & J2EE:

- Highlight OOPS in contrast to Java.
- Compare Java with C++
- Discuss major Java packages (J2EE, JDBC, CGI) Servlets, JS

④ Robotic Process Automation:

- Importance of Automation and its application to the nature of tasks
- What is the significance/need of the word "Robotic" in the course name - please review.

- 5) Computer Graphics with OpenGL.
- compare Raster vs Vector graphics
  - Discuss typeset fonts, anti-aliasing
  - Discuss a simple OpenGL programming library capabilities.

6) Information Retrieval:

- It is essential to introduce information types, data storage, file systems
- Searching & sorting techniques for information retrieval.

7) Machine Learning:

- Introduce types of data and its characteristics
- Preprocessing data techniques to be highlighted.
- Example programs to run on simple datasets

8) Computer Networks lab:

- Focus on fundamentals, networking commands and tools
- Use Wireshark packet analyzer to capture and examine packets and its headers / contents.

9) Software Testing:

- Importance of software testing, to be highlighted
- All fundamentals to be discussed in 5sem Computer Networks, course.

10) Advanced Computer Networking:

- Use Wireshark to practically illustrate version layers, its headers in packets

11) Cloud Computing:

- Introduce SaaS, IaaS, PaaS etc.
- Discuss case studies using AWS, OCS, etc.,

Diya

\* Do include Ability Enhancement Courses, preferably practical oriented.

You can give a bucket of ability Enhancement courses, where the students can choose ~~these~~ any one of them.

\* Value added courses can also be included in non-credit courses to improve the skills of the students with the current trend.

\* Do include mini projects / activities in most of the courses for evaluation rather than regular writing test.

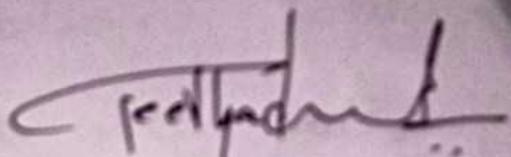
\* Do frame course outcomes with the intention of getting outcome for the course not unit wise.

\* Evaluation scheme can be more of activity.

\* Pre-requisites of the course has to be thought of. → we can teach them has bridge course prior to the semester - bridging should happen

\* Course outcomes have to be redefined/revisited

\* Introduce scenario based problems for laboratory.

  
[Dr. Geetha Kiran A]

#  
2023

## ISAE

### 1) Software Engg & Project Management :-

Include more information on Scrum and Kanban

All Scrum Jargons

All Agile Jargons to be introduced

### 2) Advanced Java & JRE :-

Include Regular Expressions & Lambda Functions

It will be motivating students by seeing the complications

### 3) Information Retrieval :-

Introduction regarding few concepts of file structure

to make students understand the problem.

### 4) Computer Networks :-

Frame Scenario based questions for the lab

### 5) Software Testing :-

Importance of Testing must be emphasized

### 6) Cloud Computing :-

Types of cloud must be well explained  
with real time examples

B. V. Palle

9/9/23

Suggested to refer the VTU notification regarding CIE & SEE (21-22 and 22-23 scheme)

- ② Software Engng & project management
- Action verbs of Cos to be refined
  - Better to have Cos independent of modules / units
  - Text book Edition. Content to be included

### ③ II Computer n/w's

① Credit should be 3  
LTP is 3:0:0 instead of 3:0:2

② Unit 3 & unit 4 labels to be refined

③ III Advanced Java

P.T.O

POs & PSOs are not mapped for few  
of our courses.

IV Suggested to replace C# with  
Some Core Course (instead of a  
language)

P. Devaki  
09/09/23  
(P. DEVAKI)  
NIE, Mysore

# Department of Mechanical Engineering

## P21 Scheme - V and VI Semester Syllabus

### Table of Proceedings/ Suggestions given by BOS Experts and implementation /Rectification

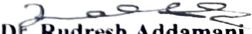
Sl No	Name of the BOS Member	Suggestions given by experts	Rectifications/Implementations or Suggestions taken by Department
1.	<b>Dr. R. KESHAVAMURTHY</b> Professor & Head Department of Mechanical Engg. DayanandaSagar College of Engg. Bengaluru-560078	1. Management and Entrepreneurship: Institutional support and Government schemes available for start-up may be included.	Suggestion is considered and incorporated in the syllabus.
		2. Consider merging of advanced joining techniques with advanced machining techniques, if AJT is not covered in next semesters.	AJT will be included in the syllabus of higher semester.
		3. Recommended to include Reference book- Madhav S Padhke for Design of Experiments. Also consider few case studies.	Reference book- Madhav S Padhke is included as a reference book in the syllabus.
		4. Microprocessor and Mechatronics may be included as elective subjects for mechanical students.	Suggestion is considered and it will be incorporated in P22 scheme.
		5. Concepts of Automated Guided Vehicles (AGV) may be included in Computer Integrated Manufacturing or Robotics and Automation.	Suggestion is considered and incorporated in the syllabus.
		6. Metal matrix composites may be included in the Advanced Engineering materials. Include Manufacturing aspects of metal matrix composites.	Suggestion is considered and incorporated in the syllabus.
		7. Rename Automatic Control Engineering as Control Engineering.	Suggestion is considered and incorporated in the syllabus.
		8. Include concepts of Hydrogen Energy in Alternate fuels and energy conservation.	Suggestion is considered and incorporated in the syllabus.
		9. Concept of charging stations to be included in the Electrical and Hybrid vehicles subject.	Suggestion is considered and incorporated in the syllabus.
		10. Consider case studies on Electronic components in Unit-4 and 5 for FEM subject.	Suggestion is considered and incorporated in the syllabus.
		11. Concept of FAME-01 and FAME-02 to be included in Electric and Hybrid vehicles subject.	Suggestion is considered and incorporated in self-study component.

2.	<b>Dr. RAMAMOCHAN Y S</b> Professor and Head Department of Aerospace Engineering, BMS College of Engineering, Bengaluru – 560019	1. For P21ME501 Add Govt. schemes, MSME etc., as self study component.	Suggestion is considered and incorporated in the syllabus.
		2. DME-I – Add design thinking concepts to self-study.	The concept is included in other subject.
		3. TOE- Add Possible python program tool usage for stress calculation.	Discussed with the subject expert and the same syllabus retained.
		4. 5 <sup>th</sup> sem – Offer introductory course on Aircrafts before rocket propulsion elective.	The elective 'Aircraft and Rocket Propulsion' is a course that covers the fundamental propulsion aspects of aircraft and rocket engines. In this course, the first three units cover the essential fundamentals of aircraft engines. However, a topic aircraft component nomenclature that deals with the basic aircraft components and their function is added in unit 1.
		5. Open elective – Mechatronics and Microprocessor can be offered to mechanical students.	Discussed with internal BOS members will be offered in new scheme.
		6. ESA can be offered to mechanical students also.	Suggestion is considered and it will be incorporated in P22 scheme.
		7. Alternate fuels, Energy Conversion and Conservation – Title change.	Suggestion is considered and incorporated in the syllabus.
		8. Change Automatic Control Engineering to Control Engineering.	Title is changed to Control Engineering.
		9. Some of the open elective offered to only other Departments, like Hybrid vehicles, Maintenance Engg. etc., can be offered for mechanical students also.	Suggestion is considered and incorporated in the syllabus.
		10. Policy decision can be made at the college level for offering Non-core open elective to parent Dept. students as well.	It will be conveyed to Dean academic.
		11. Keep internship at the end of 6 <sup>th</sup> sem and Mini-project for 5 <sup>th</sup> sem.	It will be conveyed to Dean academic.
3.	<b>Dr. G.V. NAVEEN PRAKASH</b> Professor and Head Department of Mechanical Engineering, VVCE, Mysore-570002	1. Uniform number of hours should be maintained for all modules in a course.	In all subjects uniformity is maintained
		2. Title need to be changed as Heating, Ventilation and Air Conditioning in the syllabus.	Title has been changed to Heating, Ventilation and Air Conditioning in the syllabus.
		3. Add one unit of advanced topics of NTM or basics of	Basics of NDT and Inspection

		NDT and Inspection Techniques.	Techniques are incorporated in the NDT syllabus.
		4. Case studies can be included in Design of Experiments.	Suggestion is considered and incorporated in the syllabus.
		5. Mechatronics and Microprocessor can be included in Professional core course elective - I	Discussed with internal BOS members will be included in new scheme.
		6. Include MMC and CMC in Advanced engineering materials.	Suggestion is considered and incorporated in the syllabus.
		7. Maintenance Engineering can be included in Professional elective.	Suggestion is considered and it will be incorporated in P22 scheme.
4.	<b>Dr. D.K.RAMESHA</b> Professor Department of Mechanical Engineering, University Visvesvaraya College of Engg., Bangalore.	<b>V Semester</b>	
		1. Fundamentals of thermal sciences (open elective)- Units can be rearranged.	Suggestion is considered and incorporated in the syllabus
		2. NPTEL reference can be added.	Suggestion is considered and incorporated in the syllabus.
		<b>VI Semester</b>	
		1. Alternate Fuels and Energy Conservation – Add Hydrogen Energy component. Title may be changed as Alternate Fuels, Energy conversion and conservation.	Suggestion is considered and incorporated in the syllabus.
		2. Heat transfer in lab analysis can be done using appropriate software and techniques.	Suggestion is considered and incorporated in the syllabus.
		3. Electric and Hybrid vehicles can be shifted to Mechanical Engineering and Alternate Fuels can be treated as open elective.	Suggestion is considered and it will be incorporated in P22 scheme.
5.	<b>Mr. A. Y. JAYAPRAKASH</b> TCS, Bengaluru.	<b>V Semester</b>	
		1. Validate authenticity of all YouTube e – resources.	Suggestion is checked and incorporated in the syllabus.
		2. There shall be at least 1 reference NPTEL course for each course.	Suggestion is considered and incorporated in the syllabus.
		3. Introduce design thinking concept in design of machine elements.	Suggestion is considered and it will be incorporated in P22 scheme.
		4. Theory of elasticity: simple program to compute stiffness matrix: stress/strain derivation for simple problem.	Discussed with the subject expert and the same syllabus retained.
		5. Non-traditional machining: reference to concerned machining standard shall be included.	Suggestion is considered and incorporated in the e-Resources.
		6. Aircraft and rocket propulsion: Include NPTEL course	The NPTEL COURSE from Prof.

	from Prof. Rajkumar Pant.	RajkumarPant is included.
7.	Introduce aircraft structure in V semester propulsion can be in VI Semester → suggestion.	In this course, the first three units cover the essential fundamentals of aircraft engines. Moreover, aircraft structures are a design based course and may not be considered as a prerequisite for the thermal based course under consideration.
8.	Mechatronics: Introduce Arduino /Rosepery pi: modules.	Considered and included in 5 <sup>th</sup> Unit self-study component.
9.	Include mechatronics as elective for mechanical students.	Suggestion is considered and it will be incorporated in P22 scheme.
<b>VI Semester</b>		
1.	Reference to Nitin Gokale's practical FEM.	Suggestion is considered and incorporated in the syllabus
2.	Include concept of additive layer manufacturing.	Suggestion is considered and incorporated in the syllabus of CIM P21ME6021.
3.	Automatic Control engineering title should change to control engineering.	Suggestion is considered and incorporated in the syllabus.
4.	In Introduction to FEM → Introduce Multiphysics, thermal packaging related section for open elective purpose.	Concepts will be included in the next scheme
5.	Mechanical students should get a knew of what elective (open)they can take from other departments.	It will be conveyed to Dean academic.

