



**LOKNETE HON.HANMANTRAO PATIL CHARITABLE TRUST'S
ADARSH INSTITUTE OF TECHNOLOGY AND RESEARCH CENTRE,VITA**

(NAAC Accredited Institute)

A/P: Khambale(Bha) Near Karve MIDC, Vita **Tal:** Khanapur **Dist:** Sangli.415311

Phone & Fax: (02347) 229021 **Email:** aitrc@agiv.edu.in **Web :** www.aitrcvita.edu.in

Hon.Adv.Sadashivrao H Patil

Ex.MLA. Founder

Hon.Adv.Vaibhav S Patil

President



**2.6.1: Programme Outcomes (POs) and
Course Outcomes (COs) for all
Programmes offered by the institution
are stated and displayed on website**



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Hon.Adv.Sadashivrao H Patil

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Hon.Adv.Vaibhav S Patil

President



Department of Electronics & Telecommunication Engineering



Loknete Hon. Hanmantrao Patil Charitable Trust,s

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Department of Electronics & Telecommunication Engineering

CO's and PO's with mapping



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Sr. No.	Course Code	Course Name	Semester
1	BTBS301	Engineering Mathematics – III	ODD
2	BTETC302	Electronic Devices & Circuits	
3	BTETC303	Digital Electronics	
4	BTES304	Electrical Machines and Instruments	
5	BTEXC501	Electromagnetic Field Theory	
6	BTEXC502	Control System Engineering	
7	BTETC503	Computer Architecture	
8	BTEXC504	Digital Signal Processing	
9	BTEXC505	Microcontroller and its Applications	
10	BTEXPE506D	Introduction to MEMS	
11	BTETC701	Digital Communication	
12	BTETPE702	Fiber Optic Communication	
13	BTETPE703	Data Compression & Encryption	
14	BTETPE704	Mechatronics	
15	BTHM705	Financial Management	
1	BTETC401	Network Theory	EVEN
2	BTETC402	Signals and Systems	
3	BTHM403	Basic Human Rights	
4	BTBS404	Probability Theory and Random Processes	
5	BTETPE405	(C) Computer Organization and Architecture	
6	BTETC601	Antennas and Wave Propagation	
7	BTETC602	Computer Network & Cloud Computing	
8	BTETC603	Digital Image Processing	
9	BTETPE604C	Power Electronics	
10	BTETOE605A	Digital System Design	
11	BTHM606	Employability & Skill Development	





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COURSE OUTCOMES

Program	Electronics and Telecommunication	Class	SY
Course	Electronic Devices and Circuits	Course Code	BTETC302
Teaching Scheme Hours/ week	3 Hours/Week	Credit	4
Exam Scheme:	CA- 20	MSE- 20	ESE- 60
Prepared by	Mr. A. D. Ghorapade	AY	2021-22
Course Outcomes			
At the end of the course the students should be able to:			
CO1	Comply and verify parameters after exciting devices by any stated method.		
CO2	Implement circuit and test the performance		
CO3	Analyze BJT, JFET and MOSFET for various applications		
CO4	Analyze Feedback amplifiers and oscillators		

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	3										
CO2			3	2								
CO3	2	3										
CO4	2	3										

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low


Subject Teacher


Academic Coordinator


Head



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COURSE OUTCOMES

Program	Electronics and Telecommunication Engineering		Class	SY
Course	Digital Electronics		Course Code	BTETC303
Teaching Scheme Hours/ week	3 Hours /Week		Credit	4
Exam Scheme:	CA-20	MSE-20	ESE- 60	Total -100
Prepared by	Mr. P. B. Yadav		AY	2021-2022
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Use the basic logic gates and various reduction techniques of digital logic circuit in detail.			
CO2	Design combinational and sequential circuits.			
CO3	Design and implement hardware circuit to test performance and application.			
CO4	Understand the architecture and use of VHDL for basic operations and Simulate using simulation software.			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3											
CO2	1	2	3									
CO3		2	3		2							
CO4	2	2		3	2							

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COURSE OUTCOMES

Program	Electronics and Telecommunication Engineering		Class	SY
Course	Electrical Machines and Instruments		Course Code	BTES304
Teaching Scheme Hours/ week	3 Hours/Week		Credit	4
Exam Scheme:	CA- 20	MSE- 20	ESE- 60	Total - 100
Prepared by	Mr.P.A.Khade		AY	2021-22
Course Outcomes				
At the end of the course the students should be able to:				
CO1	The ability to formulate and then analyze the working of any electrical machine using mathematical model under loaded and unloaded conditions			
CO2	The skill to analyze the response of any electrical machine.			
CO3	The ability to troubleshoot the operation of an electrical machine			
CO4	The ability to select a suitable measuring instrument for a given application			
CO5	The ability to estimate and correct deviations in measurements due to the influence of the instrument and due to the accuracy of the instrument			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3		2								
CO2	3	2										
CO3	2		3									
CO4	3		3				2					
CO5	3		3									

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COURSE OUTCOMES

Program	Electronics and Telecommunication Engineering		Class	TY
Course	Electromagnetic Field Theory		Course Code	BTEXC501
Teaching Scheme Hours/ week	3 Hours /Week		Credit	4
Exam Scheme:	CA- 20	MSE- 20	ESE- 60	Total -100
Prepared by	Mr.P.A.Khade		AY	2021-2022
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Learners can be able to explore their knowledge in the area of EM Waves and its analysis.			
CO2	To learn basic coordinate system, significance of divergence, gradient, curl and its applications to EM Waves.			
CO3	To understand the boundary conditions for different materials surfaces			
CO4	To get insight on finding solution for non-regular geometrical bodies using FiniteElement Method, Method of Moments, Finite Difference Time Domain.			
CO5	To get the basics of microwave, transmission lines and antenna parameters.			
CO6	Students get acquainted with different physical laws and theorems and provide basic platform for upcoming communication technologies.			





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Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2										
CO2	2	3										
CO3	3			2								
CO4		3		2								
CO5	3			2								
CO6	3			3								

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MAE

Subject Teacher

B. H. Patil

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Prakash

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COURSE OUTCOMES

Program	Electronics and Telecommunication	Class	T.Y
Course	Control System Engineering	Course Code	BTEXC502
Teaching Scheme Hours/ week	L: 3 T:0 P: -	Credit	3
Exam Scheme:	CA-20 MSE-20	ESE-60	Total -100
Prepared by	Miss. Patil S.	AY	2021-22
Course Outcomes			
At the end of the course the students should be able to:			
CO1	Understand the modeling of linear-time-invariant systems using transfer function and state-space representations.		
CO2	Understand the concept of stability and its assessment for linear-time invariant systems.		
CO3	Design simple feedback controllers.		

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1			3	2								
CO2			3	2								
CO3				2	1							

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COURSE OUTCOMES

Program	Electronics and Telecommunication	Class	TY	
Course	Computer Architecture	Course Code	BTETC503	
Teaching Scheme Hours/ week	3 Hours/Week	Credit	3	
Exam Scheme:	CA- 20	MSE- 20	ESE- 60	Total - 100
Prepared by	Mr. A. D. Ghorapade	AY	2021-22	
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Learn how computers work			
CO2	Know basic principles of compute working			
CO3	Analyze the performance of computers			
CO4	Know how computers are designed and built			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2										
CO2	3	2	3									
CO3	1	2	3									
CO4	3	2	3									

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COURSE OUTCOMES

Program	Electronics & Telecommunication	Class	TY
Course	Digital Signal Processing	Course Code	BTETC502
Teaching Scheme Hours/ week	Lecture: 3 hr/week, Tutorial: 1 hr/week, Practical: 2hr/week	Credit	4
Exam Scheme:	CA-20 MSE-20	ESE-60	Total -100
Prepared by	Dr. A. R. Nichal	AY	2021-22
Course Outcomes			
At the end of the course the students should be able to:			
CO1	To introduce students with transforms for analysis of discrete time signals and systems.		
CO2	To understand the digital signal processing, sampling and aliasing.		
CO3	To use and understand implementation of digital filters.		
CO4	To understand concept of sampling rate conversion and DSP processor architecture.		

