

Academic Year	2021-22
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**B.P.H.E. Society's
Ahmednagar College, Ahmednagar
Internal Quality Assurance Cell
CO, PO, and PSO Attainment Sheet**

Department Name	COMPUTER SCIENCE
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Program Name	BCA(SCIENCE)
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Program Outcomes(PO)

PO1	APPLY COMPUTER LITERACY OF STUDENTS AND BASIC UNDERSTANDING OF OPERATIVE SYSTEMS AND
PO2	UTILIZE KNOWLEDGE OF ORGANIZE INFORMATION EFFICIENTLY IN THE FORMS OF OUTLINES, CHARTS, ETC. BY
PO3	DEVELOP PROGRAMMING SKILLS TO PRESENT IDEAS EFFECTIVELY AND EFFICIENTLY IN ANDROID
PO4	DESIGNING AND DELIVERING AN EFFECTIVE PRESENTATION IN INTERNET OF THINGS(IoT)
PO5	APPLY SYSTEMS ANALYSIS DESIGN PARADIGM TO CRITICALLY ANALYZE A ERRORS RELATED TO SOFTWARE
PO6	SOLVE PROBLEMS(PROGRAMMING NETWORKING DATABASE AND WEB DESIGN) IN INFORMATION TECHNOLOGY
PO7	APPLY PROFESSIONAL BEHAVIOR IN PROFESSIONAL IT ENVIRONMENT RELATED TO EMPLOYABILITY.
PO8	APPLY NETWORKING TECHNOLOGIES IN INTEGRATED IT SYSTEMS IN AN IT ENVIRONMENT.
PO9	IMPART KNOWLEDGE REQUIRED FOR PLANNING, DESIGNING AND BUILDING COMPLEX APPLICATION SOFTWARE
PO10	DEVELOP ENTREPRENEURSHIP SKILLS FOR CUSTOMIZED SOFTWARE SOLUTIONS FOR SMALL AND MEDIUM
PO11	
PO12	

Program Specific Outcome(PSO)

PSO1	FUNDAMENTAL KNOWLEDGE OF COMPUTERS, COMPUTER ORGANIZATION AND C PROGRAMMING.
PSO2	KNOWLEDGE OF RELATIONAL DATABASE MANAGEMENT SYSTEM AND ADVANCED DATABASE MANAGEMENT
PSO3	PRACTICAL KNOWLEDGE ON WEB TECHNOLOGIES, DATA STRUCTURES, PYTHON PROGRAMMING, ANDROID

Academic Year 2021-22

Class		FYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code		BCA111		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name		FUNDAMENTALS OF COMPUTER	CO1	2	2	1	1	1	1	2	2	2	2	3	3	3
Semester No		I	CO2	3	3	3	2	3	2	3	2	3	2	3	3	3
Teacher Name			CO3	3	2	3	3	2	3	3	2	3	2	3	3	3
Course Outcomes			CO4	3	3	3	2	2	3	2	2	3	2	3	3	3
	CO1	DEFINE WORKING OF COMPUTERS AND PERIPHERALS, TYPES OF SOFTWARE AND LANGUAGE	CO5													
	CO2	TROUBLESHOOT THE COMPUTER SYSTEMS AND USE UTILITY SOFTWARE	Average	2.75	2.50	2.50	2.00	2.00	2.25	2.50	2.00	2.75	2.00	3.00	3.00	3.00
	CO3	CHOOSE COMMANDS AND FEATURES OF OPERATING SYSTEMS AND APPLICATION SOFTWARE														
	CO4	USE OPEN SOURCE SOFTWARE														
	CO5															

Class		FYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code		BCA112		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name		PROBLEM SOLVING AND C PROGRAMMING	CO1	3	3	3	3	3	3	2	2	3	3	3	3	3
Semester No		I	CO2	2	3	3	3	3	2	3	2	3	3	3	3	3
Teacher Name			CO3	3	3	3	3	3	3	3	3	3	3	3	3	3
Course Outcomes			CO4	2	2	2	3	3	3	2	2	2	2	0	0	0