 26/7/2023  
Dr. Ghanaraja S

  
Dr. Rudresh Addamani  
Head of the Department  
Department of Mechanical Engineering

**Department of Mechanical Engineering**  
**P21 Scheme - VII and VIII Semester Syllabus**

**Table of Proceedings/ Suggestions given by BOS Experts and implementation /Rectification**

Sl. No.	Name of the BOS Member	Suggestions given by experts	Rectifications/Implementations or Suggestions taken by Department
1.	<b>Dr. R. KESHAVAMURTHY</b> Professor & Head Department of Mechanical Engg. DayanandaSagar College of Engg. Bengaluru-560078	<p>Consider inclusion of operation research subject in place of Tribology as core subject for 7th semester.</p> <p>Consider shifting unit-2 in condition based monitoring subject to unit-4 or unit-5.</p> <p>Mechanical vibration is a pre-requisite for condition based monitoring subject. consider inclusion of vibrations topics in the beginning for Theory of Machine subject</p> <p>Add additional topics, for advanced manufacturing process subject in particular for the fifth module with additive manufacturing topics.</p> <p>Rearrange topics in composite material subject in sequential order. Introduction, materials-classification fabrication of PMC, MMC, CMC, testing and application aspects.</p> <p>Tribology subject-Remove some of the fundamental topics included in the surface roughness module which are covered in the measurement subject.</p>	<p>Suggestion is considered and incorporated in the Scheme.</p> <p>Suggestion is considered and incorporated in the syllabus</p> <p>Suggestion is considered and incorporated in the syllabus.</p> <p>Suggestion is considered and incorporated in the syllabus.</p> <p>Suggestion is considered and the topics in composite material are rearranged. It has been incorporated in the syllabus.</p> <p>Suggestion is considered and incorporated in the syllabus.</p>
2.	<b>Dr. D.K.RAMESHA</b> Professor Department of Mechanical Engineering.	<p>Tribology- Accomodate in P.E. V.</p> <p>Operational Research- Accomodate in course title instead of tribology.</p>	<p>Suggestion is considered and incorporated in the Scheme.</p> <p>Suggestion is considered and incorporated in the Scheme.</p>

University Visvesvaraya College of  
Engg.,  
Bangalore.

Self-study course- Only SEE. No CIE,  
suggestion to look into III. Opted subjects  
along with NPTEL courses.

OR- No corrections in Syllabus.  
MEM/I explanation to be added.

CTD More importance on case  
study Practical applications.

Condition based monitoring- Flow of units  
to be modified (units).

Hydraulics & Pneumatics: No comments.

Composite materials- unit flow to be  
modified.

Robotics & AI Usage of arduino based  
concept can be included.

Theory of machines- No comments.

Tribology- Unit I and unit III to be modified.

Instead of Tribology as core course in the 7<sup>th</sup>  
semester. Operations Research can be made  
as a core course.

Kindly cross check LTP in scheme &  
detailed syllabus.

Kindly maintain a sequential flow in the  
syllabus of composite materials.

Kindly revise the syllabus of robotics and  
artificial intelligence.

For Self study course- only CIE no SEE as per the  
regulations.

-Nil-

Discussed with internal BOS members and  
decided to keep as it is.

Suggestion is considered and incorporated in  
the syllabus.

Suggestion is considered and incorporated in  
the syllabus.

-Nil-

Suggestion is considered and the topics in  
composite material are rearranged. It has been  
incorporated in the syllabus.

Suggestion is considered and incorporated in  
the syllabus.

-Nil-

Suggestion is considered and incorporated in  
the syllabus.

Suggestion is considered and incorporated in  
the Scheme.

Suggestion is considered and checked with  
scheme. Same has been incorporated in the  
syllabus.

Suggestion is considered and the topics in  
composite material are rearranged. It has been  
incorporated in the syllabus.

Suggestion is considered and incorporated in  
the syllabus.

5.

**Dr. G.V. NAVEN PRAKASH**

Professor and Head

Department of Mechanical  
Engineering

VVCE, Mysore 570002

		<p>In Theory of Machines-II, Vibration concepts can be the first two modules instead of last two modules.</p> <p>For self study course SEE can be considered for 100 marks instead of CHE.</p> <p>Kindly revise module-III in the course Tribology.</p>	<p>Suggestion is considered and incorporated in the syllabus.</p> <p>For Self-study course- only CHE no SEE as per the regulations.</p> <p>Suggestion is considered and incorporated in the syllabus.</p>
4.	Jayaprakash A J TCS, Bengaluru	<p>Suggest operation research to be included as core subject instead of Tribology.</p> <p>For self-study course, suggest to expose students to IIT online course.</p> <p>For OR introduce practical application like usage of google map, timing of metro train etc. To relate principles of OR &amp; application.</p> <p>CFD P21ME7021- include practical application/case study of CFD application instead of FEM introduction.</p> <p>Hydraulic &amp; pneumatics- include practical applications/simulation involving all components of H &amp; P to relate all components from subsystem design point of view.</p> <p>Include additive layer manufacturing details in semester III &amp; IV.</p> <p>Composite materials- include BD matrix and its importance.</p> <p>Robotics &amp; AI- unit-V, subject in this section to be revised in accordance to AI.</p> <p>Theory of Machines-II- relook practical</p>	<p>Suggestion is considered and incorporated in the Scheme.</p> <p>Suggestion is considered and students will be informed to take IIT online course for self-study course.</p> <p>Discussed with the subject expert and the same syllabus is retained.</p> <p>Discussed with the subject expert and the same syllabus is retained.</p> <p>Discussed with the subject expert and the same syllabus is retained.</p> <p>Discussed with internal BOS members will be included in new scheme.</p> <p>Discussed with the subject expert and the same syllabus is retained.</p> <p>Suggestion is considered and incorporated in the syllabus.</p> <p>Discussed with the subject expert and the same</p>

5.	<b>Vishnu vardhan J</b> 4PS21ME45/ 8 <sup>th</sup> Semester Mechanical Engineering PE SCE -Mandya	contents especially demonstration experiments. Composite materials can be shifted to 6 <sup>th</sup> semester for better projects & Research works. Shift hydraulics & Pneumatics from professional elective IV to V & add future scope object can be added. Add ERP software basic knowledge in IQM.	syllabus is retained. Discussed with internal BOS members will be included in new scheme. Discussed with the subject expert and the subject is retained in the same group (professional elective IV).
6.	<b>Vaishnavi N M</b> 4PS20ME080 8 <sup>th</sup> Semester Mechanical Engineering PE SCE -Mandya	Composite materials put in 6 <sup>th</sup> semester instead of 7 <sup>th</sup> semester.	Discussed with the subject expert and the same syllabus is retained. Discussed with internal BOS members will be included in new scheme.

  
**Dr. RUDRESH ADDAMANI**  
 M.Tech., Ph.D., MIE., MISTE.  
 Head of the Department  
 Dept. of Mechanical Engg.,  
 P.E.S.C.E, Mandya - 571401.



# P.E.S. COLLEGE OF ENGINEERING,

(An Autonomous Institution affiliated to Visvesvaraya Technological  
University, Belagavi)



MANDYA-571401, KARNATAKA

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING [ARTIFICIAL INTELLIGENCE & MACHINE LEARNING]

### Proceedings of BOS (UG) Meeting held on 21-10-2023

#### Agenda:

To discuss and approve the scheme and syllabus, B.E. CS & E(AI&ML) of:

1. 2022 scheme (3<sup>rd</sup> and 4<sup>th</sup> semester)

BOS meeting Department of CS & E (AI&ML) of UG Board was held on 16<sup>th</sup> August 2023 at 10.30 AM in the Department of Computer Science & Engineering to discuss and approve the scheme and syllabus of 2022 scheme (3<sup>rd</sup> and 4<sup>th</sup> semester) B.E. CS & E (AI&ML) subjects.

Dr. Umesh D R, Professor & HOD was the chairperson.

At the outset, Dr. Umesh D R, Chairperson (BOS UG), welcomed the external and internal members to the meeting. The entire syllabi of all 3<sup>rd</sup> and 4<sup>th</sup> semester were presented by the concerned faculty members. The agenda (as above) was discussed in the meeting elaborately. The suggestions given by external members have been listed and enclosed within the same. It was decided to retain the syllabus of 2022 scheme (3<sup>rd</sup> and 4<sup>th</sup> semester) with few changes that was suggested by members of BOS and was approved in the meeting. Finally, Dr. Umesh D R, Chairperson (BOS UG), concluded the meeting by thanking all the members present in the meeting for their valuable suggestions.

(Dr. Umesh D R,)

Professor & Chairperson BOS(UG)  
Department of CS & E(AI&ML)

Program Head  
Computer Science & Engineering  
(Artificial Intelligence & Machine Learning)  
P.E.S.College of Engg. Mandya

## 2022 Scheme (3<sup>rd</sup> and 4<sup>th</sup> Semester)

**Subject: Suggestions reported by external BOS members regarding the syllabus framing for 3<sup>rd</sup> and 4<sup>th</sup> semester subjects of NEP Scheme.**

**Dr. Vinutha. D.C** (Subject experts from outside the college)

Professor & HOD

Department of CSE(AI & ML),

VVCE, Mysuru.

### **Suggestion/feedback**

1. Operating System may be included for 3<sup>rd</sup> Sem in place of Introduction to Artificial Intelligence.
2. Suggested to include Artificial Intelligence in 4<sup>th</sup> Semester.
3. Suggested to include Computer Networks in 5<sup>th</sup> semester.
4. Recursion program on Linear Search and Binary Search in Data Structure subjects may be relooked into it.
5. Data Analytics content of Module 3,4 and 5 may be relooked into it.

**Dr. Gururaj H L**, (Subject experts from outside the college)

Associate Professor,

Information Technology,

Manipal Institute of Technology,

Bengaluru,

### Suggestion/feedback

1. Suggested to keep Computer network and FLAT in Third year.
2. Usage of various tools such as Tabulae and Pycharm.
3. Business Analytics can be introduced.
4. Let Biology and Mathematics to be taught by respective department faculties.

**Dr. Srinath S,** (Subject experts from outside the college)

Professor & HOD

Department of CSE,

SJCE, JSSSTU

Mysuru-6

### Suggestion/feedback

1. Suggested to introduce Machine Learning in 5<sup>th</sup> Semester.
2. Suggested to introduce Deep Learning in 6<sup>th</sup> Semester.
3. Modification suggested for Data Analytics.
4. Suggested to introduce file handling concepts in data Structure.
5. Modification in the Artificial Intelligence Text Book.

**Praveen Kumar B N** (Representative from Industry/Corporate sector)

Data Engineer,

Anteriad,

Bengaluru.

### Suggestion/feedback

1. Go towards Application and keeping an eye on optimization.
2. Suggested to add more advanced topics in Python.
3. Include more practical concepts wherever possible.

**Dr. Nayaka S.R.**, (Subject experts from inside the college)

Assistant Professor,

Department of Mathematics,

PES College of Engineering,

Mandya-571401

### Suggestion/feedback

1. Strongly suggested to include Discrete Mathematics because it plays crucial role in computer science and allied streams.
2. Suggested to continue with R-studio to explain the mathematics topics like correlation analysis and variance.

  
21/10/2023  
Program Head  
Computer Science & Engineering  
(Artificial Intelligence & Machine Learning)  
P.E.S. College of Engg. Mandya



**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**  
[ARTIFICIAL INTELLIGENCE & MACHINE LEARNING]

**B.E. COMPUTER SCIENCE & ENGINEERING**  
[ARTIFICIAL INTELLIGENCE & MACHINE LEARNING]  
**MEMBERS PRESENT FOR THE BOARD OF STUDIES (BOS) MEETING HELD**  
**ON 21<sup>ST</sup> OCTOBER, 2023**

SL. NO.	NAME	SIGNATURE
1.	Dr. UMESH D R CHAIRPERSON	
2.	Dr. R GIRISHA INTERNAL MEMBER(CSE)	 21/10/23
3.	Dr. M L ANITHA INTERNAL MEMBER(DS)	 21/10/23
4.	Dr. NAYAKA S R INTERNAL MEMBER(MATHS)	 21/10/23
5.	PROF. SINDHU P INTERNAL MEMBER(AIML)	 21/10/2023
6.	PROF. ASHWINI M C INTERNAL MEMBER(CSE)	 21/10/23
7.	Dr. GURURAJ H L EXTERNAL MEMBER (UNIVERSITY NOMINEE)	 21/10/23
8.	Dr. SRINATH S EXTERNAL MEMBER (ACADEMIC COUNCIL NOMINEE)	 21/10/2023
9.	Dr. VINUTHA D C EXTERNAL MEMBER (ACADEMIC COUNCIL NOMINEE)	 21/10/23
10.	Mr. PRAVEEN B N EXTERNAL MEMBER(ALUMNUS)	 21/10/23
11.	Mrs. MEDINI B V EXTERNAL MEMBER(INDUSTRY EXPERT)	- ABSENT -
12.	Dr. NAGARATHNA SPECIAL INVITEE (PROFESSOR & HEAD CSE)	

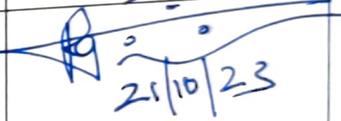
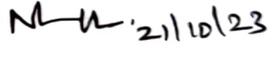
To,  
 The Academic Dean  
 P.E.S. College of Engineering,  
 Mandya.

