

Subject:	<b>Engineering Physics</b>	
CO1	PO1	<b>Engineering knowledge:</b>
		<b>Observation:</b> Concept of Basic Physics are not clear. If the basic concepts are not clear to the students, they find it difficult to build their understanding of the subject, to appreciate its importance and arrive at some result.
	<b>Action taken:</b> 1. Extra class will be held to improve the concepts of Basic Physics. 2. Video lecture may be shared on the concept of physics.	
	PO2	<b>Problem analysis:</b>
		<b>Observation:</b> Students sometimes find it difficult to solve the numerical problems because of lack of practicing in class
	<b>Action taken:</b> 1. Remedial classes will be held 2. Frequent class room discussions will be organized on a given problem and students will be encouraged to find as many solutions as possible.	
PO12	<b>Life-long learning:</b>	
	<b>Observation:</b> As an IT graduate some students are not interested in physics.	
	<b>Action taken:</b> 1. Motivate students by sharing some video which shows the role of physics in different areas of IT. 2. By arrangement of expert lectures and talks which emphasize Physics is a fundamental subject required for any new technological application.	
CO2	PO1	<b>Engineering knowledge:</b>
		<b>Observation:</b> Concept of Basic Physics not clear. If the basic concepts are not clear to the students, they find it difficult to build their understanding of the subject, to appreciate its importance and arrive at some result.
	<b>Action taken:</b> 1. Extra class will be held to improve the concepts of Basic Physics. 2. Video lecture may be shared on the concept of physics.	
	PO2	<b>Problem analysis:</b>
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	<b>Action taken:</b> 1. Remedial classes will be held 2. Frequent class room discussions will be organized on a given problem and students will be encouraged to find as many solutions as possible.	
PO9	<b>Individual and team work:</b>	
	<b>Observation:</b> Insufficient laboratory practice towards the specific domain of physics lab./lecture classes.	
PO12	<b>Life-long learning:</b>	
	<b>Observation:</b> As an IT graduate some students are not interested in physics. <b>Action taken:</b> 1. Motivate students by sharing some video which shows the role of physics in different areas of IT. 2. By arrangement of expert lectures and talks which emphasize Physics is a fundamental subject required for any new technological	
CO3	PO1	<b>Engineering knowledge:</b>
		<b>Observation:</b> Concept of Basic Physics not clear. If the basic concepts are not clear to the students, they find it difficult to build their understanding of the subject, to appreciate its importance and arrive at some result.
	<b>Action taken:</b> 1. Extra class will be held to improve the concepts of Basic Physics. 2. Video lecture may be shared on the concept of physics.	
	PO2	<b>Problem analysis:</b>
		<b>Observation:</b> Students sometimes find it difficult to solve the numerical problems because of lack of practicing in class
	<b>Action taken:</b> 1. Remedial classes will be held 2. Frequent class room discussions will be organized on a given problem and students will be encouraged to find as many solutions as possible.	
PO9	<b>Individual and team work:</b>	
<b>Observation:</b> Insufficient laboratory practice towards the specific domain of physics		

		lab./lecture classes.
	PO12	<b>Life-long learning:</b> <b>Observation:</b> As a IT graduate some students are not interested in physics . <b>Action taken:</b> 1. Motivate students by sharing some video which show the role of physics in different areas of IT. 2. By arrangement of expert lectures and talk which emphasis Physics is a fundamental subject required for any new technological
CO4	PO1	<b>Engineering knowledge:</b> <b>Observation:</b> Concept of Basic Physics not clear. If the basic concepts are not clear to the students, they find it difficult to build their understanding of the subject, to <b>Action taken:</b> 1. Extra class will be held to improve the cocepts of Basic Physics. 2. Vedio lecture may be share on the concept of physics.
	PO2	<b>Problem analysis:</b> <b>Observation:</b> Students sometimes find it difficult to solve the numerical problems <b>Action taken:</b> 1. Remedial classes will be held 2.Frequent class room discussions will be organised on a given problem and students will be encouraged to find as many solutions as possible.
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CO5	PO1	<b>Engineering knowledge:</b> <b>Observation:</b> Concept of Basic Physics not clear <b>Action taken:</b> 1. Extra class will be held to improve the cocepts of Basic Physics. 2. Vedio lecture may be share on the concept of physics.
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	PO12	<b>Life-long learning:</b> <b>Observation:</b> As a IT graduate some students are not interested in physics . <b>Action taken:</b> 1. Motivate students by sharing some video which show the role of physics in different areas of IT. 2. By arrangement of expert lectures and talk which emphasis Physics is a fundamental subject required for any new technological application.

Subject	<b>ELECTRONIC MEASUREMENT &amp; MEASUREMENT (BECT302)</b>	
CO1	PO1	<b>Engineering knowledge:</b>
		Observation: Concept of Basic Electronics not clear
		Action taken: Extra classes taken to improve the cocepts of Basic Electronis
	PO2	<b>Problem analysis:</b>
		Observation: Students sometimes find it difficult to solve the Engineering problems because of lack of practicing in class
	Action taken: Students are encouraged to ask questions which are solved in the lecture/ tutorial	
	PO3	<b>Design/development of solutions:</b>
		Observation: Some students find it difficult to solve the engineering problems due to poor past concepts.
	Action taken:Fabrication Processes are taught with the help of real tool dispay in workshop etc.	
	PO4	<b>Conduct investigations of complex problems:</b>
		Lack of involvement for investigation of the complex problems for few students
	Motivate student to use new software	
	PO5	<b>Modern tool usage:</b>
Students were needed to be counseled to use the Design/Analysis tools.		
Value Added Classes are being conducted using modern tools.		
PO12	<b>Life-long learning:</b>	
	Some students are more interested in marks rather in gaining knowledge.	
Motivate students to do hand on experiments and project.		
PSO1	<b>Ability to construct Electronic circuits and to Simulate the circuits with software tools:</b>	
	Students were needed to be counseled to use the Design/Analysis tools.	
Value Added Classes are being conducted using modern tools.		
PSO3	<b>Ability to analyse various Networking and Communication areas:</b>	
	Students were needed to be counseled to use the Design/Analysis tools.	
Value Added Classes are being conducted using modern tools.		
PSO4	<b>Ability to Implement their professional skills and techniques in the integrated circuit design</b>	
	Students were needed to be counseled to use the Design/Analysis tools.	
Value Added Classes are being conducted using modern tools.		
CO2	PO1	<b>Engineering knowledge:</b>
		Observation: Concept of Basic Electronics not clear
		Action taken: Extra classes taken to improve the cocepts of Basic Electronis
	PO2	<b>Problem analysis:</b>
		Observation: Students sometimes find it difficult to solve the Engineering problems because of lack of practicing in class
	Action taken: Students are encouraged to ask questions which are solved in the lecture/ tutorial	
	PO3	<b>Design/development of solutions:</b>
		Observation: Some students find it difficult to solve the engineering problems due to poor past concepts.
	Action taken:Fabrication Processes are taught with the help of real tool dispay in workshop etc.	
	PO4	<b>Conduct investigations of complex problems:</b>
		Lack of involvement for investigation of the complex problems for few students
	Motivate student to use new software	
	PO5	<b>Modern tool usage:</b>
Students were needed to be counseled to use the Design/Analysis tools.		