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3		2		1							
CO2			3			2	1					
CO3		3	2			1						
CO4		3	2			1						

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COURSE OUTCOMES

Program	Electronics and Telecommunication		Class	TY
Course	Microcontroller and its Applications		Course Code	BTEXC505
Teaching Scheme Hours/ week	3 Hours/Week		Credit	3
Exam Scheme:	CA- 20	MSE- 20	ESE- 60	Total - 100
Prepared by	Ms. A. M. Kambale		AY	2021-22
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Learner gains ability to apply knowledge of engineering in designing different case studies			
CO2	Students get ability to conduct experiments based on interfacing of devices to or interfacing to real world applications.			
CO3	Students get ability to interface mechanical system to function in multidisciplinary system like in robotics, Automobiles			
CO4	Develop interfacing to real world devices.			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1		2	2	3							
CO2	1		2	3	2							
CO3				2	3							
CO4					3							

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COURSE OUTCOMES

Program	Electronics and Telecommunication	Class	T.Y
Course	Introduction to MEMS	Course Code	BTEXPE506D
Teaching Scheme Hours/ week	L: 3 T: - P: -	Credit	3
Exam Scheme:	CA- 20 MSE- 20	ESE- 60	Total - 100
Prepared by	Mr. P. S. Lengare	AY	2021-22
Course Outcomes			
At the end of the course the students should be able to:			
CO1	Appreciate the underlying working principles of MEMS and NEMS devices.		
CO2	Design and model MEM devices.		

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1						1		2				
CO2		2	3									

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COURSE OUTCOMES

Program	Electronics and Telecommunication		Class	B.Tech
Course	Digital Communication		Course Code	BTETC701
Teaching Scheme Hours/ week	L: 3	T: -	P: -	Credit 3
Exam Scheme:	CA-20	MSE-20	ESE-60	Total -100
Prepared by	Mrs. A. M. Kamble		AY	2021-22
Course Outcomes				
At the end of the course the students should be able to:				
CO1	To understand the building blocks of digital communication system.			
CO2	To prepare mathematical background for communication signal analysis.			
CO3	To understand and analyze the signal flow in a digital communication system			
CO4	To analyze error performance of a digital communication system in presence of noise and other interferences.			
CO5	To understand concept of spread spectrum communication system.			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1			2									
CO2		3	2	1								
CO3				3								
CO4			3	1								
CO5										1		

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COURSE OUTCOMES

Program	Electronics and Telecommunication Engineering		Class	B.Tech
Course	Fiber Optic Communication (Program Elective -5)		Course Code	BTETPE702
Teaching Scheme Hours/ week	3 Hours /Week		Credit	3
Exam Scheme:	CA-20	MSE-20	ESE- 60	Total -100
Prepared by	Mr.P.A.Khade		AY	2021-2022
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Understand the principles fiber-optic communication, the components and the bandwidth advantages			
CO2	Understand the properties of the optical fibers and optical components.			
CO3	Understand operation of lasers, LEDs, and detectors.			
CO4	Analyze system performance of optical communication systems.			
CO5	Design optical networks and understand non-linear effects in optical fibers			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3		2									
CO2	3							1				
CO3	3	2				1						
CO4	2	2										
CO5	3		3	1								

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

PAK

Subject Teacher

P. Khade

Academic Coordinator

Chibhal

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COURSE OUTCOMES

Program	Electronics & Telecommunication	Class	B. Tech
Course	Data Compression and Encryption	Course Code	BTETPE703D
Teaching Scheme Hours/ week	Lecture: 3 hr/week, Tutorial: 1 hr/week, Practical: 2hr/week	Credit	3
Exam Scheme:	CA-20 MSE-20	ESE-60	Total -100
Prepared by	Dr. A. R. Nichal	AY	2022-23
Course Outcomes			
At the end of the course the students should be able to:			
CO1	The student will have the knowledge of Plaintext, cipher text, RSA and other cryptographic algorithm .		
CO2	The student will have the knowledge of Key Distribution, Communication Model, Various models for data compression		

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2			1							
CO2			3		2	1						

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

Original
Subject Teacher

Original
Academic Coordinator

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COURSE OUTCOMES

Program	Electronics and Telecommunication		Class	Final Year B.Tech
Course	Mechatronics		Course Code	BTETPE704E
Teaching Scheme Hours/ week	L: 3	T: - 0	P: - 0	Credit 3
Exam Scheme:	CA- 20	MSE- 20	ESE- 60	Total - 100
Prepared by	Mr. P. S. Lengare		AY	2021-22
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Identification of key elements of mechatronics system and its representation in terms of block diagram.			
CO2	Understanding the concept of signal processing and use of interfacing systems such as ADC, DAC, digital I/O.			
CO3	Interfacing of Sensors, Actuators using appropriate DAQ micro-controller.			
CO4	Time and Frequency domain analysis of system model.			
CO5	PID control implementation on real time systems.			
CO6	Development of PLC ladder programming and implementation of real life system.			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		1		2								
CO2	1				3							
CO3					3							
CO4		2		1								
CO5		1			2							
CO6			3		2							

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

Subject Teacher

Academic Coordinator

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COURSE OUTCOMES

Program	Electronics and Telecommunication	Class	B.Tech
Course	Financial Management	Course Code	BTHM705
Teaching Scheme Hours/ week	L: 2 T: 0 P: 0	Credit	2
Exam Scheme:	CA- 20 MSE- 20	ESE- 60	Total - 100
Prepared by	Mrs. A. M. Kamble	AY	2021-22

Course Outcomes

At the end of the course the students should be able to:

CO1	The students would be able to understand and define basic terminology used in finance and accounts
CO2	The students would be able to prepare & appraise Financial Statements and evaluate a company in the light of different measurement systems.
CO3	The students would be able to analyze the risk and return of alternative sources of financing.
CO4	Estimate cash flows from a project, including operating, net working capital, and capital spending.
CO5	To estimate the required return on projects of differing risk ,to estimate the cash flows from an investment project, calculate the appropriate discount rate, determine the value added from the project, and make a recommendation to accept or reject the project
CO6	To describe and illustrate the important elements in project finance Using financial calculator and Excel in a variety of problems.