Dear Sir,

**Sub : BOS Meeting (UG) – reg.**

As per your direction, BOS Meeting of UG Board was held on 21<sup>st</sup> October 2023 in the department of Computer Science & Engineering to discuss and approve the scheme and syllabus of 3<sup>rd</sup> and 4<sup>th</sup> semesters B.E.(AI & ML) subjects for the scheme 2022.

The following members were present in the meeting:

Sl. No	Category	Nomination of the committee	Name of the Person	Signature
1.	Head of the department	Chairperson	Dr.D.R.Umesh Professor & Head	
2.	Faculty members of the department at different levels with different specialization having minimum experience of 5 years	Members	1. Dr.R.Girisha	 21/10/23
2. Dr.M.L.Anitha			 21/10/23	
3. Dr.Nayaka S.R.			 21/10/23	
4. M.C.Ashwini			 21/10/23	
5. Sindhu P.				

# P.E.S. COLLEGE OF ENGINEERING,

(An Autonomous Institution, under Visvesvaraya Technological University, Belgaum)  
Aided by Govt. of Karnataka Recognized by AICTE, New Delhi

MANDYA-571401, KARNATAKA.



## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Phone: 08232-220043, 220120 Ext: 213 Fax: 08232-22075

Date : 21-10-2023

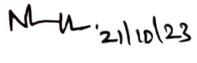
To,  
The Academic Dean  
P.E.S. College of Engineering,  
Mandya.

Dear Sir,

**Sub : BOS Meeting (UG) – reg.**

As per your direction, BOS Meeting of UG Board was held on 21<sup>st</sup> October 2023 in the department of Computer Science & Engineering to discuss and approve the scheme and syllabus of 3<sup>rd</sup> and 4<sup>th</sup> semesters B.E.(AI & ML) subjects for the scheme 2022.

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1.	Head of the department	Chairperson	Dr.D.R.Umesh Professor & Head	
2.	Faculty members of the department at different levels with different specialization having minimum experience of 5 years	Members	1. Dr.R.Girisha 2. Dr.M.L.Anitha 3. Dr.Nayaka S.R. 4. M.C.Ashwini 5. Sindhu P.	 21/10/23  21/10/23  21/10/23  



# P.E.S. COLLEGE OF ENGINEERING,

(An Autonomous Institution, under Visvesvaraya Technological University, Belgaum)  
Aided by Govt. of Karnataka Recognized by AICTE, New Delhi



MANDYA-571401, KARNATAKA.

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Phone: 08232-220043, 220120 Ext: 213 Fax: 08232-22075

Date : 21-10-2023

3.	Subject experts from outside the college nominated by academic council	Member	Dr.Srinath S. Associate Professor & Head Department of CS & E, JSSSTU, Mysuru.	 21/10/2023
		Member	Dr. Vinutha D.C. Professor & Head Department of AI & ML, VVCE, Mysuru.	 21/10/23
4	Expert from outside college nominated by Vice chancellor	Member (University Nominee)	Dr. Gururaj HL Associate Professor, Department of Information Technology, Manipal Institute of Technology, Bengaluru, India. gururaj.hl@manipal.edu itsmeguru.in Ph: 9686418942	 21/10/23
5	Representative from Industry/Corporate sector/ Allied area relating to placement nominated by academic council	Member	Medini BV Robotic Engineer , Area of Interest – Machine Vision, Machine Learning, Image Processing, ROS, Path planning, Mapping and Localization, D-5/2 Shankar Hill Town, JSW Township Toranagallu, Sandur (Tq), Ballari (Dis) E-Mail: medinibv@gmail.com Ph:7795347780	ABSENT
6	Post Graduate Meritorious alumnus Nominated by Principal	Member	Praveen Kumar BN Data Engineer at Anteriad Have 5 years of experience in IT. Engineering E-Mail: Praveenbn8@gmail.com Ph: 8147910344	 Praveen BN

21/10/2023  
(Head of the Department)

## Board of Studies Meeting Minutes

The fifth Board of Studies Meeting was held on 6<sup>th</sup> March, 2017 at 10.30 a.m. at Post Graduate Department of Management Studies, PES College of Engineering, Mandya.

Agenda: Revision of I, II, III, & IV Semester Syllabus of MBA program for the academic year 2017-2019.

The meeting was chaired by Head of PGDOMS, Dr.Somashekar. P along with:

- Subject experts from outside the college nominated by Academic Council –  
Dr Vittal .K.R.P,  
HOD, Dept of MFA,  
Presidency College, Hebbal,  
Kempapura, Bangalore
- Expert from outside college nominated by Vice Chancellor, VTU, Belgaum

Dr. Senthil Kumar  
Professor, Dept. of Management Studies,  
NITTE Meenakshi Institute of Technology,  
Galahally, Govindapura yelahanka, Blore-560064

- Representative from Industry, corporate sector/allied area relating placement nominated by Academic Council.

Mr Ramcharan  
Akshaya Cottage Industry  
Manufacturers of Arecanut Leaf Products  
No. 2681/A, 10th cross 6th main,  
V. V.Mohalla Mysore 570002.

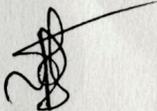
- Post Graduate Meritorious Alumnus nominated by Principal  
Mr. Tejus V,  
Clusters Groups, Bangalore.

- Faculty members of different specialization, namely:

1. A.S. Mahesh
2. Aluregowda
3. T.D. Suman Rajesh
4. Pooja Nagpal
5. R. Chandrika
6. Dr. A C Kiran Kumar
7. Mohan N
8. Lishma B K

[Mr. Tejus V Post Graduate Meritorious Alumnus nominated by Principal was not able to attend the meeting due to his ill health]

Dr. Somashekar P, The chairman welcomed all the members in the meeting.

  
Head of the Department  
Post Graduate Department  
of Management Studies  
P.E.S.College of Engineering  
Mandya - 571 401.

The revised syllabus for I, II, III, & IV Semester for the academic year 2017-2018 and 2018-2019 were presented. After discussion the following changes made accordingly,

1. In I Semester the following subjects were had changes. In **Marketing Management**- Marketing Services and Managing Digital Communication, Developing Marketing Strategies and Plans topic is added in 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup> modules respectively. In **Management Fundamentals and Organizational Behavior** PESTEL Analysis is added instead of PEST. In **Management Information System**- Enterprise Management systems, ERP Models –ERP Implementation was removed. In **Business Economics** the terminology Exception to Law of Demand was included in the 2<sup>nd</sup> module under Demand Analysis. In **Business Communication** Video Resume has been added in the 5<sup>th</sup> Module.

2. In II Semester the following subjects had changes. In **Financial Management** – In Module I-Emerging Issues in Financial Management, Mergers and Acquisitions and Financial Engineering topics were replaced by Bit coins, crowd funding and Green Financing. Project cash flows has been added in the 4<sup>th</sup> module under the head Investment Decisions. In **International Business Management**- Impact of BREXIT on EU is added in addition to European Union in the 4<sup>th</sup> module. **Business Research Methods** subject is revamped on the opinion of the experts. The following were the changes made in regards to Business Research Methods. [Annexure 1]

In **Corporate Communication**- 3D Presentations in 2<sup>nd</sup> Module and Setting of agenda and minutes of meeting in 3<sup>rd</sup> Module is added.

3. In III Semester, in **Supply Chain Management** the following topics Managing Cross Functional drives in supply chain and Information Technology & Performance Management & controls in Supply Chain Management are deleted and the following topics are added Introduction to world class manufacturing: The Indian scenario and Leading India Towards World-Class Manufacturing. In **Project Management** the following topics are deleted – Financial Analysis , Project cash flows and Environmental Appraisal of Projects.

In **Financial Management Specialization** the following subjects had some changes. In **Financial Services and Banking Practices**- Tax Planning in the context of Managerial decisions (Make or Buy, Lease or Hire Purchase) in 3<sup>rd</sup> module was added. In **Mergers, Acquisition and Corporate Restructuring** Exchange Ratio Problems were added in 3<sup>rd</sup> Module, Value Based Management in 4<sup>th</sup> Module, and Tax Planning towards M&A (Tax savings available for acquired firm or merged firm) in the 5<sup>th</sup> Module. **Advanced Financial Management** has been revamped on the expert's opinion. [Annexure 2]

In **Investment Management** - Problems on computation of Indicies by using Free float market capitalization method and Mini Project: Industry wise company listed in S&P BSE 500 was added in 1<sup>st</sup> Module, Mini Project-Application Technical Analysis tools was added in 4<sup>th</sup> Module.

4. In the 4<sup>th</sup> Semester in **Entrepreneurship Development**- Strategic Management in Small Business & Industrial Sickness topic is deleted. Setting Up Small Business Enterprises, Role of Government in Promoting Incubation Centre and Agencies for Policy Formulation and Implementation topics are added.

In **Financial Management Specialization**, Mini Project on International Diversification topic is added to **Portfolio Management** in the 5<sup>th</sup> module. In **Risk Management**- Valuation of Futures on shares, commodities (speculative and non-speculative commodities), Index futures, Currency futures is added in 1<sup>st</sup> module, Problems on Spreads & Combinations are included in 2<sup>nd</sup> module and Merton Scholes Model-Inferences of Option Greeks topics are added in 5<sup>th</sup> module. In **International Financial Management**- the term "The evolution financial systems" is added in the 1<sup>st</sup> module, Problems to be solved on Transaction & Translation. Application of AS III for determining foreign exchange laws are added in 4<sup>th</sup> module and Internal & External Hedging Techniques are added in 5<sup>th</sup> module. In **Tax Management**- Allowances, disallowances, business receipts and non-business incomes (section 28 to 44) are specified in 3<sup>rd</sup> module and provision is made for incorporation of GST instead of Indirect Taxes as GST will be commenced.

In **Marketing Management**, in **International Marketing Communication** Other Categories of Advertising is added in 1<sup>st</sup> module and Major Promotion Tools topics is added in 4<sup>th</sup> module. In **Strategic Brand Management**- Brand Equity as a "Bridge" and Customer Relationship Management (CRM) topics are added in 2<sup>nd</sup> module. In **International Marketing Management**- International Retailing is added in the 4<sup>th</sup> module.

The meeting ended with vote of Thanks addressed by Dr. Somashekar P expressing gratitude on behalf of the college for their guidelines and constructive recommendations in revising the syllabus of MBA program.