		Value Added Classes are being conducted using modern tools.
	PO12	<b>Life-long learning:</b> Some students are more interested in marks rather in gaining knowledge. Motivate students to do hand on experiments and project.
	PSO1	<b>Ability to construct Electronic circuits and to Simulate the circuits with software tools:</b> Students were needed to be counseled to use the Design/Analysis tools. Value Added Classes are being conducted using modern tools.
	PSO3	<b>Ability to analyse various Networking and Communication areas:</b> Students were needed to be counseled to use the Design/Analysis tools. Value Added Classes are being conducted using modern tools.
	PSO4	<b>Ability to Implement their professional skills and techniques in the integrated circuit design</b> Students were needed to be counseled to use the Design/Analysis tools. Value Added Classes are being conducted using modern tools.
CO3	PO1	<b>Engineering knowledge:</b> Observation: Concept of Basic Electronics not clear Action taken: Extra classes taken to improve the cocepts of Basic Electronis
	PO2	<b>Problem analysis:</b> Observation: Students sometimes find it difficult to solve the Engineering problems because of lack of practicing in class Action taken: Students are encouraged to ask questions which are solved in the lecture/ tutorial
	PO3	<b>Design/development of solutions:</b> Observation: Some students find it difficult to solve the engineering problems due to poor past concepts. Action taken: Fabrication Processes are taught with the help of real tool dispay in workshop etc.
	PO4	<b>Conduct investigations of complex problems:</b> Lack of involvement for investigation of the complex problems for few students Motivate student to use new software
	PO5	<b>Modern tool usage:</b> Students were needed to be counseled to use the Design/Analysis tools. Value Added Classes are being conducted using modern tools.
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	PSO1	<b>Ability to construct Electronic circuits and to Simulate the circuits with software tools:</b> Students were needed to be counseled to use the Design/Analysis tools. Value Added Classes are being conducted using modern tools.
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CO4		Action taken: Students are encouraged to ask questions which are solved in the lecture/ tutorial	
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	PSO1		<b>Ability to construct Electronic circuits and to Simulate the circuits with software tools:</b> Students were needed to be counseled to use the Design/Analysis tools. Value Added Classes are being conducted using modern tools.
		PSO3	<b>Ability to analyse various Networking and Communication areas:</b> Students were needed to be counseled to use the Design/Analysis tools. Value Added Classes are being conducted using modern tools.
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		CO5	PO1
	PO2		
			PO3
	PO4		
PO5			<b>Modern tool usage:</b> Students were needed to be counseled to use the Design/Analysis tools. Value Added Classes are being conducted using modern tools.
	PO12		<b>Life-long learning:</b> Some students are more interested in marks rather in gaining knowledge. Motivate students to do hand on experiments and project.
PSO1			<b>Ability to construct Electronic circuits and to Simulate the circuits with software tools:</b> Students were needed to be counseled to use the Design/Analysis tools. Value Added Classes are being conducted using modern tools.
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	PSO4	<b>Ability to Implement their professional skills and techniques in the integrated circuit design</b>
		Students were needed to be counseled to use the Design/Analysis tools.
		Value Added Classes are being conducted using modern tools.

Subject	Design and analysis of Algorithm (TCS-503)	
CO1	PO1	<b>Engineering knowledge:</b>
		Observation: Concept of Asymptotic Notation was not clear
		Action taken: Extra classes taken for Asymptotic notation
	PO2	<b>Problem analysis:</b>
		Observation: Students find it difficult to analyze the time complexity of a program
		Action taken: More example of program code were provided in class as well as in lab
	PO3	<b>Design/development of solutions:</b>
		Observation: Some students find it difficult to solve the engineering problems due to poor basic concepts.
		Action taken: Extra attention is given in the class to learn how to breakdown the big problem into smaller one and design/develop it's solution.
	PO4	<b>Conduct investigations of complex problems:</b>
		Observation: Due to lack of basic concepts of C and Data structure students find it difficult to understand the complex problem
		Action Taken: Motivated students and took extra class for basic concepts
	PO5	<b>Modern tool usage:</b> Some students are more interested in marks rather in gaining knowledge.
Motivated students to do hand on experiments and project in C language		
PO12	Observation: Analyzing the algorithm is a very important aspect for students for their future endeavours.	
	Action: Many simple to complex Programs were given to students as example and made them understand how to analyze the code.	
PSO1	The knowledge to analyze the problem can be applied to solve complex engineering problems.	
	Value Added Classes and workshops are being conducted using such tools and methods.	
PSO2	The knowledge of Insertion sort, quick sort and merge can be used to solve complex engineering problem	
	Value Added Classes are being conducted using modern tools.	
PSO3	Carefully understanding the algorithm analysis concepts will help student to pursue a advance course in algorithms for higher studies.	
CO2	PO1	<b>Engineering knowledge:</b>
		Observation: Some students find it difficult to understand big algorithms work/algorithm flow like Merge sort or heap sort
		Action taken: Extra lab classes were taken for making students understand these concepts
	PO2	<b>Problem analysis:</b>
		Observation: Which design technique to apply is a question faced by many students
		Action taken: Some theoretical GATE questions were given to students for better understanding
	PO3	<b>Design/development of solutions:</b>
		Observation: Students faced problem in which design technique to choose
		Action taken: Extra classes were taken to resolve this issue
	PO4	<b>Conduct investigations of complex problems:</b>
		Observation: Student faced problem in how much refinement is done a particular problem e.g. Matrix chain multiplication or Travelling salesman problem
		Action: Research done till now and solution provided till now for various problems were discussed with students

	PO5	<b>Modern tool usage:</b> Students faced problem to apply designing techniques to coding solution Action: Students were given more hand on experiments and project.
	PO12	Observation: Designing the algorithm is a very important aspect in any field of computer science be it opertiong system or computer network Action: Many simple to complex Programs were given to students as example and made them understand how the designing is done
	PSO1	The knowledge to choose appropriate algorithm can be applied to solve complex engineering problems. Value Added Classes are being conducted using modern tools.
	PSO2	The knowledge of algorithm techniques like divide and conquer can be used to solve complex engineering problem Value Added Classes are being conducted using modern tools.
	PSO3	Carefully understanding the algorithm designing concepts will help student to pursue a advance course in algorithms for higher studies. Value Added Classes are being conducted using modern tools.
CO3	PO1	<b>Engineering knowledge:</b> Observation: Some students find it difficult to understand the basics of data structure Action taken: Extra classes taken for Data structure
	PO2	<b>Problem analysis:</b> Observation: Students sometimes find it difficult to code Action taken: More attention on programming is given in the class along with theory
	PO3	<b>Design/development of solutions:</b> Observation: Students sometimes find it difficult to code Action taken: More attention on programming is given in the class along with theory
	PO4	<b>Conduct investigations of complex problems:</b> Observation: Student faced problem in how to investigate the complexity or running and storage needed to run the program Action: various problems were discussed with students to give clarity to the topic
	PO5	<b>Modern tool usage:</b> Observation: Students were confused about which data structure to choose to implement a particular problem Action: Students were divided into groups and different problems were assigned to them to make them understand the coding procedure
	PO12	<b>Life-long learning:</b> Students were not paying enough attention to code to make it according to the coding norms nor according to the steps of algorithm Motivate students to do hand on experiments and project.
	PSO1	The knowledge to analyse and design is used to solve complex engineering problems. Value Added Classes are being conducted using modern tools.
	PSO2	The knowledge of analyzing and designing is applied to understand complex engineering problem Value Added Classes are being conducted using modern tools.
	PSO3	Carefully understanding the algorithm analysis concepts will help student to pursue a advance course in algorithms for higher studies. Value Added Classes are being conducted using modern tools.
		PO1
	PO2	<b>Problem analysis:</b> Observation: Students sometimes find it difficult to code