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1											3	
CO2								2			1	
CO3		3		2								
CO4				1							2	
CO5				1							3	
CO6		1									2	

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Subject Teacher

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Academic Coordinator

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COURSE OUTCOMES

Program	Electronics and Telecommunication Engineering		Class	SY
Course	Network Theory		Course Code	BTETC401
Teaching Scheme Hours/ week	3 Hours /Week		Credit	4
Exam Scheme:	CA-20	MSE-20	ESE- 60	Total -100
Prepared by	Mr.P.A.Khade		AY	2021-2022
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Apply knowledge of mathematics to solve numerical based on network simplification and it will be used to analyze the same			
CO2	Design passive filters and attenuators theoretically and practically. To apply knowledge for design of active filters as well as digital filters and even extend this to advance adaptive filters.			
CO3	Identify issues related to transmission of signals, analyze different RLC networks.			
CO4	Find technology recognition for the benefit of the society.			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3											
CO2			3									
CO3		3										
CO4						3						

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

PAK
Subject Teacher

[Signature]
Academic Coordinator

[Signature]
Head



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Adarsh Institute of Technology
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COURSE OUTCOMES

Program	Electronics & Telecommunication		Class	SY
Course	Signals & Systems		Course Code	BTETC402
Teaching Scheme Hours/ week	Lecture: 3 hr/week, Tutorial: 1 hr/week, Practical: 2hr/week		Credit	4
Exam Scheme:	CA-20	MSE-20	ESE-60	Total -100
Prepared by	Dr. A. R. Nichal		AY	2022-23
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Understand mathematical description and representation of continuous and discrete time signals and systems.			
CO2	Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system.			
CO3	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms.			
CO4	Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain.			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2			1							
CO2			3		2	1						
CO3		3	2			1						
CO4		3	2			1						

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

Original
Subject Teacher

Original
Academic Coordinator

Original
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COURSE OUTCOMES

Program	Electronics and Telecommunication	Class	SY
Course	Computer Organization and Architecture	Course Code	BTETPE405-C
Teaching Scheme Hours/ week	3 Hours/Week	Credit	4
Exam Scheme:	CA- 20 MSE- 20	ESE- 60	Total - 100
Prepared by	Mr. A. D. Ghorapade	AY	2021-22
Course Outcomes			
At the end of the course the students should be able to:			
CO1	Learn how computers work		
CO2	Know basic principles of compute working		
CO3	Analyze the performance of computers		
CO4	Know how computers are designed and built		

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2										
CO2	3	2	3									
CO3	1	2	3									
CO4	3	2	3									

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low


Subject Teacher


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COURSE OUTCOMES

Program	Electronics and Telecommunication Engineering	Class	TY	
Course	Antennas and Wave Propagation	Course Code	BTETC601	
Teaching Scheme Hours/ week	3 Hours /Week	Credit	4	
Exam Scheme:	CA- 20	MSE- 20	ESE- 60	Total -100
Prepared by	Mr.P.A.Khade	AY	2021-2022	
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Formulate the wave equation and solve it for uniform plane wave.			
CO2	Analyze the given wire antenna and its radiation characteristics.			
CO3	Identify the suitable antenna for a given communication system.			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		3	3	2								
CO2	3			3								
CO3		3		2								

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

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COURSE OUTCOMES

Program	Electronics and Telecommunication	Class	T.Y	
Course	Computer Network & Cloud Computing	Course Code	BTETC602	
Teaching Scheme Hours/ week	L: 3 T:0 P: 0	Credit	3	
Exam Scheme:	CA-20 MSE-20	ESE-60	Total -100	
Prepared by	Mrs. A. M. Kamble	AY	2021-22	
Course Outcomes				
At the end of the course the students should be able to:				
CO1	To master the terminology and concepts of the OSI reference model and the TCP-IP reference model.			
CO2	To master the concepts of protocols, network interfaces, and design/performance issues in local area networks and wide area networks.			
CO3	To be familiar with wireless networking concepts.			
CO4	To be familiar with contemporary issues in networking technologies.			
CO5	To be familiar with network tools and network programming.			
CO6	For a given requirement (small scale) of wide-area networks (WANs), local area networks (LANs) and Wireless LANs (WLANs) design it based on the market available component.			
CO7	For a given problem related TCP/IP protocol developed the network programming.			
CO8	Configure DNS DDNS, TELNET, EMAIL, File Transfer Protocol (FTP), WWW, HTTP, SNMP, Bluetooth, Firewalls using open source available software and tools.			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1					2							
CO2				3	2							
CO3					2							1
CO4					3							
CO5					3							





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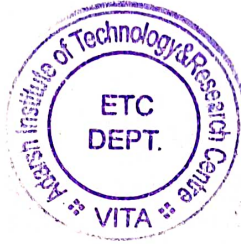
CO6					3								1
CO7		1	3		2								
CO8					3								

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low


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COURSE OUTCOMES

Program	Electronics and Telecommunication		Class	TY
Course	Power Electronics		Course Code	BTETPE604C
Teaching Scheme Hours/ week	3 Hours/Week		Credit	3
Exam Scheme:	CA- 20	MSE- 20	ESE- 60	Total - 100
Prepared by	Mr. A. D. Ghorapade		AY	2021-22
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Build and test circuits using power devices such as SCR			
CO2	Analyze and design controlled rectifier, DC to DC converters, DC to AC inverters,			
CO3	Learn how to analyze these inverters and some basic applications			
CO4	Design SMPS			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	3									
CO2	1	3	3									
CO3	2	3	1									
CO4	1	1	3									

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Subject Teacher


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COURSE OUTCOMES

Program	Electronics and Telecommunication Engineering		Class	TY
Course	Digital System Design		Course Code	BTETOE60 5A
Teaching Scheme Hours/ week	3 Hours /Week		Credit	4
Exam Scheme:	CA-20	MSE-20	ESE- 60	Total -100
Prepared by	Mr. P. B. Yadav		AY	2021-2022
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Design and analyze combinational logic circuits			
CO2	Design & analyze modular combinational circuits with MUX/DEMUX, Decoder, Encoder			
CO3	Design & analyze synchronous sequential logic circuits			
CO4	Use HDL & appropriate EDA tools for digital logic design and simulation.			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		2	3									
CO2		2	3	2	2							
CO3		2	3	2	2							
CO4		2		2	3							

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

Subject Teacher

Academic Coordinator

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COURSE OUTCOMES

Program	Electronics and Telecommunication	Class	T.Y
Course	Employability and Skills Development	Course Code	BTHM606
Teaching Scheme Hours/ week	L: 2 T: - P: -	Credit	2
Exam Scheme:	CA- 20 MSE- 20	ESE- 60	Total - 100
Prepared by	Mr. P. S. Lengare	AY	2021-22
Course Outcomes			
At the end of the course the students should be able to:			
CO1	Have skills and preparedness for aptitude tests.		
CO2	Be equipped with essential communication skills (writing, verbal and non-verbal)		
CO3	Master the presentation skill and be ready for facing interviews.		
CO4	Build team and lead it for problem solving.		

Mapping of Course Outcomes with Program Outcomes

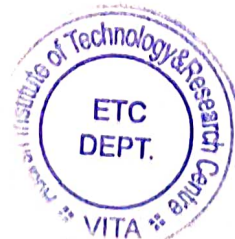
Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		2	2									
CO2										3		
CO3			2							2		1
CO4		1		2					3			

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Subject Teacher


Academic Coordinator


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COURSE OUTCOMES

Program	Electronics and Telecommunication	Class	B.Tech
Course	Introduction of Internet of Things	Course Code	
Teaching Scheme Hours/ week	L: 3 T:- P: -	Credit	3
Exam Scheme:	CA-20	MSE-20	ESE-60 Total -100
Prepared by	Mr. P. S. Lengare	AY	2021-22
Course Outcomes			
At the end of the course the students should be able to:			
CO1	Collect analyze telemetry from connected sensors, devices & equipment for real-time tracking, monitoring, management & remote control .		
CO2	Understand the concept of IOT.		
CO3	Able to realize the revolution of interest in mobile devices, cloud & sensor network.		
CO4	An understanding of professional, ethical, legal, security & social issues & responsibilities.		