### Annexure 1

Before Changes	After Changes
<p><b>Introduction to Research</b> – Meaning, types, criteria of good research, marketing research, scientific approach to research in physical and management science, limitations of applying scientific methods in business research problems, Business Research An overview – Organization of Marketing Research Roles ,Research process,-Research problem Formulations Distinction between management problem v/s. research problem, Steps involved in preparing business research plan/proposal</p>	<p><b>Research Methodology an introduction:</b> Meaning, objectives, Motives, Types, Approaches, Significances, Research Methods V/s Methodology, Importance of How research is done, <b>Defining The Research Problems:</b> Selecting the Problems, Defining the Problems, Technique involved in Defining a problems, <b>Research Design:</b> Need for Research Design, Features of Good Design , Concept relating to research Design, <b>Sampling Design:</b> Census and sample survey, Selecting sample Procedure, Characteristics of sampling Design, Types of Sampling, How to select random sampling, random sampling from an infinite universe, Complex sampling Designs.</p>
<p><b>Business Research Design:</b> Exploratory, Descriptive, &amp; Causal research <b>Exploratory research:</b> Meaning, suitability, Data collection, hypothesis development at exploratory research stage, Difference between Exploratory Research &amp; Descriptive research &amp; its Meaning, types of descriptive studies, data collection methods <b>Causal research:</b> Meaning, various types of experimental designs, types of errors affecting research design. (Page no 45 to 74 from Book 1)</p>	<p><b>Measurement and scaling Techniques:</b> Measurement in research, scales, Sources of error in Measurements, Tests of sound Measurement, Techniques of developing Measurement tools, Meaning of Scaling, classification scale base, Importance of scaling Techniques, <b>Methods of Data collection:</b> Primary data, Observation method, interview method, Questionnaire Methods, Schedules Methods Difference Between questionnaire And schedule, Secondary Data, <b>Processing and Analysis of Data:</b> Processing Operations, Problems in Processing , Types of Analysis, Statistics in research, Measuring Central tendency, skewness, Relationship, Simple Regression analysis, Multiple Correlation and Regression.</p>
<p><b>Data collection:</b> Primary and Secondary data – Sources – advantages/disadvantages, Data collection Methods – Observations, Survey, Interview and Questionnaire design, Qualitative techniques of data collection. Qualitative Techniques of Data</p>	<p><b>Sampling Fundamentals:</b> Need for sampling, Sampling fundamentals, Sampling Theorem, Sampling Theory, Standard Error, Estimating Population Mean, Population proportion, Sample size and its Determinations, <b>Testing Hypotheses-1(Parametric or standard Test):</b> Formulation of Hypotheses, Basic</p>

<p>Collection Measurement &amp; Scaling Techniques: Nominal Scale, Ordinal Scale, Interval Scale, Rating .Scale, Criteria for good measurement, Attitude measurement – Likert’s Scale, Semantic Differential Scale, Thurstoneequal appearing interval scale, MDS – Multi Dimensional Scaling, Data Processing &amp; interpretation.</p>	<p>concepts of Hypotheses, Flow diagram of Hypotheses Test, Importance of Parametric Test, Testing Means, Difference Between Means, Testing Two related sample, Testing of Proportions, Testing of Comparing variance to Population Variance, Testing of Correlation coefficients, <b>Chi-Square Test</b>: Chi-square as a test for comparing variance, Chi-square as Non-parametric Test, Steps involved in applying Chi-square Test.</p>
<p><b>Sampling &amp; Hypothesis</b>: Meaning, Steps in Sampling process, Types of Sampling - Probability and non probability Sampling Techniques, Errors in sampling, Relationship between Sample size and errors. <b>Hypothesis</b> Meaning, Types, characteristics, sources, Formulation of Hypothesis, Errors in hypothesis testing - Type I and Type II Errors, Parametric and Nonparametric test: Ttest, Z-test, F-test, Chi-Square test; U-test, Rank-Sum test, K-W test, Research Report. (Theory only)</p>	<p><b>Analysis of Variance and Covariance</b>: Analysis of variance (ANOVA), ANOVA, The basic Principals of ANOVA technique, Setting up Analysis Of variance table, Short-cut Method for one way ANOVA, Coding Method, Two-way ANOVA, <b>Testing of Hypotheses-2 (Non-Parametric/Distribution free test)</b>: Important Non-Parametric or distribution Free test, Relationship Between Spearman’s And Kendall’s, Characteristics of distribution-free or Non-Parametric Tests, <b>Multivariate Analysis Techniques</b>: Growth of Multivariate Techniques, Characteristics and applications, Classifications of multivariate Techniques, variables in Multivariate Analysis, Multivariate Techniques, Methods of Factor analysis, Rotation in factor Analysis, R- type, Q-type factor Analysis, Path Analysis.</p>
<p><b>Data Analysis</b>: Guidelines for Project Work, Editing, Coding, Classification, Tabulation, Analysis, &amp; Interpretation. Statistical Analysis of Business Research(application only): Bivariate Analysis (Chi-square only), Multivariate Analysis - Factor Analysis, Discriminated Analysis, Cluster Analysis, Conjoint Analysis, ANOVA – One-way &amp; Two-way classification - Problems on one way anova(Theory only).</p>	<p><b>Interpretation and Report Writing</b>: Interpretation Meaning, Why Interpretation? Technique of Interpretation, Precaution in Interpretation, significance of Report writing, Difference steps in writing Report, Layout Of Research Report, Types of Report, Oral Presentation, Mechanics of report writing, precautions of writing Reports, <b>The Computer and its Role in research</b>: The Computer and its Technology, Important Characteristics, The binary Number systems, Computer Applications, Computer and Researcher.</p>

## Annexure 2

Before Changes	After Changes
<p><b>Working capital management</b> – Sources for financing working capital - Short term financing of working capital, long term financing of working capital. Bank finance for working capital (No problems on estimation of working capital requirement).</p> <p><b>Cash Management</b> – Forecasting cash flows– Cash budgets, long-term cash forecasting, monitoring collections and receivables, optimal cash balances – Baumol model, Miller - Orr model. Strategies for managing surplus fund.</p>	<p><b>Corporate financial Modeling</b> – Agency problem and consideration. Financial planning – Basis of financial planning, sales forecast method, pro-forma P &amp; L account method, pro-forma balance sheet method, determination of External Financing Requirement (EFR). [Basic problem]</p>
<p><b>Receivables Management</b> – Credit management through credit policy variables, marginal analysis, Credit evaluation: Numerical credit scoring and discriminate analysis. Control of accounts receivables, Factoring.</p> <p><b>Inventory Management:</b> Determinations of inventory control levels: ordering, reordering, danger level. EOQ model, Quantity discounts. Monitoring and control of inventories, ABC Analysis. Zero Inventory System.</p>	<p><b>Working capital management</b> –Sources for financing working capital - Short term financing of working capital, long term financing of working capital. Bank finance for working capital, Working Capital Leverages (No problems on estimation of working capital requirement).</p> <p><b>Cash Management</b> – Forecasting cash flows– Cash budgets, long-term cash forecasting, monitoring collections and receivables, optimal cash balances – Baumol model, Miller - Orr model. Strategies for managing surplus fund.</p>
<p><b>Capital structure &amp; market value of a firm.</b> Theories of capital structure – NI approach, NOI approach, Modigliani Miller approach, traditional approach. Arbitrage process in capital structure. [theory and problems]</p> <p><b>Dividend policy</b> – Theories of dividend policy: relevance and irrelevance dividend decision. Walter's &amp; Gordon's model, Modigliani &amp; Miller approach. Legal and procedural aspects of dividends Corporate Dividend Tax.</p>	<p><b>Receivables Management</b> – Credit management through credit policy variables, marginal analysis, Credit evaluation: Numerical credit scoring and discriminate analysis. Control of accounts receivables, Factoring (Problems are included). Performance measurement and Balanced Scorecard.</p>
<p><b>Hybrid Financing</b> – Preferred stock, Warrants and convertibles, Private equity. Venture funds, Angel financing.</p> <p><b>Value Based Management:</b> Methods and Key Premises of VBM-Free Cash flow method, EVA/MVA method, Cash</p>	<p><b>Inventory Management:</b> Determinations of inventory control levels: ordering, reordering, danger level. EOQ model, Quantity discounts. Monitoring and control of inventories, ABC Analysis. Zero Inventory System.</p>

Flow Return on Investment/Cash value added method.	
<b>Corporate financial Modeling</b> – Agency problem and consideration. Financial planning – Basis of financial planning, sales forecast method, pro-forma P & L account method, pro-forma balance sheet method, determination of External Financing Requirement (EFR). [Basic problem]	<b>Capital structure &amp; market value of a firm.</b> Theories of capital structure – NI approach, NOI approach, Modigliani Miller approach, traditional approach. Arbitrage process in capital structure. [theory and problems] <b>Dividend policy</b> – Theories of dividend policy: relevance and irrelevance dividend decision. Walter's & Gordon's model, Modigliani & Miller approach. Legal and procedural aspects of dividends Corporate Dividend Tax.



# P. E. S. College of Engineering

MANDYA - 571401, Karnataka.

An Autonomous Institution, under Visvesvaraya Technological  
University, Belgaum, Aided by Govt. of Karnataka, Recognized by AICTE,  
New Delhi



## Post Graduate Department of Management Studies

### Board of Studies Meeting Minutes (Revision of Syllabus-2018)

The Sixth Board of Studies Meeting (Revision of Syllabus-2019) was held on 8<sup>th</sup> March, 2019 at 10.30 a.m. at Post Graduate Department of Management Studies, PES College of Engineering, Mandya.

Agenda: Revision of I, II, III, & IV Semester Syllabus of MBA program for the academic year 2019-2021 as per the AICTE new model curriculum on par with VTU, Belagavi.

The meeting was chaired by Head of Department, Dr.Somashekar. P along with:

- Subject experts from outside the college nominated by Academic Council –  
Dr Vittal .K.R.P,  
HOD, Dept of MFA,  
Presidency College, Hebbal,  
Kempapura, Bangalore.
- Expert from outside college nominated by Vice Chancellor, VTU, Belgaum

Dr. Senthil Kumar

Professor, Research and Data Science School of Management Studies,  
Presidency University, Yelahanka, Bangalore.

Galhallv. Govindanura velahanka. Blore-560064

- Representative from Industry, corporate sector/allied area relating placement nominated by Academic Council.  
Mr Ramcharan  
Akshaya Cottage Industry  
Manufacturers of Arecanut Leaf Products  
No. 2681/A, 10th cross 6th main,  
V. V.Mohalla, Mysore 570002.
- Post Graduate Meritorious Alumnus nominated by Principal  
Mr. Tejus V,  
Clusters Groups, Bangalore.
- Faculty members of different specialization, namely:

1. A.S. Mahesh
2. Dr.Aluregowda
3. T.D. Suman Rajesh
4. Pooja Nagpal
5. R. Chandrika
6. Dr. A C Kiran Kumar

Dr. Somashekar P, The chairman welcomed all the members in the meeting.

Head of the Department  
Post Graduate Department  
of Management Studies  
P.E.S.College of Engineering  
Mandya - 571 401.

The revised syllabus for I, II, III, & IV Semester for the academic year 2019-2021 were presented. After discussion the following changes made accordingly,

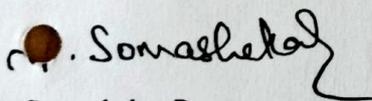
1. Credit Pattern of semesters changed with **total of 100 credits** for 2 years MBA programme. Out of which total of **56 credits for core courses** for all the semesters, total of **24 credits for elective courses** for III & IV semester, total of **01 credits for seminar** in I semester, **07 credits for Lab 1** in II semester and **Lab II** in III Semester and **12 credits for Project work** in the IV semester.
2. In the BOS 2019 one new core subject named Strategic Management is introduced in the fourth semester as per the recommendation of the committee members.
3. The table shows the overall credit distribution for MBA programme 2019-20 as per the revised scheme of Teaching & Examination.