CO4		Action taken: More attention on programming is given in the class along with theory
	PO3	<b>Design/development of solutions:</b>
		Observation: Students sometimes find it difficult to code
		Action taken: More attention on programming is given in the class along with theory
	PO4	<b>Conduct investigations of complex problems:</b>
		Observation: Student faced problem in how to investigate and develop dynamic programming solution for complex problems
		Action: various problems were discussed with students to give clarity to the topic
	PO5	<b>Modern tool usage:</b>
		Observation: Students were confused about which data structure to choose to solve a particular dynamic problem
		Action: Students were given more hand on experiments and project.
	PO12	<b>Life-long learning:</b>
		Students were not paying enough attention to code to make it according to the coding norms nor according to the steps of algorithm
Motivate students to do hand on experiments and project.		
PSO1	The knowledge of dynamic programming approach is used to solve complex engineering problems.	
	Value Added Classes are being conducted using modern tools.	
PSO2	The knowledge of dynamic programming is applied to understand complex engineering problem	
	Value Added Classes are being conducted using modern tools.	
PSO3	Carefully understanding the dynamic programming concepts will help student to pursue a advance course in algorithms for higher studies.	
	Value Added Classes are being conducted using modern tools.	
CO5	PO1	<b>Engineering knowledge:</b>
		Observation: Some students find it difficult to understand concepts of P and NP problems
		Action taken: Extra classes taken to explain these concepts
	PO2	<b>Problem analysis:</b>
		Observation: Students sometimes find it difficult to analyze the problems in P and NP
		Action taken: Some basic as well as advanced questions based on these topics were given to students
	PO3	<b>Design/development of solutions:</b>
		Observation: As this topic is still under research therefore students were confused about the solution to the problems
		Action: current examples of algorithm were given to students of P and NP problems
	PO4	<b>Conduct investigations of complex problems:</b>
		Observation: As this topic is still under research therefore students were confused about the analysis to the problems
		Action: Problems like Travelling salesman and graph coloring was taken as example to explore the solutions
PO5	<b>Modern tool usage:</b>	
	Observation: Students were not able to categorize problems into np hard and np complete problems	
	Action: Students were divided into team to make them understand this concept and students were given more hand on experiments on TSP	
PO12	<b>Life-long learning:</b>	
	Some students are more interested in marks rather in gaining knowledge.	
	Motivated students to take some of the topics for research purpose or for higher studies.	

PSO1	The knowledge of P and NP approach is used to understand and solve complex engineering problems.
	Value Added Classes are being conducted using modern tools.
PSO2	The knowledge of NP hard existing solution is applied to understand complex engineering problem
	Value Added Classes are being conducted using modern tools.
PSO3	Carefully understanding the P and NP concepts will help student to pursue a advance course in algorithms for higher studies.
	Value Added Classes are being conducted using modern tools.

Subject	Design and analysis of Algorithm (TIT-503)	
CO1	PO1	<b>Engineering knowledge:</b>
		Observation: Concept of Asymptotic Notation was not clear
		Action taken: Extra classes taken for Asymptotic notation
	PO2	<b>Problem analysis:</b>
		Observation: Students find it difficult to analyze the time complexity of a program
		Action taken: More example of program code were provided in class as well as in lab
	PO3	<b>Design/development of solutions:</b>
		Observation: Some students find it difficult to solve the engineering problems due to poor basic concepts.
		Action taken: Extra attention is given in the class to learn how to breakdown the big problem into smaller one and design/develop it's solution.
	PO4	<b>Conduct investigations of complex problems:</b>
		Observation: Due to lack of basic concepts of C and Data structure students find it difficult to understand the complex problem
		Action Taken: Motivated students and took extra class for basic concepts
	PO5	<b>Modern tool usage:</b> Some students are more interested in marks rather in gaining knowledge. Motivated students to do hand on experiments and project in C language
PO12	Observation: Analyzing the algorithm is a very important aspect for students for their future endeavours.	
	Action: Many simple to complex Programs were given to students as example and made them understand how to analyze the code.	
PSO1	The knowledge to analyze the problem can be applied to solve complex engineering problems.	
	Value Added Classes and workshops are being conducted using such tools and methods.	
PSO2	The knowledge of Insertion sort, quick sort and merge can be used to solve complex engineering problem	
	Value Added Classes are being conducted using modern tools.	
PSO3	Carefully understanding the algorithm analysis concepts will help student to pursue a advance course in algorithms for higher studies.	
CO2	PO1	<b>Engineering knowledge:</b>
		Observation: Some students find it difficult to understand big algorithms work/algorithm flow like Merge sort or heap sort
		Action taken: Extra lab classes were taken for making students understand these concepts
	PO2	<b>Problem analysis:</b>
		Observation: Which design technique to apply is a question faced by many students
		Action taken: Some theoretical GATE questions were given to students for better understanding
	PO3	<b>Design/development of solutions:</b>
		Observation: Students faced problem in which design technique to choose
		Action taken: Extra classes were taken to resolve this issue
	PO4	<b>Conduct investigations of complex problems:</b>
		Observation: Student faced problem in how much refinement is done a particular problem e.g. Matrix chain multiplication or Travelling salesman problem
		Action: Research done till now and solution provided till now for various problems were discussed with students

	PO5	<b>Modern tool usage:</b> Students faced problem to apply designing techniques to coding solution Action: Students were given more hand on experiments and project.
	PO12	Observation: Designing the algorithm is a very important aspect in any field of computer science be it opertiong system or computer network Action: Many simple to complex Programs were given to students as example and made them understand how the designing is done
	PSO1	The knowledge to choose appropriate algorithm can be applied to solve complex engineering problems. Value Added Classes are being conducted using modern tools.
	PSO2	The knowledge of algorithm techniques like divide and conquer can be used to solve complex engineering problem Value Added Classes are being conducted using modern tools.
	PSO3	Carefully understanding the algorithm designing concepts will help student to pursue a advance course in algorithms for higher studies. Value Added Classes are being conducted using modern tools.
CO3	PO1	<b>Engineering knowledge:</b> Observation: Some students find it difficult to understand the basics of data structure Action taken: Extra classes taken for Data structure
	PO2	<b>Problem analysis:</b> Observation: Students sometimes find it difficult to code Action taken: More attention on programming is given in the class along with theory
	PO3	<b>Design/development of solutions:</b> Observation: Students sometimes find it difficult to code Action taken: More attention on programming is given in the class along with theory
	PO4	<b>Conduct investigations of complex problems:</b> Observation: Student faced problem in how to investigate the complexity or running and storage needed to run the program Action: various problems were discussed with students to give clarity to the topic
	PO5	<b>Modern tool usage:</b> Observation: Students were confused about which data structure to choose to implement a particular problem Action: Students were divided into groups and different problems were assigned to them to make them understand the coding procedure
	PO12	<b>Life-long learning:</b> Students were not paying enough attention to code to make it according to the coding norms nor according to the steps of algorithm Motivate students to do hand on experiments and project.
	PSO1	The knowledge to analyse and design is used to solve complex engineering problems. Value Added Classes are being conducted using modern tools.
	PSO2	The knowledge of analyzing and designing is applied to understand complex engineering problem Value Added Classes are being conducted using modern tools.
	PSO3	Carefully understanding the algorithm analysis concepts will help student to pursue a advance course in algorithms for higher studies. Value Added Classes are being conducted using modern tools.
		PO1
	PO2	<b>Problem analysis:</b> Observation: Students sometimes find it difficult to code