	CO1	DEFINE ALGORITHMS AND EXPLAIN THEIR CHARACTERISTICS	CO5													
	CO2	FORMULATE ALGORITHM AND DRAW FLOW CHART TO SOLVE A GIVEN PROBLEM	Average	2.50	2.75	2.75	3.00	3.00	2.75	2.50	2.25	2.75	2.75	2.25	2.25	2.25
	CO3	EXPLAIN USE OF APPROPRIATE DATA TYPES, CONTROL STATEMENTS														
	CO4	DEMONSTRATE ABILITY TO USE TOP-DOWN PROGRAM DESIGN														
	CO5															

Class		FYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code		BCA113		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name		APPLIED MATHEMATICS	CO1	2	2	2	2	3	3	2	2	2	2	3	3	3
Semester No		I	CO2	2	2	2	2	3	3	2	2	2	2	3	3	3
Teacher Name			CO3	2	2	2	2	3	3	2	2	2	2	3	3	3
Course Outcomes			CO4	1	1	1	1	3	3	1	1	1	1	0	0	0
	CO1	RELATE AND APPLY TECHNIQUES FOR CONSTRUCTING MATHEMATICAL PROOFS AND MAKE USE OF APPROPRIATE SET OPERATIONS, PROPOSITIONAL LOGIC TO SOLVE PROBLEMS	CO5	2	2	2	1	1	1	2	2	3	3	0	0	0
	CO2	USE FUNCTION OR RELATION MODELS TO INTERPRET ASSOCIATED RELATIONSHIPS	Average	1.80	1.80	1.80	1.60	2.60	2.60	1.80	1.80	2.00	2.00	1.80	1.80	1.80
	CO3	APPLY BASIC COUNTING TECHNIQUES AND USE PRINCIPLES OF PROBABILITY														
	CO4	GIVEN A DATA, COMPUTE VARIOUS STATISTICAL MEASURES OF CENTRAL TENDENCY														
	CO5	USE APPROPRIATE SAMPLING TECHNIQUES														

Class		FYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code		BCA114		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name		BUSINESS COMMUNICATION	CO1	3	3	2	2	3	2	3	3	3	2	3	3	3
Semester No		I	CO2	2	2	3	3	3	2	3	3	3	2	3	3	3
Teacher Name			CO3	2	3	2	3	3	3	2	2	3	3	3	3	3
Course Outcomes			CO4	3	3	2	3	3	3	2	2	3	3	0	0	0
	CO1	APPLY BUSINESS COMMUNICATION STRATEGIES AND PRINCIPLES TO PREPARE EFFECTIVE COMMUNICATION FOR DOMESTIC AND INTERNATIONAL BUSINESS SITUATIONS.	CO5													
	CO2	IDENTIFY ETHICAL, LEGAL, CULTURAL, AND GLOBAL ISSUES AFFECTING BUSINESS COMMUNICATION.	Average	2.50	2.75	2.25	2.75	3.00	2.50	2.50	2.50	3.00	2.50	2.25	2.25	2.25
	CO3	PARTICIPATE IN TEAM ACTIVITIES USING COLLABORATIVE WORK SKILLS.														
	CO4	COMMUNICATE VIA ELECTRONIC MAIL, INTERNET, AND OTHER TECHNOLOGIES														
	CO5	DELIVER AN EFFECTIVE ORAL BUSINESS PRESENTATION														

Class		FYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code		BCA115		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name		FUNDAMENTALS OF COMPUTERS LABORATORY	CO1	3	3	3	3	2	2	2	2	2	3	3	3	
Semester No		I	CO2	3	3	3	3	3	3	3	3	3	3	3	3	
Teacher Name			CO3	3	3	3	3	3	3	2	2	2	2	3	3	3

Course Outcomes			CO4	3	3	3	3	2	2	3	2	3	2	0	0	0
	CO1	INSTALL OPERATING SYSTEM AND EXECUTE VARIOUS COMMANDS	CO5													
	CO2	EFFECTIVELY USE VARIOUS FEATURES OF APPLICATION SOFTWARE	Average	3.00	3.00	3.00	3.00	2.50	2.50	2.50	2.25	2.50	2.25	2.25	2.25	2.25
	CO3	CREATE AND USE SPREADSHEETS EFFECTIVELY														
	CO4	PREPARE EFFECTIVE PRESENTATION														
	CO5															

