Shri. Balasaheb Mane Shikshan Prasarak Mandal's
ASHOKRAO MANE GROUP OF INSTITUTIONS
FACULTY OF ENGINEERING
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
NH – 4, Wathar Tarf Vadgaon, Tal: - Hatkanangale, Dist: - Kolhapur - 416112.
Phone: (0230) 2407740, 2407750, 2407760 Fax: (0230) 2407750

Second Year B. Tech CSE

Subject: Design & Analysis of Algorithms **Subject Code:** B**TCOC401**

Course Outcomes (COs):-

Upon completion of this course, students will be able to		Mapping
C1	Understand the notion of an algorithm, asymptotic notations and relative data structures you want to design for given task.(e.g. Searching, Sorting, Merging etc….)	1,12
C2	Analyze the recursive and non-recursive algorithms and divide and conquer.	1,2
C3	Understand the algorithm design techniques using greedy method.	1,2
C4	Understand the algorithm design techniques using dynamic programming.	1,2
C5	Explain the algorithm design techniques using backtracking, branch and bound and NP-complete and NP-hard problems.	1,2

CO-PO-PSO Mapping:-

CO	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3											2		3	
CO2	2	3												3	
CO3	2	2												3	
CO4	2	2												3	
CO5	2	2													
Avg.	2.2	2.25										2		3	

CO-PO Mapping Justification:-

CO No	PO/PSO	CL	JUSTIFICATION
1	PO1	3	Strongly mapped as students will be able to gain the knowledge of asymptotic notations, divide and conquer.
	PO12	2	Slightly mapped as students will be able to apply the concept of searching and sorting etc. problem types.
	PSO 2	3	Strongly mapped as students will be able to apply the searching and sorting techniques in real world problems.
2	PO1	2	Moderately mapped as students will be able to gain the knowledge of general plan of recursive and non-recursive algorithms and theory of Backward substitution in divide and conquer technique.
	PO2	3	Strongly mapped as students will be able to analyze the time and space complexity of recursive and non-recursive algorithms.
	PSO 2	3	Strongly mapped as students will be able to apply the divide & conquer techniques in real world problems.
3	PO1	2	Moderately mapped as students will be able to gain the knowledge of greedy method concepts.
	PO2	2	Moderately mapped as students will be able to analyze the time and space complexity of greedy algorithms.
	PSO 2	1	Slightly mapped as students will be able to apply the concept of algorithms in system software such as compilers and debuggers.
4	PO1	2	Moderately mapped as students will be able to gain the knowledge of dynamic method concepts.
	PO2	2	Moderately mapped as students will be able to analyze the time and space complexity of dynamic programming algorithms.
	PSO 2	3	Strongly mapped as students will be able to apply the greedy techniques in real world problems such as TSP, reliability design.
5	PO1	2	Moderately mapped as students will be able to gain the knowledge of Backtracking, branch and bound concepts.
	PO2	2	Moderately mapped as students will be able to analyze the time and space complexity of backtracking, branch and bound algorithms.
	PSO 2	3	Strongly mapped as students will be able to apply the backtracking, branchand bound in real world problems such as event scheduling.

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Subject: - Operating Systems **Subject Code: BTCOC402**

Course Outcomes (COs):-

CO	DESCRIPTION (Student should be able to...)
C1	Understand Operating system structures.
C2	Understand Processes and CPU Scheduling.
C3	Understand Process Synchronization, Monitors Deadlocks.
C4	Understand Memory Management, Paging, and Virtual Memory.
C5	Understand File Management, Mass-Storage Structure.

CO-PO Mapping:-

CO	**PO**												**PSO**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
1	3														
2									2						
3					3								2	3	
4						3									
5			3							2					
C301	3		3		3	3			2	2			2	3	

CO-PO Mapping Justification:-

CO	Justification of mapping		
	1: Slight (Low)	2: Moderate (Medium)	3: Substantial (High)
1			PO-1 Students are getting knowledge at high level of engineering problems.
2		PO-2 Students effectively use different Processes of operating system individually.	
3		PSO-1 Students demonstratrate advanced techniques in recent technologies.	PO-5 Students effectively use file and memory maganement techniques. PSO-2 Students demonstrate paging,mass storage structure management.
4			PO-6 Students effectively use good relational designs to ass's social, safety, cultural issues.
5		PO-10 Students effectively use OS concepts in communication with society engineering community.	PO-3 Students effectively use File Management, Memory Management, and Mass-Storage in design and development of solutions.