CO4		Action taken: More attention on programming is given in the class along with theory
	PO3	<b>Design/development of solutions:</b>
		Observation: Students sometimes find it difficult to code
		Action taken: More attention on programming is given in the class along with theory
	PO4	<b>Conduct investigations of complex problems:</b>
		Observation: Student faced problem in how to investigate and develop dynamic programming solution for complex problems
		Action: various problems were discussed with students to give clarity to the topic
	PO5	<b>Modern tool usage:</b>
		Observation: Students were confused about which data structure to choose to solve a particular dynamic problem
		Action: Students were given more hand on experiments and project.
	PO12	<b>Life-long learning:</b>
		Students were not paying enough attention to code to make it according to the coding norms nor according to the steps of algorithm
Motivate students to do hand on experiments and project.		
PSO1	The knowledge of dynamic programming approach is used to solve complex engineering problems.	
	Value Added Classes are being conducted using modern tools.	
PSO2	The knowledge of dynamic programming is applied to understand complex engineering problem	
	Value Added Classes are being conducted using modern tools.	
PSO3	Carefully understanding the dynamic programming concepts will help student to pursue a advance course in algorithms for higher studies.	
	Value Added Classes are being conducted using modern tools.	
CO5	PO1	<b>Engineering knowledge:</b>
		Observation: Some students find it difficult to understand concepts of P and NP problems
		Action taken: Extra classes taken to explain these concepts
	PO2	<b>Problem analysis:</b>
		Observation: Students sometimes find it difficult to analyze the problems in P and NP
		Action taken: Some basic as well as advanced questions based on these topics were given to students
	PO3	<b>Design/development of solutions:</b>
		Observation: As this topic is still under research therefore students were confused about the solution to the problems
		Action: current examples of algorithm were given to students of P and NP problems
	PO4	<b>Conduct investigations of complex problems:</b>
		Observation: As this topic is still under research therefore students were confused about the analysis to the problems
		Action: Problems like Travelling salesman and graph coloring was taken as example to explore the solutions
PO5	<b>Modern tool usage:</b>	
	Observation: Students were not able to categorize problems into np hard and np complete problems	
	Action: Students were divided into team to make them understand this concept and students were given more hand on experiments on TSP	
PO12	<b>Life-long learning:</b>	
	Some students are more interested in marks rather in gaining knowledge.	
	Motivated students to take some of the topics for research purpose or for higher studies.	

PSO1	The knowledge of P and NP approach is used to understand and solve complex engineering problems.
	Value Added Classes are being conducted using modern tools.
PSO2	The knowledge of NP hard existing solution is applied to understand complex engineering problem
	Value Added Classes are being conducted using modern tools.
PSO3	Carefully understanding the P and NP concepts will help student to pursue a advance course in algorithms for higher studies.
	Value Added Classes are being conducted using modern tools.

Subject	<b>Artificial Intelligence (TIT-502)</b>		
CO1	PO1	<b>Engineering knowledge:</b>	
		Observation: Concept of software agents was not cleared Action taken: Extra classes taken to improve the concepts	
	PO2	<b>Problem analysis:</b>	
		Observation: Students sometimes find it difficult to solve the Engineering problems because of lack of practicing in class Action taken: Students are encouraged to ask questions which are solved in the lecture/ tutorial	
	PO3	<b>Design/development of solutions:</b>	
		Observation: Some students find it difficult to solve the engineering problems due to poor past concepts. Action taken:Processes are taught with the help of real tool display in workshop etc.	
	PO4	<b>Conduct investigations of complex problems:</b>	
		Lack of involvement for investigation of the complex problems for few students Motivate student to use new software	
	PO5	<b>Modern tool usage:</b>	
		Students were needed to be counseled to use the Design/Analysis tools. Value Added Classes are being conducted using modern tools.	
	PO6	<b>The Engineer and Society:</b>	
		Lack of applying knowledge to solve issues Practical knowledge is being provided to apply in real problem	
	PSO1	<b>Apply the knowledge of mathematics, science and engineering to solve complex</b>	
		Students were needed knowledge to understand AI agents Extra classes were taken to resolve the issue	
	PSO2	<b>Learn future technologies through acquired foundation skills and knowledge and employ them in business environments and to identify research gaps.</b>	
		Students were needed to be counseled to use the Design/Analysis tools. Value Added Classes are being conducted using modern tools.	
	PSO3	<b>Analyze and recommend the appropriate IT infrastructure required for the implementation of a project.</b>	
		Lack of knowledge about the IT infrastructure for implementing the project Tutorials and extra classes were taken to clarify the doubts of the students	
		PO1	<b>Engineering knowledge:</b>
			Observation: Concept of knowledge representation techniques was not cleared Action taken: Extra classes taken to improve the concepts of AI techniques
PO2		<b>Problem analysis:</b>	
		Observation: Students sometimes find it difficult to solve the Engineering problems because of lack of practicing in class Action taken: Students are encouraged to ask questions which are solved in the lecture/ tutorial	
PO3		<b>Design/development of solutions:</b>	
		Observation: Some students find it difficult to apply the techniques in real engineering problems due to poor past concepts. Action taken:Fabrication Processes are taught with the help of real tool display in workshop etc.	
PO4		<b>Conduct investigations of complex problems:</b>	
		Lack of involvement for investigation of the complex problems for few students	

CO2		Motivate student to use new software
	PO5	<b>Modern tool usage:</b>
		Students were needed to be counseled to use the Design/Analysis tools. Value Added Classes are being conducted using modern tools.
	PSO1	<b>Apply the knowledge of mathematics, science and engineering to solve complex</b>
		Students were needed to be counseled to use the knowledg representation techniques Workshops and special lectures are being conducted.
	PSO2	<b>Learn future technologies through acquired foundation skills and knowledge and employ them in business environments and to identify research gaps.</b>
		Students were needed to be counseled to use the advance technologies so that they can identify research gaps Value Added Classes are being conducted .
	PSO3	<b>Analyze and recommend the appropriate IT infrastructure required for the implementation of a project.</b>
		Lack of capability to analyze the proper tool to implement the project. Proper practical classes were conducted to enhance the capability of the students.
CO3	PO1	<b>Engineering knowledge:</b>
		Observation: Concept of algorithms to slove problems was not cleared Action taken: Extra classes taken to improve the concepts
	PO2	<b>Problem analysis:</b>
		Observation: Students sometimes find it difficult to solve the problems using algorithms because of lack of practicing in class Action taken: Students are encouraged to ask questions which are solved in the lecture/ tutorial
	PO3	<b>Design/development of solutions:</b>
		Observation: Some students find it difficult to formalize the problem due to poor past concepts. Action taken:Concepts are taught with the help of real tool dispay in workshop etc.
	PO4	<b>Conduct investigations of complex problems:</b>
		Lack of involvement for investigation of the complex problems for few students Motivate student to use new software
	PO6	<b>The Engineer and Society:</b>
		Lack of applying knowledge to solve issues in designing the algorithms Practical knowledge is being provided to apply in real problem
	PO12	<b>Life-long learning:</b>
		Some students are more interested in marks rather in gaining knowledge. Motivate students to do hand on experiments and project.
	PSO1	<b>Apply the knowledge of mathematics, science and engineering to solve complex</b>
		Students were needed to be counseled to use the the knowledge and skills of engineering to solve complex problems using algorithms like state space search Value Added Classes are being conducted and also special lectures and workshops were organised.
	PSO2	<b>Learn future technologies through acquired foundation skills and knowledge and employ them in business environments and to identify research gaps.</b>
	Students were needed to be counseled to use the future technologies to implement the project in terms of problems like state space and heuristic. Value Added Classes are being conducted using modern tools.	

	PSO3	<b>Analyze and recommend the appropriate IT infrastructure required for the implementation of a project.</b>
		Students were needed to be counseled to use the Design/Analysis tools. Value Added Classes are being conducted using modern tools.
CO4	PO1	<b>Engineering knowledge:</b>
		Observation: Students were not able to identify the problems. Action taken: Extra classes taken to clarify the concept of problem identification
	PO2	<b>Problem analysis:</b>
		Observation: Students sometimes find it difficult to evaluate the Engineering problems because of lack of practicing in class Action taken: Students are encouraged to ask questions which are solved in the lecture/ tutorial
	PO3	<b>Design/development of solutions:</b>
		Observation: Some students find it difficult to develop the solution using AI algorithms due to poor past concepts. Action taken: Concepts were taught with the help of real tools in practical classes
	PO4	<b>Conduct investigations of complex problems:</b>
		Lack of involvement for investigation of the complex problems for few students due to less knowledge about the algorithms Motivate student to use different algorithms to solve the problem
	PO5	<b>Modern tool usage:</b>
		Students were needed to be counseled to use the Design/Analysis tools. Value Added Classes are being conducted using modern tools.
	PO6	<b>The Engineer and Society:</b>
		Lack of knowledge to evaluate the problem Practical knowledge is being provided to apply in real problem
	PO12	<b>Life-long learning:</b>
		Some students are more interested in marks rather in gaining knowledge. Motivate students to do hand on experiments and project.
PSO1	<b>Apply the knowledge of mathematics, science and engineering to solve complex</b>	
	Students were needed to be counseled to use the the knowledge and skills of engineering to solve complex problems Value Added Classes are being conducted and also special lectures and workshops were organised.	
PSO2	<b>Learn future technologies through acquired foundation skills and knowledge and employ them in business environments and to identify research gaps.</b>	
	Students were needed to be counseled to use the future technologies to implement the project using algorithms like A*,AO*,Hill Climbing etc. More focused on algorithms used for problem evaluation	
PSO3	<b>Analyze and recommend the appropriate IT infrastructure required for the implementation of a project.</b>	
	Students required more knowledge of appropriate model for evaluating the problem Value Added Classes are being conducted using modern tools.	
	PO1	<b>Engineering knowledge:</b>
		Observation: Concept of Basic AI algorithms not clear Action taken: Extra classes taken to improve the concepts of the algorithms.
	PO4	<b>Conduct investigations of complex problems:</b>
		Lack of involvement for investigation of the complex problems for few students Motivate student to use new software