Class		FYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code		BCA116		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name		C PROGRAMMING LABORATORY	CO1	3	3	3	3	2	2	2	2	3	3	3	3	3
Semester No		I	CO2	3	3	3	3	3	3	2	2	2	3	3	3	3
Teacher Name			CO3	3	3	3	3	3	3	2	2	2	2	3	3	3
Course Outcomes			CO4													
	CO1	FORMULATE AN ALGORITHM AND DRAW FLOWCHAARAT FOR THE GIVEN PROBLEM	CO5													
	CO2	IMPLEMENT THE GIVEN ALGORITHM IN C	Average	3.00	3.00	3.00	3.00	2.67	2.67	2.00	2.00	2.33	2.67	3.00	3.00	3.00
	CO3	WRITE PROGRAMS USING APPROPRIATE DATA TYPES AND CONTROL STRUCTURES IN C														
	CO4															
	CO5															

Class		FYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code		BCA117		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name		APPLIED MATHEMATICS LABORATORY	CO1	2	2	3	3	3	3	2	2	3	3	2	2	2

Semester No	I	CO2	2	2	2	2	2	3	3	3	3	3	2	2	2	
Teacher Name		CO3											3	3	3	
Course Outcomes		CO4														
	CO1	APPLY MATHEMATICAL AND STATISTICAL CONCEPTS TO SOLVE PROBLEMS	CO5													
	CO2	USE R TO PERFORM STATISTICAL OPERATIONS AND DATA VISUALIZATION	Average	2.00	2.00	2.50	2.50	2.50	3.00	2.50	2.50	3.00	3.00	2.33	2.33	2.33
	CO3															
	CO4															
	CO5															

Class		FYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code		BCA118		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name		BUSINESS COMMUNICATION LABORATORY	CO1	3	3	3	3	3	2	2	2	2	2	2	2	2
Semester No	I		CO2	2	3	2	3	2	3	2	2	2	2	2	2	2
Teacher Name			CO3	3	2	2	3	2	2	2	2	2	2	3	3	3
Course Outcomes			CO4	3	2	2	2	3	3	3	3	3	3	0	0	0
	CO1	EFFECTIVELY LISTEN TO LECTURES, PUBLIC ANNOUNCEMENTS AND NEWS ON TV AND RADIO.	CO5	3	3	3	3	3	3	3	3	3	3	0	0	0
	CO2	ENGAGE IN TELEPHONIC CONVERSATION	Average	2.80	2.60	2.40	2.80	2.60	2.60	2.40	2.40	2.40	2.40	1.40	1.40	1.40
	CO3	COMMUNICATE EFFECTIVELY AND ACCURATELY IN ENGLISH														
	CO4	USE SPOKEN LANGUAGE FOR VARIOUS PURPOSES														
	CO5	DEMONSTRATE ABILITY TO PREPARE DOCUMENTS USED IN BUSINESS CORRESPONDECE														

Class		FYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code		BCA121		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name		COMPUTER ORGANIZATION	CO1	3	2	2	3	2	2	3	3	3	3	2	2	2
Semester No		II	CO2	2	3	2	2	2	2	3	3	3	3	2	2	2
Teacher Name			CO3	3	3	3	3	3	3	2	2	2	2	3	3	3
Course Outcomes			CO4													
	CO1	DESIGN OF COMBINATIONAL CIRCUITS	CO5													
	CO2	DESIGN OF SEQUENTIAL CIRCUITS	Average	2.67	2.67	2.33	2.67	2.33	2.33	2.67	2.67	2.67	2.67	2.33	2.33	2.33
	CO3	EXPLAIN BLOCK DIAGRAM OF CPU, MEMORY AND TYPES OF I/O TRANSFERS														
	CO4															
	CO5															