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		2			3							1
CO2				2								
CO3			2		3							
CO4						3	2	1				

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low


Subject Teacher


Academic Coordinator


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Hon.Adv.Sadashivrao H Patil

Ex.MLA. Founder

Hon.Adv.Vaibhav S Patil

President



Department of Civil Engineering



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Department of Civil Engineering

CO's and PO's with mapping



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PROGRAM OUTCOMES

Program: Department of Civil Engineering

PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Academic Coordinator

Head of Department
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Principal





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PROGRAM SPECIFIC OUTCOMES

Program: Department of Civil Engineering

PSO1	Make the students employable in engineering industries.
PSO2	Motivate the students for higher studies and research.
PSO3	Motivate the students for various competitive examinations


Academic Coordinator


Head of Department
CIVIL DEPARTMENT
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Principal





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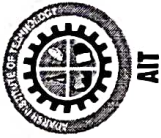
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AY: 2021-22

Sr. No.	Course Code	Course Name	Semester
1	BTBS301	Mathematics-III	ODD
2	BTCVES302	Mechanics of Solids	
3	BTCVC304	Hydraulic - I	
4	BTCVC305	Surveying	
5	BTCVC303	Building Construction and Drawing	
6	BTCVC 501	Design of Steel Structure	
7	BTCVC 502	Structural Mechanics-II	
8	BTCVC 503	Soil Mechanics	
9	BTCVC 504	Environmental Engineering	
10	BTCVC 505	Transportation Engineering	
11	BTCVE506A	Materials, Testing & Evaluation	
12	BTCVC701	Design of Concrete Structures II	
13	BTCVC702	Infrastructure Engineering	
14	BTCVC703	Water Resources Engineering	
15	BTCVC704	Professional Practices	
16	BTCVE705A	Construction Techniques	
17	BTCVOE706E	Town and Urban Planning	
1	BTCVC401	Building Planning and Drawing	EVEN
2	BTCVC402	Environmental Engineering	
3	BTCVC403	Structural Mechanics - I	
4	BTCVC404	Water Resources Engineering	
5	BTCVC405	Hydraulics -II	
6	BTCVC406	Engineering Geology	
7	BTCVC601	Design of Concrete Structures I	
8	BTCVC602	Foundation Engineering	
9	BTCVC603	Concrete Technology	
10	BTCVC604	Project Management	
11	BTCVE605A	Waste Water Treatment (Elect.3)	
12	BTCVC606	Building Planning and Design	
13	BTCVSS801D	Maintenance and Repair of Concrete Structures	
14	BTCESS802E	Soil Structure Interaction	




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Mapping of POs and Course

Sr. No.	Course Code	Course Name	Sem	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	
1	BTBS301	Mathematics-III	ODD													
2	BTCVES302	Mechanics of Solids														
3	BTCVC304	Hydraulic - I														
4	BTCVC305	Surveying			✓											
5	BTCVC303	Building Construction and Drawing						✓								
6	BTCVC 501	Design of Steel Structure														
7	BTCVC 502	Structural Mechanics-II														
8	BTCVC 503	Soil Mechanics														
9	BTCVC 504	Environmental Engineering														
10	BTCVC 505	Transportation Engineering														
11	BTCVE506A	Materials, Testing & Evaluation														
12	BTCVC701	Design of Concrete Structures II														
13	BTCVC702	Infrastructure Engineering			✓					✓						
14	BTCVC703	Water Resources Engineering														
15	BTCVC704	Professional Practices														



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16	BTCVE705A	Construction Techniques																	
17	BTCVOE706E	Town and Urban Planning																	
1	BTCVC401	Building Planning and Drawing																	
2	BTCVC402	Environmental Engineering																	
3	BTCVC403	Structural Mechanics - I																	
4	BTCVC404	Water Resources Engineering																	
5	BTCVC405	Hydraulics -II																	
6	BTCVC406	Engineering Geology																	
7	BTCVC601	Design of Concrete Structures I																	
8	BTCVC602	Foundation Engineering																	
9	BTCVC603	Concrete Technology																	
10	BTCVC604	Project Management																	
11	BTCVE605A	Waste Water Treatment (Elect.3)																	
12	BTCVC606	Building Planning and Design												✓					
13	BTCVSS801D	Maintenance and Repair of Concrete Structures												✓					
14	BTCESS802E	Soil Structure Interaction																	
			EVEN																



(Signature)

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COURSE OUTCOMES

Program	Civil Engineering	Class	SY	
Course	Surveying	Course Code	BTCVC305	
Teaching Scheme Hours/ week	2 Hr/Week	Credit	3	
Exam Scheme:	CA- 20	MSE- 20	ESE- 60	Total - 100
Prepared by	Mr. C. B. Patil	AY	2021-22	
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Perform measurements in linear/angular methods.			
CO2	Perform plane table surveying in general terrain.			
CO3	Know the basics of leveling and Theodolite survey in elevation and angular measurements.			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2				3	2						
CO2	2				3	2						
CO3	2				3	2						

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low


Subject Teacher


Academic Coordinator


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COURSE OUTCOMES

Program	Civil Engineering		Class	TY
Course	Building Planning and Drawing		Course Code	BTCVC401
Teaching Scheme Hours/ week	2 Hr/Week		Credit	2
Exam Scheme:	CA- 20	MSE- 20	ESE- 60	Total - 100
Prepared by	Mr. C. B. Patil		AY	2021-22
Course Outcomes				
At the end of the course the students should be able to:				
CO1	To plan buildings considering various principles of planning and bye laws of governing body			
CO2	Comprehend various utility requirements in buildings			
CO3	Understand various techniques for good acoustics.			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3			1		1						
CO2	2			1		1						
CO3	2			1		1						

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

Subject Teacher

Academic Coordinator

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COURSE OUTCOMES

Program	Civil Engineering		Class	B.Tech
Course	Infrastructure Engineering		Course Code	BTCVC702
Teaching Scheme Hours/ week	3 Hr/Week		Credit	3
Exam Scheme:	CA- 20	MSE- 20	ESE- 60	Total - 100
Prepared by	Mr. C. B. Patil		AY	2021-22
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Know about the basics and design of various components of railway engineering			
CO2	Understand the types and functions of tracks, junctions and railway stations			
CO3	Know about the aircraft characteristics, planning and components of airport			
CO4	Understand the types and components of docks and harbors			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2				1						
CO2	3	2				1						
CO3	3	2				1						
CO4	3	2				1						

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

Subject Teacher

Academic Coordinator

Head
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CIVIL DEPARTMENT
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& RESEARCH CENTRE VITA





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COURSE OUTCOMES

Program	Civil Engineering		Class	TY
Course	Structural Mechanics-II		Course Code	BTCVC 502
Teaching Scheme Hours/ week	2 Hr/Week		Credit	3
Exam Scheme:	CA- 20	MSE- 20	ESE- 60	Total - 100
Prepared by	Mrs. J.R. Kadam		AY	2021-22
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Have a basic understanding of matrix method of analysis and will be able to analyze the determinant structure.			
CO2	Have a basic understanding of the principles and concepts related to finite difference and finite element methods			
CO3	Have a basic understanding of concept of influence line			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2			3							
CO2	2	2			3							
CO3	2	2			3							

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Subject Teacher


Academic Coordinator


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DEPARTMENT OF CIVIL ENGINEERING
COURSE OUTCOMES

Program	Civil Engineering		Class	B Tech
Course	Design of Concrete Structures-II		Course Code	BTCVC701
Teaching Scheme Hours/ week	2 Hr/Week		Credit	3
Exam Scheme:	CA- 20	MSE- 20	ESE- 60	Total - 100
Prepared by	Mr. P. R. Thorat		AY	2021-22
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Able to identify the behavior, analyze and design of the beam sections subjected to torsion.			
CO2	Able to analyze and design of axially and eccentrically loaded column and construct the interaction diagram for them.			
CO3	Understand various concepts, systems and losses in pre-stressing.			
CO4	Able to analyze and design the rectangular and symmetrical I-section pre-stressed beam/girders.			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	1		2						
CO2	3	2	3	1		2						
CO3	3	2	3	1	3	2						
CO4	3	2	3	1	1	2						

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COURSE OUTCOMES

Program	Civil Engineering	Class	SY
Course	Building Construction & Drawing	Course Code	BTCVC303
Teaching Scheme Hours/ week	2 Hr/Week	Credit	3
Exam Scheme:	CA- 20 MSE- 20	ESE- 60	Total - 100
Prepared by	Mr. P. R. Thorat	AY	2021-22
Course Outcomes			
At the end of the course the students should be able to:			
CO1	Understand types of masonry structures.		
CO2	Comprehend components of building and there purposes.		
CO3	Prepare detailed working drawing for doors windows and Stairs		
CO4	Explain different types of roof coverings and flooring.		