CO5	PO5	<b>Modern tool usage:</b>
		Students were needed to be counseled to use the Design/Analysis tools.
		Value Added Classes are being conducted using modern tools.
	PO6	<b>The Engineer and Society:</b>
		Lack of applying knowledge to solve issues
		Practical knowledge is being provided to apply in real problem
	PSO1	<b>Apply the knowledge of mathematics, science and engineering to solve complex</b>
		Students were needed to be counseled to use the the knowledge and skills of engineering to solve complex problems
		Value Added Classes are being conducted and also special lectures and workshops were organised.
	PSO2	<b>Learn future technologies through acquired foundation skills and knowledge and employ them in business environments and to identify research gaps.</b>
		Students were needed to be counseled to use the future technologies to implement the project
		Value Added Classes and workshops related to the problem were conducted
PSO3	<b>Analyze and recommend the appropriate IT infrastructure required for the implementation of a project.</b>	
	Students were needed to know how to create algorithms to solve complex problems	
	Extra classesd were conducted for the same.	











Subject:	EMFT (TEE-501)	
CO1	PO1	<b>Engineering knowledge:</b>
		Observation: Concept of Basic of vectors quantities not clear
		Action taken: Extra classes taken to improve the cocepts of Basic vectors
	PO2	<b>Problem analysis:</b>
		Observation: Students sometimes find it difficult to solve the Engineering problems because of lack of practicing in class
	Action taken: Students are encouraged to ask questions which are solved in the lecture/ tutorial	
	PO3	<b>Design/development of solutions:</b>
		Observation: Some students find it difficult to solve the engineering problems due to poor past concepts.
	Action taken: Fabrication Processes are taught with the help of real tool dispay in workshop etc.	
	PO4	<b>Conduct investigations of complex problems:</b>
Lack of involvement for investigation of the complex problems for few students		
Motivate the student for more practices		
PO12	<b>Life-long learning:</b>	
	Some students are more interested in marks rather in gaining knowledge.	
	Motivate students to do hand on experiments and project.	
PSO1	Demonstrate to analysis the principles in problem-solving scenarios	
	Students were needed to be counseled to use the Design/Analysis tools.	
	Value Added Classes are being conducted using new problem solving process..	
PSO2	<b>Ability to analyse various approaches, procedures, tradeoffs to real time design problems.</b>	
	Students were needed to be counseled to use the Design/Analysis tools.	
	Value Added Classes are being conducted using real time design problems.	
CO2	PO1	<b>Engineering knowledge:</b>
		Observation: Concept of Basic rules of physics not clear
		Action taken: Extra classes taken to improve the cocepts of physics
	PO2	<b>Problem analysis:</b>
		Observation: Students sometimes find it difficult to solve the Engineering problems because of lack of practicing in class
	Action taken: Students are encouraged to ask questions which are solved in the lecture/ tutorial	
	PO3	<b>Design/development of solutions:</b>
		Observation: Some students find it difficult to solve the engineering problems due to poor past concepts.
	Action taken: Fabrication Processes are taught with the help of real tool dispay in workshop etc.	
	PO4	<b>Conduct investigations of complex problems:</b>
Observation: Lack of involvement for investigation of the complex problems for few students		
Action taken: Motivate student to use new software		
PO6	<b>The engineer and society:</b>	
	Observation: Lack of engineering practices.	
Action taken: Apply reasoning to understand contextual knowledge		
PO9	<b>Individual and team work:</b>	
	Observation: Students were not understand complex problem yourself at home	
Action taken: Motivate the students to group study		
PO12	<b>Life-long learning:</b>	

	PO12	Some students are more interested in marks rather in gaining knowledge. Motivate students to do hand on experiments and project.
	PSO1	<b>Ability to construct Electronic circuits and to Simulate the circuits with software tools:</b> Students were needed to be counseled to use the Design/Analysis tools. Value Added Classes are being conducted using modern tools.
	PSO2	<b>Ability to analyse various Networking and Communication areas:</b> Students were needed to be counseled to use the Design/Analysis tools. Value Added Classes are being conducted using modern tools.
CO3	PO1	<b>Engineering knowledge:</b> Observation: Concept of Basic Electronics not clear Action taken: Extra classes taken to improve the cocepts of Basic Electronis
	PO2	<b>Problem analysis:</b> Observation: Students sometimes find it difficult to solve the Engineering problems because of lack of practicing in class Action taken: Students are encouraged to ask questions which are solved in the lecture/ tutorial
	PO3	<b>Design/development of solutions:</b> Observation: Some students find it difficult to solve the engineering problems due to poor past concepts. Action taken:Fabrication Processes are taught with the help of real tool dispay in workshop etc.
	PO4	<b>Conduct investigations of complex problems:</b> Lack of involvement for investigation of the complex problems for few students Motivate student to use new software
	PO9	<b>Individual and team work:</b> Observation: Students were not understand complex problem yourself at home Action taken: Motivate the students to group study
	PO12	<b>Life-long learning:</b> Some students are more interested in marks rather in gaining knowledge. Motivate students to do hand on experiments and project.
	PSO1	<b>Ability to construct the magnetostatic circuits:</b> Students were needed to be counseled to use the Design/Analysis tools. Value Added Classes are being conducted using modern tools.
	PSO2	<b>Ability to analyse various areas of emft:</b> Students were needed to be counseled to use the Design/Analysis tools. Value Added Classes are being conducted using modern tools.
	PO2	<b>Problem analysis:</b> Observation: Students sometimes find it difficult to solve the Engineering problems because of lack of practicing in class Action taken: Students are encouraged to ask questions which are solved in the lecture/ tutorial
	PO3	<b>Design/development of solutions:</b> Observation: Some students find it difficult to solve the engineering problems due to poor past concepts. Action taken:Fabrication Processes are taught with the help of real tool dispay in workshop etc.
	PO4	<b>Conduct investigations of complex problems:</b> Lack of involvement for investigation of the complex problems for few students Motivate student to use new software
	PO5	<b>Modern tool usage:</b> Students were needed to be counseled to use the Design/Analysis tools. Value Added Classes are being conducted using modern tools.
	PO12	<b>Life-long learning:</b> Some students are more interested in marks rather in gaining knowledge.