Class		FYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code		BCA122		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name		ADVANCED C PROGRAMMING	CO1	3	3	3	3	2	2	2	3	3	2	3	3	3
Semester No		II	CO2	2	3	3	3	3	3	2	2	2	3	3	3	3
Teacher Name			CO3	3	2	2	3	3	3	2	3	2	3	3	3	3
Course Outcomes			CO4	3	3	3	3	3	3	3	2	2	3	0	0	0
	CO1	WRITE PROGRAMS USING POINTERS, STRUCTURES AND UNIONS	CO5													
	CO2	USE PRE-PROCESSOR DIRECTIVES	Average	2.75	2.75	2.75	3.00	2.75	2.75	2.25	2.50	2.25	2.75	2.25	2.25	2.25
	CO3	MANIPULATE STRINGS USING LIBRARY FUNCTIONS														
	CO4	WRITE PROGRAMS TO PERFORM OPERATIONS ON FILES														
	CO5															

Class		FYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code		BCA123		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name		OPERATING SYSTEMS CONCEPTS	CO1	3	3	3	3	3	2	3	3	2	3	2	2	2
Semester No		II	CO2	2	2	2	2	2	3	3	2	3	2	2	2	2
Teacher Name			CO3	3	3	3	3	2	3	3	2	2	3	3	3	3
Course Outcomes			CO4													
	CO1	EXPLAIN BASIC CONCEPTS OF OPERATING SYSTEM	CO5													
	CO2	USE BASIC LINUX COMMANDS AND LINUX DOCUMENTATION	Average	2.67	2.67	2.67	2.67	2.33	2.67	3.00	2.33	2.33	2.67	2.33	2.33	2.33
	CO3	WRITE SHELL SCRIPTS														
	CO4															
	CO5															

Class		FYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code		BCA124		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name		DATABASE MANAGEMENT SYSTEM	CO1	3	3	3	3	2	2	2	3	2	3	2	2	2
Semester No		II	CO2	3	2	2	3	3	3	2	2	3	3	3	3	3
Teacher Name			CO3	2	3	3	3	3	3	2	2	2	3	3	3	3
Course Outcomes			CO4													
	CO1	DESIGN E-R MODEL FOR GIVEN REQUIREMENTS AND CONVERT THE SAME INTO DATABASE TABLES	CO5													
	CO2	FORMULATES DATABASE QUERIES USING SQL	Average	2.67	2.67	2.67	3.00	2.67	2.67	2.00	2.33	2.33	3.00	2.67	2.67	2.67
	CO3	DESIGN A DATABASE IN APPROPRIATE NORMAL FORM														
	CO4															
	CO5															

Class		FYBCA(SCIENCE)		Program Outcomes										PSOs		
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Subject Code	BCA125	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	
Subject Name	COMPUTER ORGANIZATION LABORATORY	CO1	3	2	2	2	2	2	2	2	2	2	3	3	3	
Semester No	II	CO2	3	3	3	3	3	3	3	3	3	3	3	3	3	
Teacher Name		CO3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Course Outcomes		CO4														
	CO1	DESIGN AND IMPLEMENT COMBINATIONAL CIRCUITS														
	CO2	DESIGN AND IMPLEMENT SEQUENTIAL CIRCUITS	Average	3.00	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	3.00	3.00	3.00
	CO3	TRANSLATE REAL WORLD PROBLEMS INTO DIGITAL LOGIC FORMULATIONS														
	CO4															
	CO5															

Class	FYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs			
Subject Code	BCA126	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	
Subject Name	ADVANCED C PROGRAMMING LABORATORY	CO1	3	2	3	3	3	3	3	3	3	3	3	3	3	
Semester No	II	CO2	2	3	2	3	2	3	2	3	2	3	3	3	3	
Teacher Name		CO3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Course Outcomes		CO4	2	3	2	3	2	3	2	3	2	3	0	0	0	
	CO1	WRITE PROGRAMS USING POINTERS, STRUCTURES AND UNIONS														
	CO2	USE PRE-PROCESSOR DIRECTIVES	Average	2.50	2.75	2.50	3.00	2.50	3.00	2.50	3.00	2.50	3.00	2.25	2.25	2.25
	CO3	MANIPULATE STRINGS USING LIBRARY FUNCTIONS														
	CO4	WRITE PROGRAMS TO PERFORM OPERATIONS ON FILES														
	CO5															