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1		3	2	2					
CO2	2	2	2	2	3	2	1					
CO3	2	2	2	2	3	1	1					
CO4	3	2	2	2	3	1	1					

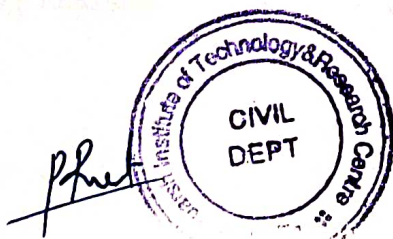
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**DEPARTMENT OF CIVIL ENGINEERING
COURSE OUTCOMES**

Program	Civil Engineering		Class	B Tech
Course	Project Stage - I		Course Code	BTCVP711
Teaching Scheme Hours/ week	6Hr/Week		Credit	3
Exam Scheme:	CA- 00	MSE- 50	ESE- 50	Total - 100
Prepared by	Mr. P. R. Thorat		AY	2021-22
Course Outcomes				
At the end of the course the students should be able to:				
CO1	State the exact title of the project and problem definition			
CO2	Explain the motivation, objectives and scope of the project			
CO3	Review the literature related to the selected topic of the project			
CO4	Design the mechanism, experimental methodology			
CO5	Evaluate the cost considering different materials/ processes in the field of civil engineering.			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1								1		
CO2									1	2	2	
CO3		1				1						
CO4			3	2	2		1		1	1	1	1
CO5	1		1					1			2	1

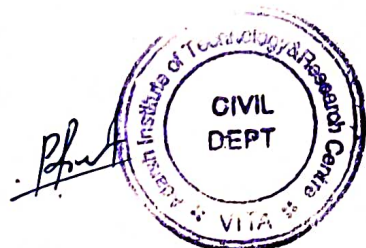
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P.R. Thorat
Subject Teacher

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Academic Coordinator

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DEPARTMENT OF CIVIL ENGINEERING
COURSE OUTCOMES

Program	Civil Engineering	Class	B Tech	
Course	Project Stage - II	Course Code	BTCEP803	
Teaching Scheme Hours/ week	6Hr/Week	Credit	15	
Exam Scheme:	CA- 50	MSE- 00	ESE- 100	Total - 150
Prepared by	Mr. P. R. Thorat	AY	2021-22	
Course Outcomes				
At the end of the course the students should be able to:				
CO1	State the aim and objectives for this stage of the project			
CO2	Construct and conduct the tests on the system/product			
CO3	Analyze the results of the tests.			
CO4	Discuss the findings, draw conclusions, and modify the system/product, if necessary.			

Mapping of Course Outcomes with Program Outcomes

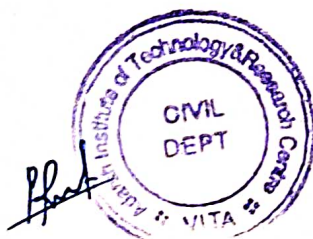
Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1										
CO2			2	2	2	1	1					
CO3		1			1	2		1		1		
CO4			2	1	2	1	2			3		1

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Subject Teacher


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COURSE OUTCOMES


Program	Civil Engineering		Class	SY
Course	Surveying		Course Code	BTCVC305
Teaching Scheme Hours/ week	2 Hr/Week		Credit	3
Exam Scheme:	CA- 20	MSE- 20	ESE- 60	Total - 100
Prepared by	Mr. C. B. Patil		AY	2020-21
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Perform measurements in linear/angular methods.			
CO2	Perform plane table surveying in general terrain.			
CO3	Know the basics of leveling and Theodolite survey in elevation and angular measurements.			


Academic Coordinator


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COURSE OUTCOMES

Program	Civil Engineering	Class	TY
Course	Transportation engineering	Course Code	BTCVC505
Teaching Scheme Hours/ week	2 Hr/Week	Credit	3
Exam Scheme:	CA- 20 MSE- 20	ESE- 60	Total - 100
Prepared by	Mr. P. M. Maske	AY	2020-21
Course Outcomes			
At the end of the course the students should be able to:			
CO1	Comprehend various types of transportation systems and their history of the development.		
CO2	Comprehend to various types of pavements		
CO3	Design the pavements by considering various aspects associated with traffic safety measures.		

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Hon.Adv.Sadashivrao H Patil

Ex.MLA. Founder

Hon.Adv.Vaibhav S Patil

President



General Science Engineering



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Sr. No.	Course Code	Course Name	Semester
1	BTBS102/202	Engineering Chemistry	ODD & Even
2	BTBS102/202	Engineering Physics	ODD & Even
3	BTHM104/204	Communication Skill	ODD & Even
4	BTBS101	Engineering Mathematics-I	ODD
5	BTBS201	Engineering Mathematics-II	EVEN





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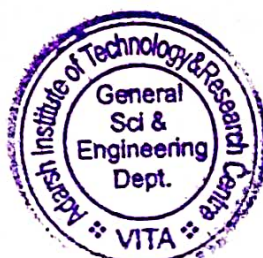
COURSE OUTCOMES

Program	F. Y. B. Tech. (All)		Class	FY
Course	Engineering Chemistry		Course Code	BTBS102/202
Teaching Scheme Hours/Week	3 Hours/Week		Credit	4
Exam Scheme	CA- 20	MSE- 20	ESE- 60	Total - 100
Prepared by	Mr. R. H. Tamboli		AY	2021-22
Course Outcomes				
At the end of the course students should be able to:				
CO1	Demonstrate knowledge of chemistry in technical fields.			
CO2	Bring adaptability to new developments in Engineering Chemistry and to acquire the skills required to become a perfect engineer.			
CO3	Develop the importance of water in industrial and domestic usage.			
CO4	Identify the concepts of Chemistry to lay the ground work for subsequent studies in various engineering fields.			
CO5	Examine a fuel and suggest alternative fuels.			


Subject Teacher


Academic Coordinator


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COURSE OUTCOMES

Program	F. Y. B. Tech. (All)	Class	FY	
Course	Engineering Physics	Course Code	BTBS102/202	
Teaching Scheme Hours/Week	3 Hours/Week	Credit	4	
Exam Scheme	CA- 20	MSE- 20	ESE- 60	Total - 100
Prepared by	Mrs. N. N. Bhosale	AY	2021-22	
Course Outcomes				
At the end of the course students should be able to:				
CO1	Explain & apply the concept of types of Oscillation, Dielectric properties & ultrasonics			
CO2	Explain & compare between Interference & Polarisation of light ,working Principle of Lasers & Fiber optics			
CO3	Interprete,apply &demonstrate principle of motion of charged particles in EF&MF,BAinbridge Mass spectrograph &G M counter			
CO4	Identify Types of crystals & crystal planes using Miller indices,Experemental approach.			