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Subject: - Basic Human Rights **Subject Code: BTHM403**

Course Outcomes (COs):-

CO	DESCRIPTION (Student should be able to...)
C1	Understand the key issues in Human Rights and the basic concept related to basic Human rights
C2	Acquire fundamental Rights of Human and Economic programme ,social structure of Humans
C3	Understand Basic Human rights and Indian Constitutions and Laws.
C4	Achieve adequate perspectives of Basic Human Rights in various cases like Berubari case.
C5	Understand Universal declaration of human rights and provisions of India

CO-PO Mapping:-

CO	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1					3								3		
2			3											3	
3			3		2										
4			3		2										
5			3												3
C203			3		3,2								3	3	3

CO-PO Mapping Justification:-

CO No	PO/PSO	CL	JUSTIFICATION
1	PO 6	3	Strongly mapped as students will understanding key issues in human rights and basic human rights concepts is crucial for engineers to assess societal and legal issues, which aligns with PO6.
	PSO 1	2	Medium mapped as students will have the knowledge of Basic Human Rights
2	PO6	3	Strongly mapped as students will Acquiring knowledge of fundamental human rights and understanding social structures aligns with PO6, which focuses on the engineer's role in assessing societal issues.
	PSO2	2	Moderately mapped as students think on individual rights, Family rights and, Society happened events participation
3	PO8	3	Strongly mapped as students will understand and learned ethics of Basic Human rights
	PSO2	2	Moderately mapped as students understand the good ethics of basic human rights.
4	PO8	3	Strongly mapped as students will study the Indian constitution and its related information
	PSO2	2	Moderately mapped as students build the Indian constitutions and its importance
5	PO6	3	Strongly mapped as students realize universal declaration of basic human rights
	PSO3	1	Slightly mapped as students search the some ethical and professional new ideas and apply in real life

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Subject: - Digital Logic Design and Microprocessor **Subject Code: - BTES405**

Course Outcomes (COs):

CO	DESCRIPTION (Student should be able to...)
1	Understand the theory and architecture of Microprocessor.
2	Analyze some of the digital logics
3	Design a multiplexer and de multiplexer
4	Learn about latches and flip flops
5	Learn the concepts of different types of counters

CO-PO Mapping:-

CO	PO												PSO		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
1					3								3		
2			3											3	
3			3		2										
4			3		2										
5			3												3
6															
7															
8			3		3,2								3	3	3

CO-PO Mapping Justification:-

CO	Justification of mapping		
	1: Slight (Low)	2: Moderate (Medium)	3: Substantial (High)
1			PO-1 Students are getting knowledge at high level of engineering problems.
2		PO-2 Students effectively use different logic gates	
3		PSO-1 Students demonstratrate advanced techniques in recent technologies.	PO-5 Students effectively use file and memory maganement techniques. PSO-2 Students demonstrate paging,mass storage structure management.
4			PO-6 Students effectively use good relational designs to asses social, safety, cultural issues.
5		PO-10 Students effectively use OS concepts in communication with society engineering community.	PO-3 Students effectively use File Management, Memory Management, and Mass-Storage in design and development of solutions.

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Subject: - Python Programming **Subject Code: BTCOL406**

Course Outcomes (COs):-

CO	DESCRIPTION (Student should be able to...)
CO1	Understand the basic building blocks in python programming along with basic concept of data structure & OOPS.
CO2	Apply the knowledge on control flow assignment, Conditional , loops & function.
CO3	Apply the knowledge on Expression, String & file handling.
CO4	Understand data structures such as list, dictionary, set and tuple to solve a given problem
CO5	Apply the knowledge & develop the application using the database concepts in Python.