Class		FYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code		BCA127		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name		OPERATING SYSTEMS CONCEPTS	CO1	2	2	2	2	2	2	2	2	2	2	3	3	3
Semester No		II	CO2	3	3	3	3	3	3	3	3	3	3	3	3	3
Teacher Name			CO3	3	2	2	3	2	2	3	2	2	3	3	3	3
Course Outcomes			CO4													
	CO1	INSTALL LINUX AND PACKAGES, CONFIGURE ENVIROMENT	CO5													
	CO2	USE COMMANDS AND EDITORS AND USE DOCUMENTATION	Average	2.67	2.33	2.33	2.67	2.33	2.33	2.67	2.33	2.33	2.67	3.00	3.00	3.00
	CO3	CONFIGURE SECURITY AND NETWORK ENVIRONMENT														
	CO4															
	CO5															

Class		FYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code		BCA128		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name		DATABASE MANAGEMENT SYSTEM - I LABORATORY	CO1	3	3	3	3	3	3	3	3	3	3	3	3	3
Semester No		II	CO2	3	2	3	2	3	2	3	2	3	3	3	3	3
Teacher Name			CO3	3	3	3	3	3	3	3	3	3	3	3	3	3
Course Outcomes			CO4													
	CO1	PREPARE E-R DIAGRAM FOR THE GIVEN PROBLEM STATEMENT	CO5													
	CO2	FORMULATE APPROPRIATE SQL DDL QUERIES	Average	3.00	2.67	3.00	2.67	3.00	2.67	3.00	2.67	3.00	3.00	3.00	3.00	3.00
	CO3	FORMULATE APPROPRIATE SQL DML QUERIES														
	CO4															
	CO5															

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Class	SYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code	BCA231		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name	Data Structures	CO1	3	3	3	3	3	3	3	3	3	3	3	3	3
Semester No	III	CO2	3	3	3	3	3	3	3	3	3	3	3	3	3
Teacher Name		CO3	2	2	2	2	2	2	2	2	2	2	2	2	2
Course Outcomes		CO4													
	CO1	Apply appropriate data structures for the given problem	CO5												
	CO2	Design an efficient algorithm for the given problem	Average	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67
	CO3	Determine the time and space complexity of a given algorithm													
	CO4														
	CO5														

Class	SYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs			
Subject Code	BCA232		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	
Subject Name	Database Management Systems-II	CO1	3	2	2	2	2	2	2	2	2	2	2	2	2	
Semester No	III	CO2	3	2	3	3	2	3	3	2	3	2	3	3	3	
Teacher Name		CO3	3	2	2	2	2	2	3	2	2	3	2	2	2	
Course Outcomes		CO4	3	3	3	3	3	3	3	3	3	3	3	3	3	
	CO1	Formulate SQL queries using advanced SQL features.	CO5	2	2	2	2	2	2	2	2	2	2	3	3	3

	CO2	Perform Database operations using PL/PostgreSQL	Average	2.80	2.20	2.40	2.40	2.20	2.40	2.60	2.20	2.40	2.40	2.60	2.60	2.60
	CO3	Compare and contrast different concurrency control and recovery techniques.														
	CO4	Apply mechanisms for database security														
	CO5	Analyze various database system architectures.														

Class		SYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code		BCA233		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name		Computer Networks	CO1	3	2	3	2	3	2	3	2	3	2	3	3	3
Semester No		III	CO2	3	2	3	3	3	2	2	3	2	3	2	2	2
Teacher Name			CO3	3	2	2	2	3	2	3	2	3	3	3	3	3
Course Outcomes			CO4	3	2	2	2	3	3	2	2	2	3	3	3	3
	CO1	Analyze the requirements for a given organization and select appropriate network architecture, topologies, transmission mediums and technologies	CO5													
	CO2	Analyze data flow between TCP/IP model using Application, Transport and Network Layer Protocols	Average	3.00	2.00	2.50	2.25	3.00	2.25	2.50	2.25	2.50	2.75	2.75	2.75	2.75
	CO3	Illustrate applications of Computer Network														
	CO4	Compare and contrast different routing and switching algorithms														
	CO5															

Class		SYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code		BCA234		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name		Data Structures Laboratory	CO1	2	2	2	2	2	2	2	2	2	3	2	3	3