**An overview of credit distribution for MBA programme 2019-21**

Sl. No.	Courses	Credits per course	Total No. of credits
1.	I Semester – <b>09 course</b> 06 core course 01 core course 01 Lab 01 Seminar	03 04 02 01	<b>25</b>
2.	II Semester – <b>09 course</b> 06 core course 01 core course 01 Lab 01 Lab	03 04 02 01	<b>25</b>
3.	III Semester – 02 core course 04 elective course 01 Lab	03 03 02	<b>20</b>
4.	IV Semester – 02 core course 04 elective course 01 Project Evaluation 01 Project Viva Voce	03 03 08 04	<b>30</b>
	<b>Total</b>		<b>100</b>

5. In 2019 syllabus practical component is introduced in the best interest of the students. Also Course outcome and Programme outcome were mapped using the scale of 1 to 5, where 1 represented lowest correlation and 5 representing highest correlation between the CO and POs.
6. In the **I Semester** the following subjects had changes. A new **Lab** is introduced named Effective Communication Development (ECD) to develop skills of students for effective communication. In Marketing Management- Digital Management and Social Media Channel is added in the 4<sup>th</sup> module. In the subject Management Fundamentals & Organizational Behaviour – Organizational change: Concept, Resistance to change and Managing change topics are added in Module 5. Quantitative Techniques I is retitled to Business Analytics and no changes were made in the content of the course.
7. In the **II Semester** the following subjects had changes. A new Lab is introduced named Professional Communication Development (PCD) to extend the development of skills for Professional

- communication. In the subject Workplace Ethics- Environmental Ethics, Corruption and Gender Issues: Corruption Issues World Wide, Gender issues across the globe were introduced.
8. In the III Semester the following changes were made. A new Lab 2 is introduced exclusively covering SPSS requirements for the students to carry out their project. In Financial Management specialization, the subject Mergers, Acquisitions and Corporate Restructuring- LLP [Limited Liability Partnership] and MLP [Master Liability Partnership] topics are introduced in the 2<sup>nd</sup> module and Corporate Valuation is introduced in 5<sup>th</sup> module. In Human Resource Management specialization, in the subject Legal Environment & Industrial Legislation- Niti Ayoga topic is added in module 1 and Employees' Provident Fund and Miscellaneous Provisions Act 1952 Employees Compensation Act in 2013 is introduced in module 5. In subject Team Development and Leadership- Feedback in teams, Team performance curves topics are added in the 1<sup>st</sup> module, Emotional Intelligence in Team Work is added in module 3, How leadership had evolved over a period of time is added in module 4.
9. In the IV Semester the following changes were made. A new core subject named Strategic Management is introduced as per the recommendation of the BOS members. In Financial Management specialization, the title of the course Risk Management was replaced by the title Financial Derivatives. As per the new title Financial Swaps topic is introduced in module 4 and Commodity Derivatives in module 5. In the subject Tax Management Indirect tax constitutes of GST system added in the 5<sup>th</sup> module. In Human Resource Management specialization, in the subject International Human Resource Management- Human Resource Issues in Multinational (Social Dumping, Joint Ventures) is added in module 5. In the subject Personal Growth & Inter-Personal Effectives- Ego States- Id, Ego and Super Ego and Defense Mechanisms and Artificial Intelligence is added in module 1.



Dr.Somashekar.P

Chairman, BOS

Head of the Department  
Post Graduate Department  
of Management Studies  
P.E.S.College of Engineering  
Mandya - 571 401.



Suman.T.D

CO ORDINATOR

## **Board of Studies Meeting Minutes (Revision of Syllabus-2022)**

The seventh Board of Studies Meeting (Revision of Syllabus-2022) was held on 16<sup>th</sup> August, 2022 at 10.30 a.m. at Post Graduate Department of Management Studies, PES College of Engineering, Mandya.

Agenda: Revision of I, II, III, & IV Semester Syllabus of MBA program for the academic year 2022-2024 as per the AICTE new model curriculum on par with VTU, Belagavi.

The meeting was chaired by Head of Department, Dr. Aluregowda along with:

- Subject experts from outside the college nominated by Academic Council –

Dr. Basanna S. Patagunda  
Professor and Head of the Department,  
Cambridge Institute of Technology,  
K R Puram, Bangalore, Karnataka – 560036

Dr. Manoj Kumar N V  
Associate Professor, MBA Department,  
Maharaja Institute of Technology – Mysore

- Expert from outside college nominated by Vice Chancellor, VTU, Belgaum

Dr. Manu K S  
Assistant Professor,  
School of Business and Management,  
CHRIST (Deemed to be University), Bangalore.

- Representative from Industry, corporate sector/allied area relating placement nominated by Academic Council.

Dr. Subramanya  
Sridhama Industries, Bt. Koppalu,  
Arasikere Road, Hassan- 573103

- Post Graduate Meritorious Alumnus nominated by Principal

Srinivas K  
Senior Manager, EXIM,  
SY NO. 421/1,422,423/2,  
Thondavadi Village Geguru Hobli,  
Gundlupet Taluk, Chamarajanagar, Karnataka – 571109

- Faculty members of different specialization, namely:

1. Dr. Somashekar P

*Aluregowda*

Head of the Department  
Post Graduate Department  
of Management Studies  
P.E.S. College of Engineering  
Mandya - 571 401

2. Dr. A.S. Mahesh
3. Dr. A. C. Kiran Kumar
4. Mrs. T.D. Suman Rajesh
5. Mrs. Mary Soundarya
6. Mr. Mahendra Kumar B R

Dr. Aluregowda, The chairman welcomed all the members in the meeting.

The revised syllabus for I, II, III, & IV Semester for the academic year 2022-2024 was presented. After discussion the following changes were made accordingly,

1. The vision and mission of the department was rephrased and necessary changes were made to bring them in alignment with that of Institutional vision and mission. Along with them a well structure of the program is drafted showing process of establishment of PEO's, rubrics for evaluation and CO-PO mapping as per the requirement of the NBA.
2. Credit Pattern changed with **total of 100 credits** for 2 years MBA programme. Out of which total of **47 credits for core courses** for all the semesters, total of **36 credits for elective courses** for III & IV semester, total of **02 credits for seminar** in I & II semester, **02 credits for Lab 1** in III semester, **Internship carrying 04 credits** and **10 credits for Project work** in the IV semester.
3. In the BOS 2022 it was agreed to offer only Dual Specialization as against the 2019 which offered both Core Specialization as well as Dual Specialization. As a result number of electives offered in the 2<sup>nd</sup> year is 06 courses as against 04 courses offered in 2019 syllabus.
4. As per the VTU autonomous guidelines amendment 2022 effective from academic year 2021-22 number of hours allotted to the courses were 40 hours for 3 credit course constituting 3 hours classes per week and 50 hours for 4 credit course constituting 4 hours classes per week.
5. In the 1<sup>st</sup> semester the course Business Analytics was renamed as Business Statistics as the content of the course predominantly belonged to Statistics. Keeping other subjects name same as 2019 syllabus. However, Accounting for Managers, Business Statistics and Business Economics are given 4 credits as against 3 credits in the previous syllabus including practical sessions in the courses. Again Business Communication is made 3 credit course from 4 credit course. Accounting for Managers includes Lab session using Tally ERP software so as make students aware of basic ERP software used for the purpose of accounting. Effective Communication Development (ECD) is considered zero credit course. Business Communication and Corporate Communication which were two courses offered in 1<sup>st</sup> and 2<sup>nd</sup> Semester respectively in the previous syllabus is merged

and a single course named Business Communication is offered in the 1<sup>st</sup> Semester in the 2022 syllabus.

6. In the 2<sup>nd</sup> Semester Computer Lab 1 is replaced by Seminar II. New courses namely Supply Chain Management, Entrepreneurship and Legal Aspects and Strategic Management courses are introduced and International Business Management, Work place Ethics and Corporate Communication are removed. Professional Communication Development (PCD) is made zero credit course as against 01 credit course in the previous syllabus.
7. In the 3<sup>rd</sup> Semester Internship is introduced with 04 credits for the first time in the syllabus. Computer Lab 2 is named as Computer Lab in 2022 scheme. No core subjects are retained in the syllabus only 6 electives courses are offered in this semester. From Finance Management specialization Advanced Financial Management course is removed the important topics are added in Financial Management in the 2<sup>nd</sup> semester and Investment Management and Portfolio Management of Fourth Semester is merged as one course Investment and Portfolio Management. In Marketing Management Service Marketing course is removed and important topics are added in Marketing Management in the 1<sup>st</sup> semester. In Human Resource Management Team Development and Leadership course is removed and important topics are added to Human Resource Management in the 1<sup>st</sup> semester.
8. In the 4<sup>th</sup> Semester no core courses are offered. From Finance Management Portfolio Management course is removed which is merged in Investment and Portfolio Management in the 3<sup>rd</sup> Semester. In Marketing Management Integrated Marketing Communication is removed and important topics are added to Marketing Management in the 1<sup>st</sup> semester. In Human Resource Management Personal Growth & Inter personal Effectiveness course is removed and important topics are added to HRM in the 1<sup>st</sup> semester.
9. The table shows the changes suggested in the course for 2022 syllabus:

Sl. No.	Course Name	Addition of topic if any	Deletion of topic if any
1.	Accounting for Managers (1 <sup>st</sup> Semester)	Window Dressing and Du Pont Analysis	None
2.	Marketing Management (1 <sup>st</sup> Semester)	Emerging trends in the Marketing	None
4.	Business Economics (1 <sup>st</sup> Semester)	Break Even Analysis and Circular Flow of Economy	None
5.	Financial Management (2 <sup>nd</sup> Semester)	Capital Structure and Firm Value	Estimation of Project Cash Flow
6	Consumer Behaviour (3 <sup>rd</sup> )	Market Basket Analysis	None

	Semester)		
7	Mergers, Acquisition & Corporate Restructuring (3 <sup>rd</sup> Semester)	PE Matrix	None
8	Tax Management (4 <sup>th</sup> Semester)	Exemption under GST	None
9	Financial Derivatives (4 <sup>th</sup> Semester)	Binomial Models, American and European Options	None

*Allegorade*

Head of the Department  
 Post Graduate Department  
 of Management Studies  
 P.E.S. College of Engineering  
 Mandya - 571 401

Twelfth BOS Meeting of MCA department held on 10/09/2024 at 10:30 AM at department of MCA, for approving the Scheme of I-IV Sem and Syllabi of I & II Semester MCA 2024-2026. (2024 Scheme).

Members Present	Signature
1. DR. M. N. Vena Chairperson Professor & HOD, Dept. of MCA PESCE, Mandya	Vena 10/09/24
2. DR. N. Asha External Expert Professor & HOD, Dept. of MCA NIE, Mysore	Asha 10/09/24
3. DR. Jagannatha. S External Expert Director - School of Applied Science Sapthagiri NPS University, Bangalore	Jagannatha S 10/09/24
4. DR. Yogish. H. K Member Professor, Dept. of IS & Engg. (University Nominee) M. S. Ramaiah Institute of Technology Bangalore	Yogish H K 10/09/24
5. Avinabh. J Industry Expert Lead SDET, Sutherland Global Service Bangalore	Avinabh J 10/09/24
6. Praveena. H. M Member Alumnus Project Manager, Nuware Solutions Bangalore	Praveena H M 10/09/24

Signature

7. Dr. H.R. Divakar Member  
Associate Professor, Dept. of MCA  
PESCE, Mandya. H.R.D. 10/9/24

8. Prof. K.M. Sowmyashree Member  
Assistant Professor, Dept. of MCA  
PESCE, Mandya. K.M.S. 10/9/24

9. Prof. H.L. Shilpa Member  
Assistant Professor, Dept. of MCA  
PESCE, Mandya. H.L.S. 10/9/24



**P.E.S. COLLEGE OF ENGINEERING**  
**MANDYA – 571401, Karnataka**  
(An Autonomous Institution Affiliated to VTU, Belagavi)



**Department of Master of Computer Applications**

Date: 10-09-2024

**BOS Meeting Proceedings**

The members present for the 12<sup>th</sup> BOS Meeting held on 10/09/2024 are as follows:

- 1) Dr. M. N. Veena, Professor & HOD, Dept. of MCA, BOS Chairperson.
- 2) Dr. N. Asha, Professor & HOD, Dept. of MCA, NIE, Mysuru - 570008.
- 3) Dr. Jagannatha. S, Director-School of Applied Science, Sapthagiri NPS University, Bangalore-560057.
- 4) Dr. Yogish H. K, Professor & HOD, Dept. of MCA, MSRIT, Bangalore - 560054.
- 5) Sri. Avinash. J, Lead SDET, Sutherland Global Service Pvt. Ltd., Bangalore - 570011.
- 6) Sri. Praveena. H. M, Project Manager, Nuware Solutions, Bangalore.
- 7) Dr. H. R. Divakar, Associate Professor, Dept. of MCA, PESCE, Mandya.
- 8) Smt. K. M. Sowmyashree, Asst. Professor, Dept. of MCA, PESCE, Mandya.
- 9) Prof. H. L. Shilpa, Asst. Professor, Dept. of MCA, PESCE, Mandya.

In the Twelfth BOS Meeting held on 10/09/2024, Scheme of I-IV semester MCA Scheme. I & II semester Syllabi was presented. Discussion was done on the courses in sequence and the following suggestions were given by BOS members.

As per AICTE, MCA Programme is designed for 2 years with hundred credits.