N. N. Bhosale

Subject Teacher

[Signature]

Academic Coordinator

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COURSE OUTCOMES

Program	F. Y. B. Tech. (All)	Class	FY	
Course	Communication Skill	Course Code	BTHM104/204	
Teaching Scheme Hours/Week	3 Hours/Week	Credit	2	
Exam Scheme	CA- 20	MSE- 20	ESE- 60	Total - 100
Prepared by	Mr. C. S. Chougule	AY	2021-22	
Course Outcomes				
At the end of the course students should be able to:				
CO1	Apply speaking and writing skills in professional as well as social situations			
CO2	Overcome Mother Tongue Influence and demonstrate neutral accent while exercising English			
CO3	Apply communication skills for Presentations, Group Discussion and interpersonal interactions.			
CO4	Apply grammar correctly during Speaking and Writing situations especially in context with Presentations, Public Speaking, Report writing and Business Correspondence			

C. S. Chougule
Subject Teacher

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Academic Coordinator

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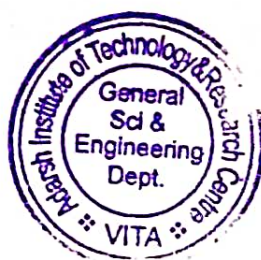
COURSE OUTCOMES

Program	F. Y. B. Tech. (All)		Class	FY
Course	Engineering Mathematics-I		Course Code	BTBS101
Teaching Scheme Hours/Week	3 Hours/Week		Credit	4
Exam Scheme	CA- 20	MSE- 20	ESE- 60	Total - 100
Prepared by	Ms. C. I. Mirade		AY	2021-22
Course Outcomes				
At the end of the course students should be able to:				
CO1	Apply the matrix technique (Linear algebra) to find solutions of system of linear equations arising in many engineering problem			
CO2	Demonstrate the concept partial derivatives and their applications to Maxima/ Minima , series expansion of multi valued functions.			
CO3	Compute Jacobian of functions of several variables and their applications to engineering problems			
CO4	Identify and sketch of curves in various coordinate system.			
CO5	Evaluate multiple integrals and their applications to area and volume.			

Subject Teacher

Academic Coordinator

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COURSE OUTCOMES

Program	F. Y. B. Tech. (All)	Class	FY	
Course	Engineering Mathematics-II	Course Code	BTBS201	
Teaching Scheme Hours/Week	3 Hours/Week	Credit	4	
Exam Scheme	CA- 20	MSE- 20	ESE- 60	Total - 100
Prepared by	Ms. C. I. Mirade	AY	2021-22	
Course Outcomes				
At the end of the course students should be able to:				
CO1	Discuss the need and use of complex variables to find roots ,to separate complex quantities and to establish relation between circular and hyperbolic functions.			
CO2	Solve first and higher order differential equations and apply them as a mathematical modeling in electric and mechanical systems.			
CO3	Determine Fourier series representation of periodic functions over different intervals.			
CO4	Demonstrate the concept of vector differentiation and interpret the physical and geometrical meaning of gradient, divergence & curl in various engineering streams.			
CO5	Apply the principles of vector integration to transform line integral to surface integral, surface to volume integral & vice versa using Green's, Stoke's and Gauss divergence theorems.			


Subject Teacher


Academic Coordinator


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COURSE OUTCOMES

Program	S. Y. B. Tech. (All)		Class	SY
Course	Engineering Mathematics-III		Course Code	BTBS301
Teaching Scheme Hours/Week	3 Hours/Week		Credit	4
Exam Scheme	CA- 20	MSE- 20	ESE- 60	Total - 100
Prepared by	Mr. R.V.Bhosale		AY	2021-22
Course Outcomes				
At the end of the course students should be able to:				
CO1	Apply the Laplace transformation to functions and its properties to obtain new transformed function. Laplace Transform used to solve application to communication system and signal processing			
CO2	To obtain inverse transformation of functions. Inverse laplace transform have different properties that make them useful for analysing linear dynamical system			
CO3	Solve problems related to Fourier transform of function for given range, and application to communication system and signal processing			
CO4	Solve higher order differential equations using appropriate technique for modelling and analysing electrical circuit			
CO5	Obtain interpolating polynomial, numerically differentiate and integrate function. Analyse conformal mapping, transformations and perform counter integration of complex function in study of electrostatic processing.			


Subject Teacher


Academic Coordinator


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Ex.MLA. Founder

Hon.Adv.Vaibhav S Patil

President



Department of Computer Science Engineering



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Department of Computer Science & Engineering

CO's and PO's with mapping



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PROGRAM OUTCOMES

Program: Department of Computer Science and Engineering

PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.


Academic Coordinator


Head of Department


Principal





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PROGRAM SPECIFIC OUTCOMES

Program: Department of Computer Science and Engineering

PSO1	Professional Skills:- The ability to understand, analyze and develop computer programs in the areas related to algorithms, system software, multimedia, web design. Big data analytics, and networking for efficient design of computer-based system of varying complexity.
PSO2	Problem-Solving Skills: - The ability to apply standard practices and strategies in software project development uses open-ended programming environments to deliver a quality product for business success.
PSO3	Successful Career and Entrepreneurship:- The ability to employ modern computer languages, environment, and platforms in creating innovative career paths to be an entrepreneur and a zest for higher studies.

Academic Coordinator

Head of Department

Principal





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Sr. No.	Course Code	Course Name	Semester
1	BTBS301	Engineering Mathematics – III	ODD
2	BTCOC302	Discrete Mathematics	
3	BTCOC303	Data Structures	
4	BTCOC304	Computer Architecture & Organization	
5	BTCOC305	Object Oriented Programming in Java	
6	BTCOS307	Seminar-I	
7	BTCOC501	Database System	
8	BTCOC502	Theory of Computation	
9	BTCOC503	Machine Learning	
10	BTCOE504	Cyber Law	
11	BTCOE505	Ele- IV Business Communication	
12	BTCOC506	Competitive Programming-I	
13	BTCOS509	Seminar	
14	BTCOC701	Software Engineering	
15	BTCOE702	Elective –VIII Distributed System	
16	BTCOE703	Elective IX-Cloud Computing	
17	BTCOE704	Open Elective –X Computer Graphics	
18	BTCOL705	Full Stack Development	
19	BTCOL706	System Administration	
20	BTCOP709	Project phase - I	
21	BTCOC401	Design & Analysis of Algorithm	
22	BTCOL406	Python Programming	
23	BTES405	Digital Logic Design & Microprocessors	
24	BTCOC402	Operating System	
25	BTHM403	Basic human Rights	
26	BTBS404	Probability Theory & Random Processes	
27	BTCOS407	Seminar - II	
28	BTCOC601	Compiler Design	
29	BTCOL606	Competitive Programming-II	
30	BTCOE603	Artificial Intelligence	
31	BTCOC602	Computer Network	
32	BTCOE604	Internet of Things	
33	BTCOE605	National Social Service	
34	BTCOE803	Project - II	
35	BTCOE801	Ele – XI Randomized Algorithm	
36	BTCOE802	Ele – XII Cryptography & Network Security	



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Computer Science & Engineering



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COURSE OUTCOMES

Program	Computer Science and Engineering		Class	S.Y B. Tech
Course	Discrete Mathematical		Course Code	BTCOC302
Teaching Scheme Hours/ week	Lecture: 3 hrs./week Tutorial:1 hrs./week		Credit	4
Exam Scheme:	CA-20M	MSE- 20M	ESE-60 M	Total -100
Prepared by	Mr.D.K.Jadhav		AY	2021-2022
Course Outcomes				
At the end of the course the students should be able to:				
CO1	To introduce the concepts of mathematical logic			
CO2	To introduce the concepts of sets, relations, and functions.			
CO3	To perform the operations associated with Graph and circuits			
CO4	To use Tree Theory for Solving Problems			
CO5	To understand the Algebraic Structure and morphism real time examples to			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	1	1							
CO2	1	3	2	1	2							
CO3	3	1	2	1	1							
CO4	2	2	1	3	2							
CO5	2	1	3	1	2							

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

Subject Teacher

Academic Coordinator

Head of Department
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COURSE OUTCOMES

Program	Computer Science and Engineering		Class	S.Y B. Tech
Course	Object Oriented Programing		Course Code	BTCOC305 (B)
Teaching Scheme Hours/ week	Lecture: 3 hrs./week Tutorial:1 hrs./week		Credit	4
Exam Scheme:	CA-20M	MSE- 20M	ESE-60 M	Total -100
Prepared by	Mr.D.K.Jadhav		AY	2021-2022
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Understand the basics concepts of object-oriented programming JAVA			
CO2	Apply the concept control statements and static Concepts and develop Simple Java Programs.			
CO3	Able to implement the array concepts sing java			
CO4	Developing the Simple Java Programs using inheritance Abstraction and Interfaces.			
CO5	Develop the Exception handling, GUI applications using Applet classes, and Event handling programs.			


Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	1	1							
CO2	2	2	2	1	1							
CO3	3	1	2	1	1							
CO4	2	1	3	3	2							
CO5	2	1	3	1	2							

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low


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COURSE OUTCOMES

Program	Computer Science and Engineering	Class	B. Tech
Course	Cryptography and Network Security	Course Code	BTCOE704
Teaching Scheme Hours/ week	Lecture: 3 hrs./week Tutorial:1 hrs./week	Credit	4
Exam Scheme:	CA-20M MSE- 20M	ESE-60 M	Total -100
Prepared by	Mr.D.K.Jadhav	AY	2021-2022
Course Outcomes			
At the end of the course the students should be able to:			
CO1	Explain the importance and application of Cryptography and classical Cryptography		
CO2	Understand the various Symmetric cryptographic algorithms and modes of operation		
CO3	Understand the basic things of Stream cipher and Hash functions		
CO4	Describe the enhancements of Asymmetric key Ciphers, RSA and key exchange algorithms.		
CO5	Discuss Digital Signature, Web security and Firewalls.		

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	1	1							
CO2	2	2	2	1	2							
CO3	3	1	2	1	1							
CO4	2	2	2	3	2							
CO5	1	1	3	1	2							

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

Subject Teacher

Academic Coordinator

Head

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COURSE OUTCOMES

Program	Computer Science and Engineering		Class	T.Y B. Tech
Course	Design Analysis and Algorithm		Course Code	BTCOC
Teaching Scheme Hours/ week	Lecture: 3 hrs./week Tutorial:1 hrs./week		Credit	4
Exam Scheme:	CA-20M	MSE- 20M	ESE-60 M	Total -100
Prepared by	Mr.D.K.Jadhav		AY	2021-2022
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Students will be able to identify where, when and how enhancements of computer performance can be accomplished.			
CO2	To understand the basic hardware and software issues of computer organization.			
CO3	Identify functional units, bus structure and addressing modes.			
CO4	Identify memory hierarchy and performance			
CO5	Learn the concepts of pipelined processors and interprocessor communication			


Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	1	2							
CO2	2	2	1	2	1							
CO3	2	3	1	1								
CO4	2	3		1								
CO5	3	2		1	1							

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low


Subject Teacher


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COURSE OUTCOMES

Program	Computer Science and Engineering		Class	B. Tech
Course	Computer Graphics		Course Code	BTCOE704
Teaching Scheme Hours/ week	3 hrs		Credit	3
Exam Scheme:	CA-20	MSE-20	ESE-60	Total -100
Prepared by	Mr. S. R. Mali		AY	Odd 2021-22
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Understand the basics of computer graphics, different graphics systems and applications of computer graphics.			
CO2	Discuss various algorithms for scan conversion and filling of basic objects and their comparative analysis.			
CO3	Use of geometric transformations on graphics objects and their application in composite form.			
CO4	Extract scene with different clipping methods and its transformation to graphics display device.			
CO5	Explore projections and visible surface detection techniques for display of 3D scene on 2D screen.			
CO6	Render projected objects to naturalize the scene in 2D view and use of illumination models for this.			

Mapping of Course Outcomes With Program Outcomes

Course Outcomes	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2				3						
CO2		1	1	2	3							
CO3					1	2	3					
CO4			3	2	3			1				
CO5				1	2			3				
CO6			1		2	3	3					

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COURSE OUTCOMES

Program	Computer Science and Engineering		Class	TY
Course	Database System		Course Code	BTCOC501
Teaching Scheme Hours/ week	3 hrs		Credit	4
Exam Scheme:	CA-20	MSE-20	ESE-60	Total -100
Prepared by	Mr. S. R. Mali		AY	Odd 2021-22
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Identify the basic concepts and various data model used in database design ER modelling concepts and architecture			
CO2	Apply relational database theory and be able to describe relational algebra expression, tuple and domain relation expression for queries.			
CO3	Recognize and identify the use of normalization and functional dependency, indexing and hashing technique used in database design.			
CO4	Recognize the purpose of query processing and optimization and also demonstrate the basic of query evaluation.			
CO5	Apply and relate the concept of transaction, concurrency control and recovery in database.			
CO6	Discuss recovery system and be familiar with introduction to web database, distribute databases, data warehousing and mining.			

Mapping of Course Outcomes With Program Outcomes


Course Outcomes	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3								
CO2					3	3	3	3		2	3	
CO3									3			3
CO4								1		2		2
CO5	1				2			3				
CO6		2	2			3						

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COURSE OUTCOMES

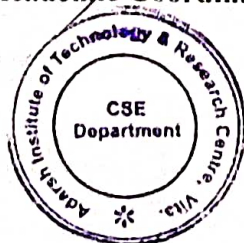
Program	Computer Science and Engineering	Class	B. Tech
Course	Social Networks	Course Code	BTCOE801
Teaching Scheme Hours/ week	3 hrs	Credit	3
Exam Scheme:	CA-20	MSE-20	ESE-60
Prepared by	Mr. S. R. Mali	AY	Total -100 Even 2021-22
Course Outcomes			
At the end of the course the students should be able to:			
CO1	Demonstrate proficiency and understanding of social networks for business and professional use		
CO2	Demonstrate proficiency the use of social network analysis and social network developer tools		
CO3	Demonstrate proficiency and understanding of public sector media and privacy		
CO4	Demonstrate proficiency in understanding concepts in social networking and utilizing these concepts for solving real-world social network issues.		


Mapping of Course Outcomes With Program Outcomes

Course Outcomes	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2				3				1		
CO 2		1	1	2	3							
CO 3					1	2	3		3			
CO 4			3	2	3			1			3	


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COURSE OUTCOMES

Program	Computer Science and Engineering		Class	SY-B. Tech
Course	Digital Logic Design & Microprocessors		Course Code	BTES495
Teaching Scheme Hours/ week	Lectures: 3 hrs./week. Tut: 1 hrs/week		Credit	4
Exam Schemes	CA- 20M	MCQ- 20M	ESI- 60M	Total - 100M
Prepared by	Asst. Prof. P. T. Shinde		AY	2021-22
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Realize and solve Boolean Algebraic assignments for designing Combinational digital circuit using K-Maps.			
CO2	Design and implement Sequential digital circuits as per the specifications.			
CO3	Design the simple digital systems using Algorithmic State Machine.			
CO4	Design combinational circuits using PLDs			
CO5	Apply the knowledge of logic families to design digital system.			
CO6	Describe 8086 Microcontroller.			