Semester No		III	CO2	3	3	3	3	3	3	2	2	2	3	3	3	3
Teacher Name			CO3	3	3	3	3	3	2	2	2	3	2	3	2	2
Course Outcomes			CO4													
	CO1	Apply appropriate data structures for the given problem	CO5													
	CO2	Design an efficient algorithm for the given problem and implement it using C Programming	Average	2.67	2.67	2.67	2.67	2.67	2.33	2.00	2.00	2.33	2.67	2.67	2.67	2.67
	CO3	Determine the time and space complexity of a given algorithm														
	CO4															
	CO5															

Class		SYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code		BCA235		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name		Database Management Systems-II Laboratory	CO1	2	2	2	3	3	2	2	3	2	3	3	3	2
Semester No		III	CO2	3	3	3	3	2	2	3	2	3	3	2	2	3
Teacher Name			CO3	2	2	2	3	3	3	2	2	2	2	3	3	3
Course Outcomes			CO4													
	CO1	Formulate SQL queries using advanced features	CO5													
	CO2	Write stored procedures, cursors and triggers using PL/Postgre SQL.	Average	2.33	2.33	2.33	3.00	2.67	2.33	2.33	2.33	2.33	2.67	2.67	2.67	2.67
	CO3	Design a database using database normalization technique														
	CO4															
	CO5															

Class		SYBCA(SCIENCE)		Program Outcomes										PSOs		
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Subject Code	BCA236	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	
Subject Name	Computer Networks and Web Programming Laboratory	CO1	3	3	3	3	2	2	2	2	2	2	3	3	3	
Semester No	III	CO2	2	2	2	2	3	2	2	2	2	3	3	2	2	
Teacher Name		CO3	3	3	3	3	2	2	3	3	3	3	3	3	3	
Course Outcomes		CO4	2	2	2	2	2	3	3	3	3	3	3	2	2	
	CO1	Use Networking commands, identify network devices and topology	CO5													
	CO2	Design a website using HTML and CSS.	Average	2.50	2.50	2.50	2.50	2.25	2.25	2.50	2.50	2.50	2.75	3.00	2.50	2.50
	CO3	Write java scripts														
	CO4	Interpret and formulate XML queries														
	CO5															

Class	SYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs			
Subject Code	BCA237	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	
Subject Name	EVS	CO1	3	3	2	3	3	2	3	2	3	3	2	2	2	
Semester No	III	CO2	3	3	3	3	3	2	2	3	2	3	2	3	2	
Teacher Name	BAWAKE SAGAR	CO3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Course Outcomes		CO4														
	CO1	Use Networking commands, identify network devices and topology	CO5													
	CO2	Design a website using HTML and CSS.	Average	3.00	3.00	2.67	3.00	3.00	2.33	2.67	2.67	2.67	3.00	2.33	2.67	2.33
	CO3	Write java scripts														
	CO4	Interpret and formulate XML queries														
	CO5															
	CO5															
	CO5															

Class	SYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code	BCA238		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name	LANGUAGE COMMUNICATION	CO1	3	3	3	3	2	2	2	3	2	3	2	2	2
Semester No	III	CO2	3	3	3	3	3	2	2	3	3	2	3	3	3
Teacher Name	POORNIMA BEHERE	CO3	2	2	2	3	3	2	2	2	2	3	2	2	2
Course Outcomes		CO4													
	CO1	Use Networking commands, identify network devices and topology	CO5												
	CO2	Design a website using HTML and CSS.	Average	2.67	2.67	2.67	3.00	2.67	2.00	2.00	2.67	2.33	2.67	2.33	2.33
	CO3	Write java scripts													
	CO4	Interpret and formulate XML queries													
	CO5														

Class	SYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs			
Subject Code	BCA241		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	
Subject Name	Object Oriented Programming and C++	CO1	3	3	2	3	3	2	3	2	3	3	2	2	2	
Semester No	IV	CO2	3	3	3	3	3	2	2	3	2	3	2	3	2	
Teacher Name	SUVARNA PARDESHI	CO3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Course Outcomes		CO4														
	CO1	Compare and contrast procedural and object oriented programming	CO5													
	CO2	Apply principles of OOP	Average	3.00	3.00	2.67	3.00	3.00	2.33	2.67	2.67	2.67	3.00	2.33	2.67	2.33
	CO3	Design and develop applications using object oriented programming language C++														
	CO4															
	CO5															