**Table of Proceedings / Suggestions given by BOS Experts and Implementations / Rectifications**

Sl. No.	Name of the BOS Member	Suggestions given by Experts	Implementations / Rectifications or Suggestions taken by the Department
1.	Dr. N. Asha, Professor, Dept of MCA, NIE, Mananthavadi Road, Vidayaranya Puram, Mysuru-570008.	Suggested to consider 2 hours teaching in LTP structure and make course type as Non Credit Mandatory Course (NCMC) in I sem MCA Course P24MCA18.	Updated in Scheme and Syllabus
		Agreed to retain the course type, LTP structure and Credits allotted for the courses P24MCA11 to P24MCA17 in I semester MCA.	Updated in the Scheme and Syllabus
		Agreed for II semester scheme and Syllabus.	-
		Suggested to change the course codes format in categories A, B and C for III semester courses.	Implemented

Sl. No.	Name of the BOS Member	Suggestions given by experts	Rectification / Implantations or Suggestions taken by the Department
2.	Dr. Jagannatha S, Director-School of Applied Science, Sathagiri NPS University, Chikkasandra, Hesarghatta main Road, Bangalore-560 057.	Suggested to introduce skill development activities for Integrated Professional Core Courses.	Incorporated
		Motivate the students to publish a papers in Q1/Q2/Q3 Journals.	Considered
		The MOOC courses of IV semester need to be register in I Year and the certificate will be considered in IV semester.	Considered

Sl. No.	Name of the BOS Member	Suggestions given by experts	Rectification / Implantations or Suggestions taken by the Department
3.	Dr. Yogish H. K, Professor, Dept. of IS & Engg., Ramaiah Institute of Technology, Bangalore - 560054.	Suggested to change the PP to 0 Credits in I sem MCA Course P24MCA18.	Incorporated Changes in I sem MCA scheme.
		Suggested to give the course type as Professional Elective Courses instead of Multi Disciplinary courses in III Semester courses.	Implemented
		Suggested to change the course Technical Seminar from III semester to IV semester.	Implemented

Sl. No.	Name of the BOS Member	Suggestions given by experts	Rectification / Implantations or Suggestions taken by the Department
4.	Sri. Avinash J, Lead SDET, Sutherland global service Pvt. Ltd., 103 2nd cross kaveri main road, Raghavendra nagar, Mysore -570011	Mini Application need to be implemented in I and II semester integrated professional core courses.	Accepted

Sl. No.	Name of the BOS Member	Suggestions given by experts	Rectification / Implantations or Suggestions taken by the Department
5.	Sri. Praveena H M, Project Manager, Nuware Solutions , Bangalore.	Add the Technical Skills in the syllabus of Employability Enhancement Skill-2 P24MCA28.	Implemented
		Motivate the students to do startup / Research internship.	Considered

Date: 10/09/2024

*V. N. Veena*  
(Dr. M. N. VEENA)  
Head of the Department  
BOS Chairperson,  
Dept. of MCA,  
P.E.S. College of Engineering  
MANGYA - 571 401.



DEPARTMENT OF PHYSICS  
P E S College of Engineering, Mandya 571 401  
(An Autonomous Institution affiliated to VTU Belgaum)



Dr. B M Thammanna  
Professor & Head

Cell No. 9620793888

Mail ID: bmtpesce@yahoo.com

Date: 23-3-2024

**Proceedings of BOS Meeting held on 23-03-2024**

Dear Sir/Madam,

At the outset, I welcome all the BoS committee members being present for the meeting. I also take this opportunity to thank all the members sparing their valuable time and expertise to revise the theory curriculum of Advanced Physics for VI Semester B.E. Please find herewith enclosed minutes of the meeting for your kind information.

Chairman

BOS, Department of Physics  
HOD OF PHYSICS  
P.E.S. College of Engineering  
Mandya-571 401

*Minutes of BOS meeting held on 23<sup>rd</sup> March 2024,*

**Members present:**

1. Dr. Divakar, Associate Professor & HOD, VVCE, Mysuru

**Institutional Members:**

1. Mr. B. M. Thammanna, Associate Professor, PESCE, Mandya (Member).
2. Dr. T. S. Shashikumar, Assistant Professor, PESCE, Mandya (Member).
3. Dr. Thejas Urs G, Assistant Professor, PESCE, Mandya (Member).
4. Mrs. Rajani G, Assistant Professor, PESCE, Mandya (Member).

**Resolutions:**

The Agenda 1-5 were discussed and the following resolutions were made.

1. A newly constructed Syllabus for the course P21PHO605X Advanced Physics on CBCS along with OBE format.
2. Thorough modifications were made on Syllabus by including **self-study component** for the courses P21PHO605X Advanced Physics.
3. Discussions were made on CLO's, CO's, TLO's, Course Contents, Articulation Matrix & CO-PO mapping for B.E program and the suggestions of the experts/members of BoS were incorporated in the above courses and programmers.

Date: 23-3-2024



**P E S COLLEGE OF ENGINEERING, MANDYA**  
(An Autonomous Institution affiliated to V.T.U. Belgaum)  
**DEPARTMENT OF PHYSICS**



**Dr. T. S. Shashikumar, M.Sc. Ph.D.**  
**Assistant Professor & Head**

**Email: tsshashikumar@pesce.ac.in**  
**Mobile No.: 9880879750**

To

Date: 04/06/2024

**IQAC Coordinator**  
P.E.S. College of Engineering  
Mandya-571401

Respected Sir/Madam,

**Subject:** Submitting the details about curriculum changes made in BoS for VI-Semester B.E Open Elective for the Academic Year 2023-24.

**Reference No.:** PESCE/IQAC/2023-24/10 Dated 21/05/2024

With reference to the letter No., and subject cited above, here I am submitting the Proceedings of BoS Meeting held on 23/03/2024 and the details about curriculum changes made in BoS for VI-Semester B.E Open Elective-Advanced Physics (P21PHO6051) for the Academic Year 2023-24 for your kind Information.

Thanking You

*Shashik TS*  
HOD OF PHYSICS  
P.E.S. College of Engineering  
Mandya-571401



DEPARTMENT OF PHYSICS  
P E S College of Engineering, Mandya 571 401  
(An Autonomous Institution affiliated to VTU Belgaum)



Dr. B M Thammanna  
Professor & Head

Cell No. 9620793888

Mail ID: bmtpesce@yahoo.com

Date: 23-3-2024

Submitted

**Subject: Approval of Scheme and Syllabi of Advanced Physics - P21PHO6051 for the academic year 2023-24 to be offered for VI - Sem B.E. programme as Open Elective Course.**

**Ref: PES/DEAN-ACAD/2023-24/78, dated: 15/03/2024.**

With reference to the subject cited above, the BoS meeting is held on 23<sup>rd</sup> March 2024 in the department of physics. In this meeting the committee discussed and approved the Scheme and syllabi for the theory course of Advanced Physics P21PHO6051 which have been constructed on the basis of Outcome Based Education.

With Regards

Dr. B M Thammanna.

Professor & HOD

HOD OF PHYSICS

P.E.S.College of Engineering  
Mandya-571 401



DEPARTMENT OF PHYSICS  
P E S College of Engineering, Mandya 571 401  
(An Autonomous Institution affiliated to VTU Belgaum)



Dr. B M Thammanna  
Professor & Head

Cell No. 9620793888  
Mail ID: bmtpesce@yahoo.com

Date: 23-3-2024

**Proceedings of BOS Meeting held on 23-03-2024**

Dear Sir/Madam,

At the outset, I welcome all the BoS committee members being present for the meeting. I also take this opportunity to thank all the members sparing their valuable time and expertise to revise the theory curriculum of Advanced Physics for VI-Semester B.E. Please find herewith enclosed minutes of the meeting for your kind information.

  
Chairman

BOS, Department of Physics  
HOD OF PHYSICS  
P.E.S. College of Engineering  
Mandya-571 401

Minutes of BOS meeting held on 23<sup>rd</sup> March 2024,

**Members present:**

1. Dr. M. R. Rangaraju, Professor, Dept. of physics, Malnad College of Engineering, Hassan.

**Institutional Members:**

1. Mr. B. M. Thammanna, Associate Professor, PESCE, Mandya (Member).
2. Dr. T. S. Shashikumar, Assistant Professor, PESCE, Mandya (Member).
3. Dr. Thejas Urs G, Assistant Professor, PESCE, Mandya (Member).
4. Mrs. Rajani G, Assistant Professor, PESCE, Mandya (Member).

**Resolutions:**

The Agenda 1-5 were discussed and the following resolutions were made.

1. A newly constructed syllabus for the course P21PHO6051 Advanced Physics on CBCS along with OBE format.
2. Thorough modifications were made on syllabus by including self-study component for the courses P21PHO6051 Advanced Physics.
3. Discussions were made on CLO's, CO's, TLO's, Course Contents, Articulation Matrix & CO-PO mapping for B.E program and the suggestions of the experts/members of BoS were incorporated in the above courses and programmers.



DEPARTMENT OF PHYSICS  
P E S College of Engineering, Mandya 571 401

(An Autonomous Institution affiliated to VTU Belgaum)



Dr. B M Thammanna  
Professor & Head

Cell No. 9620793888

Mail ID: bmtpesce@yahoo.com

Date: 23-3-2024

Submitted

The Physics department BoS meeting was held on 23<sup>rd</sup> March 2024 in the department of Physics at 10 AM to review the revised Syllabus of VI - Semester B. E. Advanced Physics for the Open Elective Courses (Course Code : P21PHO6051 for 2023-24). The following committee members are being attend the BOS meeting. This is for your kind information and needful action.

Sl. No.	Category	Nomination to the Committee	Name of the Person	Signature
1.	Head of the Department	Chairperson	Dr. B M Thammanna Professor & HOD	
2.	Members, Dept. of Physics, PESCE, Mandya	Faculty Members at different levels & with different specialization	Dr. T. S. Shashikumar Assistant Professor	
			Dr. Thejas Urs G Assistant Professor	
			Mrs. Rajani G Assistant Professor	
3.	Subject experts from outside the college. Nominated by Academic Council	Member	Dr. M R Rangaraju Professor Department of Physics MCE, Hassan	

Chairman

BOS, Department of Physics

HOD OF PHYSICS

P.E.S. College of Engineering  
Mandya-571 401

Copy to:

1. Dean Academic, PESCE, Mandya.

DEPARTMENT OF PHYSICS, PESCE, MANDYA : 571 401

Open Elective Course

**Unit-IV: Techniques of Material Characterization**

Introduction to microscopy: Basic principles of image formation, Magnification, depth of field, depth of focus etc. General concepts of electron microscopy, Transmission electron microscopy (TEM), Electron diffraction in TEM, Application of electron diffraction; Scanning electron microscopy (SEM): Working principle in scanning mode, Signal generation: Inelastic scattering (Secondary vs. backscattered electron, Auger electrons, characteristic X-ray emission), STEM.

8 Hrs.

**Self-Study Component:** X-ray production, Electromagnetic radiation, continuous spectrum.

**Unit-V: Theory of Relativity**

Frames of references- Inertial and Non-inertial frames, Galilean transformation, Basic postulates of special theory of relativity, Lorentz transformation equations and physical significance of Lorentz invariance, Length contraction, time dilation, Relativistic velocity transformation relations, Equation for variation of mass with velocity, mass - energy equivalence, Relativistic relation between energy and momentum. Numerical Problems.

8 Hrs

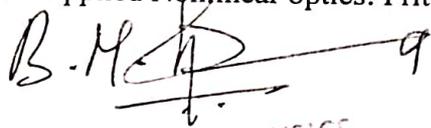
**Self-Study Component:** Michelson Marle Experiment.

**Text Books**

1. Heat and Thermodynamics, Mark W Zemaskay and Richard H Dittman, Tata McGraw-Hill Publishing Co. (Special Indian Edition)
2. Halliday and Resnick, Physics, David Halliday, Robert Resnick, Jearl Walker, Farrell Edwards, John J. Merrill, Fundamentals of Physics, John Wiley & Sons.
3. Electron microscopy and Analysis: P. J. Goodhew, J. Humphreys, R. Beanland, 3rd Edition.
4. Lasers & Nonlinear optics: B B. Laud, New age International Publishers.