CO-PO Mapping:-

CO	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	1	2	3		3							2	3	2	
2	1	2	3		3							1	2	2	
3	1	2	2		3							1	3	2	
4	2	2	3		3							2	3	2	
5	2	2	3		3							2	3	2	
AVG	1.4	2	2.8		3							1.6	2.8	2	

CO-PO Mapping Justification:-

CO No	PO/PSO	CL	JUSTIFICATION
1	PO 1	1	Maps Slightly because students know the basic concepts of data structure & OOPS.
	PO 2	2	Moderately mapped as only few students identify their own problem by conducting literature review for writing programs.
	PO3	3	Strongly mapped as designing and implementation is required to write the program for the given problem statement.
	PO5	3	Strongly mapped as students learn modern IDE tools to execute python programs / applications.
	PO12	2	Moderately mapped as students apply the concepts learnt in continuing professional development and new developments.
	PSO1	3	Strongly mapped as students understand fundamentals of Python syntax and semantics and fluent in the use of concepts in writing the programs to build application.
	PSO2	2	Moderately mapped as Students demonstrate the knowledge of python programming languages.
2	PO 1	1	Maps Slightly because students know the basic concepts of Control flow & looping statement.
	PO 2	2	Moderately mapped as only few students identify their own problem by conducting literature review for writing programs.
	PO3	3	Strongly mapped as designing and implementation is required to write the program for the given problem statement.
	PO5	3	Strongly mapped as students learn modern IDE tools to execute python programs / applications.
	PO12	1	Slightly mapped as students apply the concepts learnt in continuing professional development
	PSO1	2	Moderately mapped because Python is used in most of the applications.
	PSO2	2	Moderately mapped as Students demonstrate the knowledge of python programming languages.
3	PO 1	1	Maps Slightly because students know the basic concepts of String.

	PO 2	2	Moderately mapped as only few students identify their own problem by conducting literature review for writing programs
	PO3	2	Maps Moderately because File manipulation functions are used in developing solutions.
	PO5	3	Strongly mapped because String manipulation functions of python are used in most modern day front end tools.
	PO12	1	Slightly mapped because File and string handling functions are used in other applications.
	PSO1	3	Strongly mapped as students understand fundamentals of Python syntax and semantics of string and fluent in the use of concepts in writing the programs to build application
	PSO2	2	Moderately mapped as Students demonstrate the knowledge of python programming languages.
4	PO 1	2	Maps Moderately In order to design the DS properly, analysis of requirement and problem solving technique are required.
	PO 2	2	Maps Moderately as problem analysis is necessary for solving /developing any application using appropriate python programming construct such as to Lists, Dictionaries, tuples and regular Expressions.
	PO3	3	Strongly mapped as the process of design and implementation has to be followed while applying the concepts.
	PO5	3	Strongly mapped because these DS like Tuples, list and dictionary are used in NO SQL DB
	PO12	2	Moderately mapped as students apply the concepts learnt in continuing professional development and new developments.
	PSO1	3	Strongly mapped as students understand fundamentals of Python syntax, Lists, Dictionaries, tuples and regular Expressions and fluent in the use of concepts in writing the programs to build application.
	PSO2	2	Moderately mapped as Students demonstrate the knowledge of python programming languages
5	PO 1	2	Maps Moderately because SQL DDL and DML statements of SQLITE are used of solving real time problems.
	PO 2	2	Maps Moderately as problem analysis is necessary for solving /developing any application using appropriate python programming concept like database
	PO3	3	Strongly mapped as SQLITE is a DBMS package which can be used in modern applications.
	PO5	3	Strongly mapped as students learn modern IDE tools to build and execute python applications using Databases (MySQL SQLite)
	PO12	2	Moderately mapped as students apply the concepts learnt in continuing professional development and new developments.
	PSO1	3	Strongly mapped as students understand fundamentals of Python syntax in DBMS in writing the programs to build application.
	PSO2	2	Moderately mapped as Students demonstrate the knowledge of python programming languages

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Subject: -Seminar-II **Subject Code: - BTCOS407**

Course Outcomes (COs):-

	Upon completion of this course Student should be able to
CO1	Gain a comprehensive overview of web design concepts, including the principles of user interface (UI) and user experience (UX) design.
CO2	Learn the essentials of Cascading Style Sheets (CSS) for effective web page design.
CO3	Develop programming skills through the exploration of fundamental constructs, including if...else statements, loops, and functions.
CO4	Learn the basics of PHP syntax, data types, operators, and expressions.
CO5	Understand the fundamentals of jQuery, including validation, forms, and practical examples of jQuery implementation.

CO-PO Mapping:-

CO	**PO**												**PSO**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
1	3											3			3
2	3				2							3			3
3	3		2									3			3
4	3											3			3
5	3											3			3