	Motivate students to do hand on experiments and project.	
PSO1	<b>Ability to construct Electronic circuits and to Simulate the circuits with software tools:</b>	
	Students were needed to be counseled to use the Design/Analysis tools.	
	Value Added Classes are being conducted using modern tools.	
PSO2	<b>Ability to construct the electromagnetostatic fields:</b>	
	Students were needed to be counseled to use the Design/Analysis tools.	
	Value Added Classes are being conducted using modern tools.	
CO5	PO1	<b>Engineering knowledge:</b>
		Observation: Concept of Basic magnetics not clear
		Action taken: Extra classes taken to improve the cocepts of Magnetics
	PO2	<b>Problem analysis:</b>
		Observation: Students sometimes find it difficult to solve the Engineering problems because of lack of practicing in class
		Action taken: Students are encouraged to ask questions which are solved in the lecture/ tutorial
	PO3	<b>Design/development of solutions:</b>
		Observation: Some students find it difficult to solve the engineering problems due to poor past concepts.
		Action taken:Fabrication Processes are taught with the help of real tool dispay in workshop etc.
	PO4	<b>Conduct investigations of complex problems:</b>
		Lack of involvement for investigation of the complex problems for few students
		Motivate student to use new software
	PO5	<b>Modern tool usage:</b>
		Students were needed to be counseled to use the Design/Analysis tools.
		Value Added Classes are being conducted using modern tools.
	PO12	<b>Life-long learning:</b>
	Some students are more interested in marks rather in gaining knowledge.	
	Motivate students to do hand on experiments and project.	
PSO1	<b>Ability to construct and analysis Transmission line :</b>	
	Students were needed to be counseled to use the Design/Analysis tools.	
	Value Added Classes are being conducted using modern tools.	
PSO2	<b>Ability to analyse various points of transmission lines:</b>	
	Students were needed to be counseled to use the Design/Analysis tools.	
	Value Added Classes are being conducted using modern tools.	

Subject	Construction Materials (BCET-302)	
CO1	PO1	Engineering knowledge:
		Observation: Knowledge of Building materials is not clear
		Action taken: Extra classes taken to improve the understanding of Building materials.
	PO2	Problem analysis:
		Observation: Students sometimes find it difficult to understand the different properties of different materials
		Action taken: Differentiation between different materials is discussed in tutorial classes.
	PO3	Design/development of solutions:
		Observation: Some students are not able to answer the questions in an appropriate manner.
		Action taken: Assignments and tests is being taken on regular basis
	PO4	Conduct investigations of complex problems:
		Observation: Some students find it difficult to analyse as to what they need to write as a answer to particular question
		Action taken: Discussion on assignments and tests is being done on regular basis
	PO5	Modern tool usage:
		Observation: Students were need to practically examine the behaviour of different materials..
		Action taken: Regular experiments is being conducted in lab for better understanding.
	PO12	Life-long learning:
		Observation: Some students are more interested in marks rather in gaining knowledge.
		Action taken: Motivate students to do hand on experiments and project.
	PSO1	The Graduates of this Programme with proficiency in mathematics and physical sciences will excel in the core areas of civil engineering such as structural, environmental, geotechnical, transportation and water resources engineering.
		Students were need to be counseled in core Civil Engineering area.
		Students learning enhanced by other online courses in the relevant area.
PSO2	The graduates will prepare detailed drawings, cost estimates, reports, walk through views, interact with clients, manage workers, work in a team and executes construction works.	
	Students were need to be counseled in core Civil Engineering area.	
	Students learning enhanced by other online courses in the relevant area.	
PSO3	The graduates will utilize principles, methods, software's and codes of practices	
	Students were need to be counseled in core Civil Engineering area.	
	Students learning enhanced by other online courses in the relevant area.	

CO2

	Observation: Some students are not able to answer the questions in an appropriate manner.
	Action taken: Assignments and tests is being taken on regular basis
PO4	Conduct investigations of complex problems:
	Observation: Some students find it difficult to analyse as to what they need to write as a answer to particular question
	Action taken:Discussion on assignments and tests is being done on regular basis
PO5	Modern tool usage:
	Observation: Students were need to practically examine the behaviour of different materials..
	Action taken: Regular experiments is being conducted in lab for better understanding.
PO12	Life-long learning:
	Observation: Some students are more interested in marks rather in gaining knowledge.
	Action taken: Motivate students to do hand on experiments and project.
PSO1	The Graduates of this Programme with proficiency in mathematics and physical sciences will excel in the core areas of civil engineering such as structural, environmental, geotechnical, transportation and water resources engineering.
	Students were need to be counseled in core Civil Engineering area.
	Students learning enhanced by other online courses in the relevant area.
PSO2	The graduates will prepare detailed drawings, cost estimates, reports, walk through views, interact with clients, manage workers, work in a team and executes construction works.
	Students were need to be counseled in core Civil Engineering area.
	Students learning enhanced by other online courses in the relevant area.
PSO3	The graduates will utilize principles, methods, software's and codes of practices to excel in the areas of planning, analysis and designs related to Civil Engineering systems.
	Students were need to be counseled in core Civil Engineering area.
	Students learning enhanced by other online courses in the relevant area.
PO1	Engineering knowledge:
	Observation: Knowledge of Building materials is not clear
	Action taken: Extra classes taken to improve the understanding of Building materials.
PO2	Problem analysis:
	Observation: Students sometimes find it difficult to understand the different properties of different materials
	Action taken: Differentiation between different materials is discussed in tutorial classes.
PO3	Design/development of solutions:
	Observation: Some students are not able to answer the questions in an appropriate manner.
	Action taken: Assignments and tests is being taken on regular basis
PO4	Conduct investigations of complex problems:
	Observation: Some students find it difficult to analyse as to what they need to write as a answer to particular question
	Action taken:Discussion on assignments and tests is being done on regular basis
PO5	Modern tool usage:
	Observation: Students were need to practically examine the behaviour of different materials..

CO3

	Action taken: Regular experiments is being conducted in lab for better understanding.
PO12	Life-long learning:
	Observation: Some students are more interested in marks rather in gaining knowledge.
	Action taken: Motivate students to do hand on experiments and project.
PSO1	The Graduates of this Programme with proficiency in mathematics and physical sciences will excel in the core areas of civil engineering such as structural, environmental, geotechnical, transportation and water resources engineering.
	Students were need to be counseled in core Civil Engineering area.
	Students learning enhanced by other online courses in the relevant area.
PSO2	The graduates will prepare detailed drawings, cost estimates, reports, walk through views, interact with clients, manage workers, work in a team and executes construction works.
	Students were need to be counseled in core Civil Engineering area.
	Students learning enhanced by other online courses in the relevant area.
PSO3	The graduates will utilize principles, methods, software's and codes of practices to excel in the areas of planning, analysis and designs related to Civil Engineering systems.
	Students were need to be counseled in core Civil Engineering area.
	Students learning enhanced by other online courses in the relevant area.

CO4

PO1	Engineering knowledge:
	Observation: Knowledge of Building materials is not clear
	Action taken: Extra classes taken to improve the understanding of Building materials.
PO2	Problem analysis:
	Observation: Students sometimes find it difficult to understand the different properties of different materials
	Action taken: Differentiation between different materials is discussed in tutorial classes.
PO3	Design/development of solutions:
	Observation: Some students are not able to answer the questions in an appropriate manner.
	Action taken: Assignments and tests is being taken on regular basis
PO4	Conduct investigations of complex problems:
	Observation: Some students find it difficult to analyse as to what they need to write as a answer to particular question
	Action taken: Discussion on assignments and tests is being done on regular basis
PO5	Modern tool usage:
	Observation: Students were need to practically examine the behaviour of different materials..
	Action taken: Regular experiments is being conducted in lab for better understanding.
PO12	Life-long learning:
	Observation: Some students are more interested in marks rather in gaining knowledge.
	Action taken: Motivate students to do hand on experiments and project.
PSO1	The Graduates of this Programme with proficiency in mathematics and physical sciences will excel in the core areas of civil engineering such as structural, environmental, geotechnical, transportation and water resources engineering.
	Students were need to be counseled in core Civil Engineering area.
	Students learning enhanced by other online courses in the relevant area.