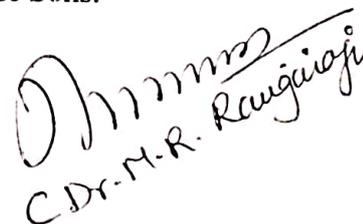
**References**

1. S. O. Pillai : Solid State Physics, (New Revised Sixth Edition) – New Age International (P) Limited, Publishers, New Delhi.
2. R. Murugesan, Kiruthiga Sivaprasanth ; Modern Physics – S. Chand & Company Ltd.
3. B. L. Theraja ; Modern Physics – S. Chand & Company Ltd.
4. Scanning Electron Microscopy and X-Ray Microanalysis: Joseph I. Goldstein.
5. Applied Nonlinear optics: Frits Zernike & John E. Midwinter, John Wiley & Sons.

  
HOD OF PHYSICS  
P.E.S. College of Engineering  
Mandya-571 401

  
S. S. Raju  
2



  
C. Dr. M. R. Ravikiran

Open Elective Course  
C. Course Content (CC) or Syllabus

Program level: B.E

Sem: VI

L-T-P: 3 - 0 - 0

Course Title: Advanced Physics

Course Code: P21PHO6051

Contact Period: Lecture: 40 Hr, Exam: 3 Hr

Weightage: CIE: 50; SEE: 50 Marks

Open Elective Course

## Advanced Physics

### Unit – I: Solid State Physics

Concept of lattice and basis, periodic crystal, unit cell, Bravais lattice, Crystal planes and Miller indices. Interplanar spacing in terms of Miller indices. Co-ordination number. Atomic packing factors (SC, FCC, BCC). X-ray diffraction, Bragg's law, Bragg spectrometer (construction and working), Powder method, Structure of KCl. Industrial & Medical applications of X-rays. Numerical problems. 8 Hrs

**Self-Study Component:** Classification of solids, Brief discussion on defects in solids.

### Unit – II: Thermal Physics

Conduction of heat in solids. Thermal conductivity, expression for thermal conductivity of a conductor using classical free electron theory. Wiedemann–Franz law, calculation of Lorentz number using classical and quantum assumptions. Theory and determination of thermal conductivity using Forbe's and Lee – Charlton's methods. Joule Thomson Effect, principle and working of refrigerators, Numerical problems. 8 Hrs

**Self-Study Component:** Transfer of heat energy- Thermal conduction, convection and radiation.

### Unit – III: Nonlinear Optics

Nonlinear optics and its significance: nonlinear susceptibility and nonlinear polarization; Kerr effect and self-phase modulation, optical parametric amplification and oscillation; Second harmonic generation (SHG) and Third harmonic generation (THG), Principles and explanation of frequency doubling and tripling, Nonlinear optical crystals and materials used for second harmonic generation (SHG) and third harmonic generation (THG); Applications of nonlinear optics in laser technology, telecommunications. 8 Hrs

**Self-Study Component:** Utilization of SHG and THG in frequency doubling, frequency mixing.

## **Course Title: Advanced Physics (Open Elective)**

**Course Code: P21PHO6051**

### **Course Outcomes**

1. **Recall** and comprehend fundamental principles in physics to facilitate understanding of advanced topics such as Solid State Physics, Thermal Physics, Non-linear Optics, Materials Characterization, and the Theory of Relativity.
2. **Apply** theoretical knowledge and analytical skills acquired in Advanced Physics to address real-world challenges, leading to the development of novel technologies and innovations.
3. **Identify** and analyze engineering applications derived from principles in Non-linear Optics, Thermal Physics, and Solid State Physics, showcasing an interdisciplinary approach to problem-solving and technological advancement.
4. **Utilize** variety of characterization techniques, including spectroscopic, microscopic, and imaging methods, to investigate and understand the properties and behaviors of materials, enabling informed decision-making in research and industrial applications.
5. **Formulate** new ideas by integrating various topics within Advanced Physics to devise original concepts and approaches, promoting interdisciplinary collaboration and contributing to advancements in science and technology.

Open Elective Course

C. Course Content (CC) or Syllabus

Program level : B.E

Sem: VI

L-T-P : 3 - 0 - 0

Course Title: Condensed Matter Physics

Course Code: P18PHO652

Contact Period: Lecture: 40 Hr, Exam: 3 Hr

Weightage: CIE: 50; SEE: 50 Marks

Open Elective Course

**CONDENSED MATTER PHYSICS**

**Unit – I : Solid State Physics**

Concept of lattice and basis, periodic crystal, unit cell, Bravais lattice, Crystal planes and Miller indices. Interplanar spacing in terms of Miller indices. Co-ordination number. Atomic packing factors (SC, FCC, BCC). X-ray diffraction, Bragg's law, Bragg spectrometer (construction and working), Powder method, Structure of KCl. Industrial & Medical applications of X-rays. Numerical problems.

8 Hrs

**Self Study Component:** Classification of solids, Brief discussion on defects in solids.

**Unit – II : Thermal Physics**

Conductions of heat in solids. Thermal conductivity, expression for thermal conductivity of a conductor using classical free electron theory. Wiedemann–Franz law, calculation of Lorentz number using classical and quantum assumptions. Theory and determination of thermal conductivity using Forbe's and Lee – Charlton's methods. Joule Thomson Effect, principle and working of refrigerators, Numerical problems.

8 Hrs

**Self Study Component:** Transfer of heat energy- Thermal conduction, convection and radiation.

**Unit – III : Thermodynamics**

Carnot's theorem, Carnot's engine. Heat engines: Otto engine, Otto cycle: Expression for efficiency, Diesel engine, Diesel cycle: Expression for efficiency and Carnot's engine. Concept of entropy, Change in entropy in reversible and irreversible processes, Entropy-temperature diagram. Numerical problems.

8 Hrs

**Self Study Component:** Review of laws of thermodynamics.

**Unit-IV: Electrostatics and Magnetostatics**

Electrostatic field and potential of a dipole, Bio-Savart law, Divergence and curl of a static magnetic field. Faraday's law in terms of EMF produced by changing magnetic flux; equivalence of Faraday's law and motional EMF; Lenz's law; Electromagnetic braking and its applications; Differential form of Faraday's law expressing curl of electric field in terms of

## Open Elective Course

time-derivative of magnetic field and calculating electric field due to changing magnetic fields in quasi-static approximation; energy stored in a magnetic field. Numerical problems.

8 Hrs

**Self Study Component:** Electrostatic potential for a charge distribution. Magnetization and associated bound currents.

### Unit-V: Relativistic Mechanics:

Frames of references- Inertial and Non-inertial frames, Galilean transformation, Basic postulates of special theory of relativity, Lorentz transformation equations and physical significance of Lorentz invariance, Length contraction, time dilation, Relativistic velocity transformation relations, Equation for variation of mass with velocity, mass - energy equivalence, Relativistic relation between energy and momentum. Numerical Problems.

8 Hrs

**Self Study Component:** Michelson Marle Experiment.

### Text Books

1. Heat and Thermodynamics, Mark W Zemaskay and Richard H Dittman, Tata McGraw-Hill Publishing Co. (Special Indian Edition)
2. Thermodynamics and Statistical Mechanics, Greiner, Springer.
3. Halliday and Resnick, Physics, David Halliday, Robert Resnick, Jearl Walker, Farrell Edwards, John J. Merrill, Fundamentals of Physics, John Wiley & Sons.
4. Brij Lal, N. Subramahmanyam & P.S. Hemne : Heat Thermodynamics and Statistical Physics – S. Chand & Company Ltd.

### References

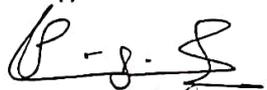
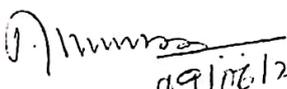
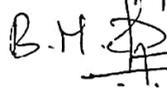
1. S. O. Pillai : Solid State Physics, (New Revised Sixth Edition) – New Age International (P) Limited, Publishers, New Delhi.
2. S. R. Shankara Narayana : Heat and Thermodynamics – Sultan Chand & Sons
3. R. Murugesan, Kiruthiga Sivaprasanth ; Modern Physics – S. Chand & Company Ltd.
4. B. L. Theraja ; Modern Physics – S. Chand & Company Ltd.

## D. Course Outcomes (COs)

At the end of the course, the students should be able to:

- CO1 - Recall/Remember the basic concepts and principles of Condensed Matter Physics describing the phenomena associated with Engineering field.
- CO2 - Explain/Describe the various Phenomenon used in Condensed Matter Physics to Engineering/technical field.
- CO3 - Formulate/Derive the Expressions for the concepts of Condensed Matter Physics pertaining to Engineering field.
- CO4 - Apply the knowledge of Condensed Matter Physics to analyze/solving the numerical problems allied to Engineering field.

### Members Present:

S. No.	Name	Position	Institution	Signature
1.	Dr. Shivalinge Gowda,	Chairperson,	PESCE, Mandya	
2.	Dr. R. Gopalkrishna Urs,	Subject Expert,	NIE, Mysore	 19/6/20
3.	Dr. M. V. Murgendrappa,	Subject Expert,	BMSCE, Bangaluru	
4.	Dr. M. R. Rangaraju,	VTU Nominee,	MCE, Hassan	 19/06/2020
5.	Mr. B. M. Thammanna,	Member,	PESCE, Mandya	 19/6/20
6.	Dr. T. S. Shashikumar,	Member,	PESCE, Mandya	 19/06/20

**List of new courses added and % of new courses added**

Sl. No.	Name of the new course introduced	Year of introduction	% added	Link of the relevant document
1	Advanced physics/ P21PHO6051	2024	40%	<a href="https://drive.google.com/file/d/19J4EOWrmg0m-4NPAFx7fQqul-0kpYd9V/view?usp=sharing">https://drive.google.com/file/d/19J4EOWrmg0m-4NPAFx7fQqul-0kpYd9V/view?usp=sharing</a>

**Documents attached:**

- Minutes of relevant Academic Council/BOS meetings

**List of new topics added and percentage of new content added (with in the subject)**

Sl. No.	Name of the new course introduced	Topic added	% of content added	Link of the relevant document
1	Advanced physics/ P21PHO6051	(i) Nonlinear Optics (ii) Techniques of Material Characterization	40%	<a href="https://drive.google.com/file/d/19J4EOWrmg0m-4NPAFx7fQqul-0kpYd9V/view?usp=sharing">https://drive.google.com/file/d/19J4EOWrmg0m-4NPAFx7fQqul-0kpYd9V/view?usp=sharing</a>

**Documents attached:**

- New Syllabus copy

**List of topics removed and percentage of old content removed (with in the subject)**

Sl. No.	Name of the old course	Topic removed	% of content removed	Link of the relevant document
1	Condensed matter physics/ P21PHO652	(i) Thermodynamics (ii) Electro statistic & Magnatoststics	40%	<a href="https://drive.google.com/file/d/1uWqLuOi0l4GxXNdIXA1kD5ApILOyZsZI/view?usp=sharing">https://drive.google.com/file/d/1uWqLuOi0l4GxXNdIXA1kD5ApILOyZsZI/view?usp=sharing</a>

**Documents attached:**

- Old Syllabus copy



**Submitted**

**Date: 02/01/2023**

**Course:** First/Second Semester BE

**Course Title:** Engineering Chemistry Theory and Lab (CVE,CSE,EEE and ME Streams)

**Course Code:** P22CH12/22

**Sub:** - Finalization of Syllabi of Engineering Chemistry Theory and lab as per CBCS along with OBE during academic year 2022-2023.

**Ref:** PES / DEAN / ACAD / 2022 -23. Dated: 19/11/2022

Proceeding of BOS meeting for finalizing I/II semester B.E syllabi in Engineering Chemistry theory and lab (Autonomous) was conducted on 02/01/2023 at the Department of Chemistry, PESCE, Mandya.