Mapping of Course Outcomes with Program Outcomes

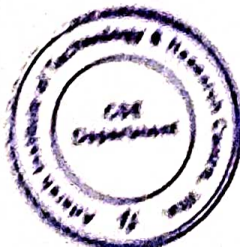
Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	3	1	1	2	1	3	2	1	3
CO2	3	2	2	2	1	2	3	2	1	1	1	2
CO3	1	3	1	1	2	3	2	3	2	1	1	1
CO4	2	1	1	1	2	2	3	2	1	3	2	1
CO5	2	2	1	2	2	2	1	1	2	2	3	1
CO6	3	2	3	3	3	1	1	2	3	1	3	2

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low


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COURSE OUTCOMES

Program	Computer Science and Engineering		Class	TY-B. Tech
Course	Internet of Things		Course Code	BTCOE604
Teaching Scheme Hours/ week	Lecture: 2 hrs. /week Practical: 2 hrs. /week		Credit	2
Exam Scheme:	CA- 20M	MSE- 20M	ESE- 60M	Total – 100M
Prepared by	Mr. P. T. Shitole		AY	2021-22
Course Outcomes				
At the end of the course the students should be able to:				
CO1	Understand the application areas of IOT.			
CO2	Realize the revolution of Internet in Mobile Devices, Cloud & Sensor Networks.			
CO3	Understand building blocks of Internet of Things and characteristics.			
CO4	Explain the definition and usage of the term “Internet of Things” in different contexts			
CO5	Demonstrate the ability to transmit data wirelessly between different devices			
CO6	Implement interfacing of various sensors with Arduino/Raspberry Pi.			


Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	3	1	1	2	1	3	2	1	3
CO2	3	2	2	2	1	2	3	2	1	1	1	2
CO3	1	3	1	1	2	3	2	3	2	1	1	1
CO4	2	1	1	1	2	2	3	2	1	3	2	1
CO5	2	2	1	2	2	2	1	1	2	2	3	1
CO6	3	2	3	3	3	1	1	2	3	1	3	2

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low


Subject Teacher


Academic Coordinator


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COURSE OUTCOMES

Program	Computer Science and Engineering	Class	SY-B. Tech
Course	Data Structure	Course Code	BTCOC303
Teaching Scheme Hours/ week	Lecture: 3 hrs./week Tut: 1hrs./week Practical: 2 hrs./week	Credit	4
Exam Scheme:	CA- 20M MSE- 20M	ESE- 60M	Total – 100M
Prepared by	Mr. P. T. Shitole	AY	2021-22
Course Outcomes			
At the end of the course the students should be able to:			
CO1	Understand the concept of array storage and Examine the concept of row-major and column-major order.		
CO2	Design and Formulate different sorting algorithms		
CO3	Analyze and apply operations of linked lists and demonstrate their applications		
CO4	Demonstrate operations on trees and discuss various types of Trees.		
CO5	Design applications using stacks and various types of queues		
CO6	Identify, model, solve and develop algorithms for real-life problems like shortest path and MST using graph theory.		

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	3	1	1	2	1	3	2	1	3
CO2	3	2	2	2	1	2	3	2	1	1	1	1
CO3	1	3	1	1	2	3	2	3	2	1	3	2
CO4	2	1	1	1	2	2	3	2	1	3	2	1
CO5	2	2	1	2	2	2	1	1	2	2	3	1
CO6	3	2	3	3	3	1	1	2	3	1	3	2

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low


Subject Teacher


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COURSE OUTCOMES

Program	Computer Science and Engineering	Class	B. Tech
Course	Full Stack Development	Course Code	BTCOL705
Teaching Scheme Hours/ week	Lecture: 1 hrs./week Practical: 2 hr./week	Credit	2
Exam Scheme:	CA- 60M MSE- NA	ESE- 40M	Total – 100M
Prepared by	Mr. P. T. Shitole	AY	2021-22
Course Outcomes			
At the end of the course the students should be able to:			
CO1	Structure and implement HTML/CSS		
CO2	Apply intermediate and advanced web development practices.		
CO3	Develop a fully functioning website and deploy on a web server.		
CO4	Develop fully working applications that can be used on cross-platforms.		
CO5	Create visualizations in accordance with UI/UX theories.		
CO6	Meet both technical and consumer needs for a web development project		

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	3	1	1	2	1	3	2	1	3
CO2	3	2	2	2	1	2	3	2	1	1	1	2
CO3	1	3	1	1	2	3	2	3	2	1	1	1
CO4	2	1	1	1	2	2	3	2	1	3	2	1
CO5	2	2	1	2	2	2	1	1	2	2	3	1
CO6	3	2	3	3	3	1	1	2	3	1	3	2

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low


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COURSE OUTCOMES

Program	Computer Science and Engineering		Class	T.Y B. Tech
Course	Theory of Computation		Course Code	BTCOC502
Teaching Scheme Hours/ week	Lecture: 3 hrs./week Tutorial:1 hrs./week		Credit	4
Exam Scheme:	CA-20M	MSE- 20M	ESE-60 M	Total -100
Prepared by	Mr.S.P.Mali		AY	2021-2022
Course Outcomes				
At the end of the course the students should be able to:				
CO1	To understand the abstract models of computation.			
CO2	To Design Finite Automata's for different Regular Expressions and Languages			
CO3	To Construct context free grammar for various languages			
CO4	To solve various problems of applying normal form techniques, push down automata and Turing Machines			
CO5	To know the limitations of computation, i.e. the unsolvability of problems.			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1		1							
CO2	2	3	2	1								
CO3	3	2	2	1	1							
CO4	2	1	1	1								
CO5	2	1	2		1							

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

Subject Teacher

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COURSE OUTCOMES

Program	Computer Science and Engineering	Class	T.Y B. Tech
Course	Computer Architecture and Organization	Course Code	BTCOC304
Teaching Scheme Hours/ week	Lecture: 3 hrs./week Tutorial:1 hrs./week	Credit	4
Exam Scheme:	CA-20M MSE- 20M	ESE-60 M	Total -100
Prepared by	Mr.S.P.Mali	AY	2021-2022
Course Outcomes			
At the end of the course the students should be able to:			
CO1	Students will be able to identify where, when and how enhancements of computer performance can be accomplished.		
CO2	To understand the basic hardware and software issues of computer organization.		
CO3	Identify functional units, bus structure and addressing modes.		
CO4	Identify memory hierarchy and performance		
CO5	Learn the concepts of pipelined processors and interprocessor communication		

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	1	2							
CO2	2	2	1	2	1							
CO3	2	3	1	1								
CO4	2	3		1								
CO5	3	2		1	1							

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

Subject Teacher

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COURSE OUTCOMES

Program	Computer Science & Engineering		Class	TY
Course	Compiler Design		Course Code	BTCOC601
Teaching Scheme Hours/ week	3		Credit	4
Exam Scheme:	CA-20	MSE-20	ESE-60	Total -100
Prepared by	Mr.A.H.Pudale		AY	2021-2022
Course Outcomes				
At the end of the course the students should be able to:				
CO1	To understand fundamentals of compiler and identify the relationships among different phases of the compiler.			
CO2	To study lexical analysis its role and specifications			
CO3	To enrich the knowledge in syntax analysis phase of compiler and inform students about different parsing techniques			
CO4	To design syntax directed translation schemes for a given context free grammar			
CO5	Apply optimization techniques to intermediate code and generate machine code for high level language program			

Mapping of Course Outcomes with Program Outcomes

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	2	1	1	1	1	1	1	1	2
CO2	2	2	2	2	1	1	1	1	1	1	1	2
CO3	2	2	3	2	1	1	1	1	1	1	1	1
CO4	2	2	3	1	1	1	1	1	1	1	1	2
CO5	2	2	3	1	1	1	1	1	1	1	1	1

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

Subject Teacher

Academic Coordinator

Head