	PSO2	The graduates will prepare detailed drawings, cost estimates, reports, walk through views, interact with clients, manage workers, work in a team and executes construction works.	
		Students were need to be counseled in core Civil Engineering area.	
		Students learning enhanced by other online courses in the relevant area.	
	PSO3	The graduates will utilize principles, methods, software's and codes of practices to excel in the areas of planning, analysis and designs related to Civil Engineering systems.	
		Students were need to be counseled in core Civil Engineering area.	
		Students learning enhanced by other online courses in the relevant area.	
CO5	PO1	Engineering knowledge:	
		Observation: Knowledge of Building materials is not clear	
		Action taken: Extra classes taken to improve the understanding of Building materials.	
	PO2	Problem analysis:	
		Observation: Students sometimes find it difficult to understand the different properties of different materials	
		Action taken: Differentiation between different materials is discussed in tutorial classes.	
	PO3	Design/development of solutions:	
		Observation: Some students are not able to answer the questions in an appropriate manner.	
		Action taken: Assignments and tests is being taken on regular basis	
	PO4	Conduct investigations of complex problems:	
		Observation: Some students find it difficult to analyse as to what they need to write as a answer to particular question	
		Action taken: Discussion on assignments and tests is being done on regular basis	
	PO5	Modern tool usage:	
		Observation: Students were need to practically examine the behaviour of different materials..	
		Action taken: Regular experiments is being conducted in lab for better understanding.	
	PO12	Life-long learning:	
		Observation: Some students are more interested in marks rather in gaining knowledge.	
		Action taken: Motivate students to do hand on experiments and project.	
		PSO1	The Graduates of this Programme with proficiency in mathematics and physical sciences will excel in the core areas of civil engineering such as structural, environmental, geotechnical, transportation and water resources engineering.
			Students were need to be counseled in core Civil Engineering area.
			Students learning enhanced by other online courses in the relevant area.
	PSO2	The graduates will prepare detailed drawings, cost estimates, reports, walk through views, interact with clients, manage workers, work in a team and executes construction works.	
		Students were need to be counseled in core Civil Engineering area.	
		Students learning enhanced by other online courses in the relevant area.	
	PSO3	The graduates will utilize principles, methods, software's and codes of practices to excel in the areas of planning, analysis and designs related to Civil Engineering systems.	
		Students were need to be counseled in core Civil Engineering area.	
		Students learning enhanced by other online courses in the relevant area.	

Subject	Machine Design -1	
CO1	PO1	<b>Engineering knowledge:</b>
		<b>Observation:</b> 1. Some students may not have studied the different standards in design 2. Students do not understand coding of standards
		<b>Action taken:</b> 1. Standardization was discussed again with more practical examples. 2. Took an extra class to discuss.
	PO2	<b>Problem analysis:</b>
		<b>Observation:</b> 1. Some students may not have understood the coding and calculations in standardization
		<b>Action taken:</b> 1. Took an extra class to discuss.
	PO3	<b>Design/development of solutions:</b>
		<b>Observation:</b> Some students find it difficult to solve the engineering problems due to poor past concepts of strength of material
		<b>Action taken:</b> Extra classes were organized
	PO4	<b>Conduct investigations of complex problems:</b>
		<b>Observation:</b> Lack of involvement for investigation of the complex problems for few students
		<b>Action taken:</b> Motivate student and organized extra classes.
PO5	<b>Modern tool usage:</b>	
	<b>Observation:</b> Students were needed to be counseled to use the Design/Analysis tools.	
	<b>Action taken:</b> Value Added Classes are being conducted using modern tools.	
PO6	<b>The engineer and society:</b>	
	<b>Observation:</b> Students were needed to do work more exclusively for societal needs.	
	<b>Action taken:</b> Live projects and examples were discussed in the classroom.	
PO11	<b>Project management and finance:</b>	
	<b>Observation:</b> 1. Some students may not have studied project management part 2. Students do not understand financial aspects	
	<b>Action taken:</b> 1. Shared lectures on project management. 2. Took an extra class to discuss financial aspects.	
	<b>Life-long learning:</b>	
PO12	<b>Observation:</b> 1. Some students may not have studied the subject as life long learning. 2. Some Students were not able to develop the concepts of stress- strain.	
	<b>Action taken:</b> 1. Shared lectures on stress analysis. 2. Took an extra class to discuss concepts of load and stress.	
	<b>Students have acquired ability to design, implement and elevate the computer based system like CNC machines, design of power plants, refrigeration air conditioning system and other material technology.</b>	
PSO1	<b>Observation:</b> 1. Some students may not have studied the course in continuation therefore due to absentism they were not able to design the component of practical use.	
	<b>Action taken:</b> 1. Shared the notes. 2. Took an extra class to discuss the concepts again	
	<b>The students have acquired ability to understand the scope of research work in major streams such as production engineering, thermal engineering and design of machine.</b>	
PSO4	<b>Observation:</b> 1. Some students were not able to develop the concept of research.	
	<b>Action taken:</b> 1. Shared the notes. 2. Took an extra class to discuss the concepts again	
	<b>Engineering knowledge:</b>	
	PO1	<b>Observation:</b> 1. Some students may not have studied the shaft design 2. Students do not understand keys and couplings
		<b>Action taken:</b> 1. shaft keys and couplings was discussed again with more practical examples.

CO2	PO2	<b>Problem analysis:</b>
		<b>Observation:</b> 1. Some students may not have studied the shaft design 2. Students do not understand keys and couplings
	PO3	<b>Design/development of solutions:</b>
		Observation: Some students find it difficult to solve the engineering problems due to poor past concepts of strength of material
		Action taken: Extra classes were organized
	PO4	<b>Conduct investigations of complex problems:</b>
		Observation: Lack of involvement for investigation of the complex problems for few students
		Action taken: Motivate student and organized extra classes.
	PO5	<b>Modern tool usage:</b>
		Observation: Students were needed to be counseled to use the Design/Analysis tools.
		Action taken: Value Added Classes are being conducted using modern tools.
	PO6	<b>The engineer and society:</b>
	Observation: Students were needed to do work more exclusively for societal needs.	
	Action taken: Live projects and examples were discussed in the classroom.	
	<b>Action taken:</b> 1. shaft keys and couplings was discussed again with more practical examples.	
PO11	<b>Project management and finance:</b>	
	<b>Observation:</b> 1. Some students may not have studied project management part 2. Students do not understand financial aspects	
	<b>Action taken:</b> 1. Solved lectures on project management. 2. Took an extra class to discuss financial aspects.	
PO12	<b>Life-long learning:</b>	
	<b>Observation:</b> 1. Some students may not have studied the subject as life long learning. 2. Some Students were not able to develop the concepts of stress- strain.	
	<b>Action taken:</b> 1. Solved lectures on stress analysis. 2. Took an extra class to discuss concepts of load and stress.	
PSO1	<b>Students have acquired ability to design, implement and evaluate the computer based system like CNC machines, design of power plants, refrigeration air conditioning system and other material technology.</b>	
	<b>If you observe that the attainment of CO1 to PSO1 is less then observe the possible reasons for that and write some remedial actions to improve the attainment</b>	
	<b>Observation:</b> 1. Some students may not have studied the course in continuation therefore due to absentism they were not able to design the component of practical use.	
	<b>Action taken:</b> 1. Solved the notes. 2. Took an extra class to discuss the concepts again	
PSO4	<b>The students have acquired ability to understand the scope of research work in major streams such as production engineering, thermal engineering and design of machine.</b>	
	<b>If you observe that the attainment of CO1 to PSO4 is less then observe the possible reasons for that and write some remedial actions to improve the attainment</b>	
	<b>Observation:</b> 1. Some students were not able to develop the concept of research.	
	<b>Action taken:</b> 1. Solved the notes. 2. Took an extra class to discuss the concepts again	
PO1	<b>Engineering knowledge:</b>	
	<b>If you observe that the attainment of CO1 to PO1 is less then observe the possible reasons for that and write some remedial actions to improve the attainment</b>	
	<b>Observation:</b> 1. Some students may not have studied the basic machine elements	
	<b>Action taken:</b> 1. Introduction to basic machine elements under various loading was discussed again with more practical examples.	
PO2	<b>Problem analysis:</b>	
	<b>If you observe that the attainment of CO1 to PO2 is less then observe the possible reasons for that and write some remedial actions to improve the attainment</b>	
	<b>Observation:</b> 1. Some students may not have studied the basic machine elements	