SL. No.	Name & Designation	Chairman/ Member	Signature
1	Dr. H. Ramachandra Professor & Head	Chairperson PESCE, Mandya	
2	Dr. Prashanth. P.A Associate Professor	Internal member PESCE, Mandya	
3	Dr. Chandrashekar Associate Professor.	Internal member PESCE, Mandya	
4	Dr. Harsha. M Assistant Professor.	Internal member PESCE, Mandya	
5	Dr. Charan kumar. H. C Assistant Professor.	Internal member PESCE, Mandya	
6	Dr. M. B. Jagadeesh Prof.& HOD of Chemistry	External member MCE. Hassan	Virtual communication
7	Dr. S. Manjappa Prof.& HOD of Chemistry	External member UBDTC. Davanagere	Virtual communication
8	Dr. B. Vijaya Prof. of Chemistry	External member UBDTC, Davanagere	Virtual communication

At the outset, BOS Chairman welcomed all the members. In the meeting, the syllabi of Engineering Chemistry theory and lab were discussed in detail and the changes are made according to the need of the emerging students and industry requirement as per CBCS along with OBE. External Subject Experts were connected through the virtual communication. The BOS members approved the same with the scheme of evaluation and are sent to the Academic dean for approval.

BOS Chairman & Head,  
Department of Chemistry,  
P.E.S. College of Engineering,  
Mandya.



**P.E.S. College of Engineering, Mandya – 571401**  
(An Autonomous Institution under Visvesvaraya Technological University, Belgaum)  
Aided by the Govt. of Karnataka  
**DEPARTMENT OF CHEMISTRY**



Date: 21/07/2023

To: -  
The Controller of Examinations (Autonomous)  
PESCE, Mandya

**Course title:** - Applied Chemistry. Course Code: P22CHCS202/ P22CHME202  
**Sub:** - Scrutinization of Applied Chemistry question papers.

Proceedings of BOE meeting of Scrutinization II Semester B.E question papers in Applied Chemistry (Autonomous) conducted on Friday the 21/07/2023 at the Department of Chemistry, PESCE, Mandya.

SI No	Members Present	Chairman/ Member	Signature
1	Dr. Prashanth. P. A. Associate Prof of Chemistry	Chair person, BOE PESCE, Mandya	
2	Dr. Chandrashekar Associate Prof of Chemistry	Internal member PESCE, Mandya	
3	Dr. Harsha. M Assistant Prof of Chemistry	Internal member PESCE, Mandya	
4	Dr. Charan kumar. H. C Assistant Prof of Chemistry	Internal member PESCE, Mandya	
6	Dr. P.M. Ramdas Bhandarkar Professor of Chemistry	External member NIE, Mysore-8	
7	Dr. B. P. Siddaraju Professor of Chemistry	External member CIT Mandya	

At the outset, BOE Chairman welcomed all the members. In the meeting II Semester B.E question papers (Six sets) in Applied Chemistry were scrutinized by the BOE members along with the scheme of valuation and the same is sent to the controller of examination for needful.

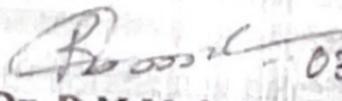
Thanking you,

Chairman, BOE  
Associate Professor & Head  
Department of Chemistry,  
P.E.S. College of Engineering  
Mandya - 571401, Karnataka (Ind

**Department of MATHEMATICS**  
**Board of Studies - UG (2021 - 24)**  
(As per VTU Status an Autonomous Colleges (Amended) 2018)

Sl. No.	Category	Nomination of the committee	Name
1.	Head of the Department	Chair Person	<b>Dr. B. Shanmukha</b>
2.	Faculty members of the department at different levels with different specialization having minimum experience of 5 years	Members (Max of 5)	<b>Dr. Puttaswamy</b> <b>Sri. M N Prakasha</b> <b>Dr. M Prasad</b> <b>Dr. S R Nayaka</b> <b>Dr. G Sharath</b>
3.	Subject experts from outside the college nominated by academic Council	Members (Max of 2)	<b>Dr. R Rangarajan</b> Professor and Chairman, Dept. of Mathematics, University of Mysore-570005 <a href="mailto:rajra63@gmail.com">rajra63@gmail.com</a> 9611109079 <b>Dr. B Cheluvvaraju</b> Professor and Head, Dept. Of Mathematics, Bangalore University, Jnanabharathi Campus Bengaluru-560056, <a href="mailto:bchaluvvaraju@gmail.com">bchaluvvaraju@gmail.com</a> 9449270389
4.	Expert from outside college Nominated by Vice chancellor	Propose 6 members where the University nominates any ONE member	<b>Dr. R Murali</b> Professor, Dept. of Mathematics Dr. AIT, Mallathahally, Bangalore-560056. <a href="mailto:Murali2968@gmail.com">Murali2968@gmail.com</a> 9844259313
5.	Representative from Industry Corporate Sector/ Allied area relating to placement nominated by Academic council	One member	<b>Dr. K Chidananda Murthy</b> #475, 11 <sup>th</sup> B Main Road, 1st Phase Yelahanka New Town Bengaluru-560064 <a href="mailto:Chidu.20ait@gmail.com">Chidu.20ait@gmail.com</a> 9886202607 Intel India Pvt Ltd, Lead software engineer Specialiasation: Cryptography and network security
6.	Post Graduate Meritorious alumnus Nominated by Principal	One member	

  
**Dr. R Girisha**  
Dean - Academic  
**Dr. R. Girisha**  
Dean (Academic)  
P.E.S.C.E., Mandya.

 03.09.2021  
**Dr. R M Mahalingegowda**  
Principal PRINCIPAL  
PES College of Engineering  
Mandya - 571 401.



# P.E.S.COLLEGE OF ENGINEERING

MANDYA - 571 401, KARNATAKA  
(An Autonomous Institution Affiliated to VTU, Belgaum)

DEPARTMENT OF MATHEMATICS

Dr.Puttaswamy, M.Sc., Ph.D., M.I.S.T.E.,  
Professor and Head

☎ : 08232 - 220043 (O), Ext: 264  
☎ : 08232 - 222075, ☎ : +91 9449696905



Date:25-03-2024

## Proceedings of BOS Meeting held on 25 -03-2024

Sub:- Open elective Syllabus **ADVANCED NUMERICAL TEQNIQUES (P21MAO6051)**  
changes and justification-Reg.

### **Resolution:**

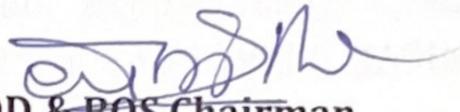
Approval of syllabi changes and justification for the **Open elective Syllabus: ADVANCED NUMERICAL TEQNIQUES (P21MAO6051)** for sixth semester B.E. (common to all branches as for CBCS) with OBE framework have been considered. Discussions were made on CLO's, CO's, TLO's, Course Contents, Articulation Matrix and CO, PO mapping for B.E. programme. Suggestions of the subject experts, VTU nominee and other members of the BOS committee were incorporated in the above courses and programme. The BOS committee authorized to BOS chairman for minor changes/modifications in the syllabi of the course discussed above as and when required and changes/modifications in the syllabi of the course discussed through email with externals.

### Members Present:

Sl. No.	Name	Position	Institution	Signature
1	Dr. B. Shanmukha	Chairman	PESCE, Mandya	
2	Dr.Puttaswamy	Member	PESCE, Mandya	
3	Sri M.N.Prakasha	Member	PESCE, Mandya	
4	Dr. M. Prasad	Member	PESCE, Mandya	
5	Dr. S.R Nayaka	Member	PESCE, Mandya	
6	Dr.G.Sharath	Member	PESCE, Mandya	
7	Dr.R. Rangarajan	External Member	Department of Mathematics, University Of Mysore, Mysore	
8	Dr.B.Chaluvaraju	External Member	Department of Mathematics, Bangalore University ,Bangalore	
9	Dr.R. Murali	External Member	Department of Mathematics, Dr.AIT	

			Bangalore	
10	Dr.K.Chidanandamurthy	Representative From Industry External Member	Intel India Pvt Ltd	

**Suggestions from Internals:**

  
**HOD & BOS Chairman**  
**Department of Mathematics**  
**PROFESSOR AND HEAD**  
 DEPARTMENT OF MATHEMATICS  
 J.E.S. College of Engineering  
 MANDYA-571 401

*[Faint handwritten notes and scribbles in the left margin]*

# Department of MATHEMATICS

## Board of Studies-UG (2024-27)

Sl.No.	Category	Nomination of the Committee	Name
1	Head of the Department	Chairperson	Dr.Puttaswamy
2	Faculty members of the department at different levels with different specialization having minimum experience of 5years	Members	<ol style="list-style-type: none"> <li>1. Dr.B.Shanmukha</li> <li>2. Sri M.N.Prakasha</li> <li>3. Dr.M. Prasad</li> <li>4. Dr. Nayaka S.R</li> <li>5. Smt M.R.Harini</li> </ol>
3	Subject experts from outside the college nominated by academic council	Members	<ol style="list-style-type: none"> <li>1. Dr.P.S.K. Reddy, Professor and Head Dept. of Mathematics J.S.S Science and Technology University, Mysore-570006 Ph.9964069548 Mail:pskreddy@jssuniv.in</li> <li>2. Dr D.S Raju, .Professor and Head Dept. of Mathematics, NIE (North campus) koorgalli, Mysore-570018 Ph.9900114146 Mail: rajuds@nieit.ac.in</li> </ol>
4	Expert from outside college nominated by Vice Chancellor	Propose 6 members where the University any ONE member	Dr. SureshKumar, Professor and Head Dept. of Mathematics, Siddaganga Institute of Technology, Tumkur-572103 Ph. 9449626854 Mail: <a href="mailto:ssk@sit.ac.in">ssk@sit.ac.in</a>
5	Representative from Industry Corporate Sector / Allied area relating to placement nominated by Academic council	One member	
6	Post Graduate Meritorious alumnus Nominated by Principal	One member	

  
HOD

Department of Mathematics

Dr. PUTTASWAMY M.Sc., Ph.D., MISTE  
Professor and Head  
Dept. of Mathematics  
P.E.S. College of Engineering.  
Mandya - 571 401



# P.E.S COLLEGE OF ENGINEERING, MANDYA - 571 401

(An Autonomous Institution Affiliated to VTU, Belagavi)

## Department of Mathematics

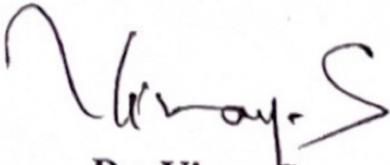
### Board of Studies - UG (2024 - 27)

[As per VTU Statutes on Autonomous Colleges (Amended) 2018]

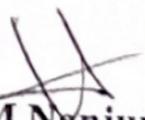
Sl. No.	Category	Nomination of the Committee	Name
1	Head of the Department	Chairperson	<b>Dr. Puttaswamy</b> Professor
2	Faculty members of the department at different levels with different specialization having minimum experience of 5 years	Members	<b>Dr. B Shanmukha</b> , Associate Professor <b>Prof. M N Prakasha</b> , Assistant Professor <b>Dr. M Prasad</b> , Assistant Professor <b>Dr. Nayaka S R</b> , Assistant Professor <b>Smt. M R Harini</b> , Assistant Professor
3	Subject experts from outside the college nominated by academic council	Members	<b>Dr. P. S. K. Reddy</b> Professor and Head, Dept. of Mathematics J.S.S Science and Technology University, Mysore-570006 Ph.9964069548 Mail:pskreddy@jsssuniv.in <b>Dr. D S Raju</b> Professor and Head Dept. of Mathematics, NIE (North campus) koorgalli, Mysore-570018 Ph.9900114146 Mail: rajuds@nieit.ac.in
4	Expert from outside college nominated by Vice Chancellor	VTU Nominee	<b>Dr. Shivaswamy P M</b> Associate Professor, Department of Mathematics, BMSCE , Bangalore Ph. No: 8095031069 Mail: Shivaswamy.pm@gmail.com
5	Representative from Industry Corporate Sector / Allied area relating to placement nominated by Academic council	One member	---
6	Post Graduate Meritorious alumnus Nominated by Principal	One member	---

  
**Dr. B Dinesh Prabhu**  
Dean Academic

**Dean (Academic)**  
P.E.S.C.E., MANDYA.

  
**Dr. Vinay S**  
Vice Principal

**Vice Principal**  
P.E.S. College of Engg. Mandya

  
**Dr. H M Nanjundaswamy**  
Principal

**Principal**  
PES College of Engineering  
Mandya - 571 401