CO3		<b>Action taken:</b> 1.Introduction to basic machine elements under various loading was discussed again with more practical examples.
	PO3	<b>Design/development of solutions:</b> Observation: Some students find it difficult to solve the engineering problems due to poor past concepts of strength of material Action taken: Extra classes were organized
	PO4	<b>Conduct investigations of complex problems:</b> Observation: Lack of involvement for investigation of the complex problems for few students Action taken: Motivate student and organized extra classes.
	PO5	<b>Modern tool usage:</b> Observation: Students were needed to be counseled to use the Design/Analysis tools. Action taken: Value Added Classes are being conducted using modern tools.
	PO6	<b>The engineer and society:</b> Observation: Students were needed to do work more exclusively for societal needs. Action taken: Live projects and examples were discussed in the classroom. <b>Action taken:</b> 1. shaft keys and couplings was discussed again with more practical examples.
	PO11	<b>Project management and finance:</b> <b>Observation:</b> 1. Some students may not have studied project management part 2. Students do not understand financial aspects <b>Action taken:</b> 1. Shared lectures on project management. 2. Took an extra class to discuss financial aspects.
	PO12	<b>Life-long learning:</b> <b>Observation:</b> 1. Some students may not have studied the subject as life long learning. 2. Some Students were not able to develop the concepts of stress- strain. <b>Action taken:</b> 1. Shared lectures on stress analysis. 2. Took an extra class to discuss concepts of load and stress.
	PSO1	<b>Students have acquired ability to design, implement and elevate the computer based system like CNC machines, design of power plants, refrigeration air conditioning system and other material technology.</b> <b>Observation:</b> 1. Some students may not have studied the course in continuation therefore due to absentism they were not able to design the component of practical use. <b>Action taken:</b> 1. Shared the notes. 2. Took an extra class to discuss the concepts again
	PSO4	<b>The students have acquired ability to understand the scope of research work in major streams such as production engineering, thermal engineering and design of machine.</b> <b>Observation:</b> 1. Some students were not able to develop the concept of research. <b>Action taken:</b> 1. Shared the notes. 2. Took an extra class to discuss the concepts again
	PO1	<b>Engineering knowledge:</b> <b>Observation:</b> 1. Some students may not have studied the power screw <b>Action taken:</b> 1. power screw was discussed again with more practical examples.
	PO2	<b>Problem analysis:</b> <b>Observation:</b> 1. Some students may not have studied the power screw <b>Action taken:</b> 1. power screw was discussed again with more practical examples.
	PO3	<b>Design/development of solutions:</b> Observation: Some students find it difficult to solve the engineering problems due to poor past concepts of strength of material Action taken: Extra classes were organized
	PO4	<b>Conduct investigations of complex problems:</b> Observation: Lack of involvement for investigation of the complex problems for few students Action taken: Motivate student and organized extra classes.
PO5	<b>Modern tool usage:</b> Observation: Students were needed to be counseled to use the Design/Analysis tools. Action taken: Value Added Classes are being conducted using modern tools.	
	<b>The engineer and society:</b>	

CO4	PO6	<p>Observation: Students were needed to do work more exclusively for societal needs.</p> <p>Action taken: Live projects and examples were discussed in the classroom.</p> <p><b>Action taken:</b> 1. shaft keys and couplings was discussed again with more practical examples.</p>
	PO11	<p><b>Project management and finance:</b></p> <p><b>Observation:</b> 1. Some students may not have studied project management part 2. Students do not understand financial aspects</p> <p><b>Action taken:</b> 1. Scheduled lectures on project management. 2. Took an extra class to discuss financial aspects.</p>
	PO12	<p><b>Life-long learning:</b></p> <p><b>Observation:</b> 1. Some students may not have studied the subject as life long learning. 2. Some Students were not able to develop the concepts of stress- strain.</p> <p><b>Action taken:</b> 1. Scheduled lectures on stress analysis. 2. Took an extra class to discuss concepts of load and stress.</p>
	PSO1	<p><b>Students have acquired ability to design, implement and evaluate the computer based system like CNC machines, design of power plants, refrigeration air conditioning system and other material technology.</b></p> <p><b>Observation:</b> 1. Some students may not have studied the course in continuation therefore due to absenteeism they were not able to design the component of practical use.</p> <p><b>Action taken:</b> 1. Scheduled the notes. 2. Took an extra class to discuss the concepts again</p>
	PSO4	<p><b>The students have acquired ability to understand the scope of research work in major streams such as production engineering, thermal engineering and design of machine.</b></p> <p><b>Observation:</b> 1. Some students were not able to develop the concept of research.</p> <p><b>Action taken:</b> 1. Scheduled the notes. 2. Took an extra class to discuss the concepts again</p>
CO5	PO1	<p><b>Engineering knowledge:</b></p> <p><b>Observation:</b> 1. Some students may not have studied the screw and welded joints. 2. Students were weak in static and fluctuating load concept</p> <p><b>Action taken:</b> 1. screw and welded joint were discussed with more practical examples. 2. Students were given some special lectures on static and fluctuating load.</p>
	PO2	<p><b>Problem analysis:</b></p> <p><b>Observation:</b> 1. Some students may not have studied the screw and welded joints. 2. Students were weak in static and fluctuating load concept</p> <p><b>Action taken:</b> 1. screw and welded joint were discussed with more practical examples. 2. Students were given some special lectures on static and fluctuating load.</p>
	PO3	<p><b>Design/development of solutions:</b></p> <p>Observation: Some students find it difficult to solve the engineering problems due to poor past concepts of strength of material</p> <p>Action taken: Extra classes were organized</p>
	PO4	<p><b>Conduct investigations of complex problems:</b></p> <p>Observation: Lack of involvement for investigation of the complex problems for few students</p> <p>Action taken: Motivate student and organized extra classes.</p>
	PO5	<p><b>Modern tool usage:</b></p> <p>Observation: Students were needed to be counseled to use the Design/Analysis tools.</p> <p>Action taken: Value Added Classes are being conducted using modern tools.</p>
	PO6	<p><b>The engineer and society:</b></p> <p>Observation: Students were needed to do work more exclusively for societal needs.</p> <p>Action taken: Live projects and examples were discussed in the classroom.</p> <p><b>Action taken:</b> 1. shaft keys and couplings was discussed again with more practical examples.</p>
	PO11	<p><b>Project management and finance:</b></p> <p><b>Observation:</b> 1. Some students may not have studied project management part 2. Students do not understand financial aspects</p> <p><b>Action taken:</b> 1. Scheduled lectures on project management. 2. Took an extra class to discuss financial aspects.</p>
		<p><b>Life-long learning:</b></p>

PO12	<p><b>Observation:</b> 1. Some students may not have studied the subject as life long learning. 2. Some Students were not able to develop the concepts of stress- strain.</p> <p><b>Action taken:</b> 1. Shared lectures on stress analysis. 2. Took an extra class to discuss concepts of load and stress.</p>
PSO1	<p><b>Students have acquired ability to design, implement and elevate the computer based system like CNC machines, design of power plants, refrigeration air conditioning system and other material technology.</b></p> <p><b>Observation:</b> 1. Some students may not have studied the course in continuation therefore due to absentism they were not able to design the component of practical use.</p> <p><b>Action taken:</b> 1. Shared the notes. 2. Took an extra class to discuss the concepts again</p>
PSO4	<p><b>The students have acquired ability to understand the scope of research work in major streams such as production engineering, thermal engineering and design of machine.</b></p> <p><b>Observation:</b> 1. Some students were not able to develop the concept of research.</p> <p><b>Action taken:</b> 1. Shared the notes. 2. Took an extra class to discuss the concepts again</p>