Class	SYBCA(SCIENCE)		Program Outcomes										PSOs		
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Subject Code	BCA242	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name	Web Technology	CO1	3	3	3	3	2	2	2	3	2	3	2	2	2
Semester No	IV	CO2	3	3	3	3	3	2	2	3	3	2	3	3	3
Teacher Name	SHAKIH SHAHEEN	CO3	2	2	2	3	3	2	2	2	2	3	2	2	2
Course Outcomes		CO4													
	CO1	Develop web based application using suitable client side and server side web technologies.	CO5												
	CO2	Build Dynamic web site using server side PHP Programming and Database connectivity.	Average	2.67	2.67	2.67	3.00	2.67	2.00	2.00	2.67	2.33	2.67	2.33	2.33
	CO3	Build applications using AJAX and XML													
	CO4														
	CO5														
	CO4														
	CO5														

Class	SYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code	BCA243	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name	Software Engineering	CO1	3	3	3	3	3	3	2	3	2	3	3	3	3
Semester No	IV	CO2	2	3	3	3	2	3	3	3	3	3	2	2	2
Teacher Name		CO3	3.00	2.00	3.00	2.00	3.00	1.00	1.00	2.00	2.00	2.00	3.00	3.00	3.00
Course Outcomes		CO4	3.00	3.00	2.00	3.00	3.00	2.00	2.00	2.00	2.00	3.00	2.00	2.00	3.00
	CO1	Compare and contrast various Software Engineering models	CO5	3	3	3	3	3	3	2	2	3	2	3	3
	CO2	Decide on appropriate process model for a developing a software project	Average	2.80	2.80	2.80	2.80	2.80	2.40	2.00	2.40	2.40	2.60	2.60	2.80
	CO3	Classify software applications and Identify unique features of various domains													

	CO4	Prepare System Requirement Specification (SRS) for the given problem
	CO5	Design and analyze Data Flow diagrams

Class		SYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code		BCA244		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name		C++ Programming Laboratory	CO1	3	2	3	2	3	2	2	1	2	3	3	3	3
Semester No		IV	CO2	3	3	2	3	2	2	3	2	3	2	2	3	3
Teacher Name			CO3	3.00	2.00	2.00	3.00	2.00	3.00	2.00	3.00	2.00	3.00	3.00	3.00	3.00
Course Outcomes			CO4													
	CO1	Compare and contrast procedural and object oriented programming	CO5													
	CO2	Apply principles of OOP	Average	3.00	2.33	2.33	2.67	2.33	2.33	2.33	2.00	2.33	2.67	2.67	3.00	3.00
	CO3	Design and develop applications using object oriented programming language C++														
	CO4															
	CO5															

Class		SYBCA(SCIENCE)	Course Outcomes	Program Outcomes										PSOs		
Subject Code		BCA245		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name		Web Technology Laboratory	CO1	3	2	3	3	3	3	2	2	2	1	3	3	3
Semester No		IV	CO2	3	3	3	2	2	3	3	3	3	2	3	3	3
Teacher Name			CO3	3	3	3	2	3	3	3	3	3	3	3	3	3
Course Outcomes			CO4													
	CO1	Design and implement static and dynamic websites using appropriate client side and server side technologies.	CO5													

	CO2	Build Dynamic web site using PHP Programming and Database connectivity.	Average	3.00	2.67	3.00	2.33	2.67	3.00	2.67	2.67	2.67	2.00	3.00	3.00	3.00
	CO3	Build applications using AJAX and XML and web services.														
	CO4															
	CO5															

Class	SYBCA(SCIENCE)		Course Outcomes	Program Outcomes										PSOs		
Subject Code	BCA246			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name	Python Programming Laboratory		CO1	3	3	2	2	2	3	3	3	3	3	3	3	3
Semester No	IV		CO2	2	2	3	3	3	3	2	2	2	3	3	3	3
Teacher Name			CO3	3	3	3	3	3	3	2	2	2	3	3	3	3
Course Outcomes			CO4													
	CO1	Write programs using Python programming constructs	CO5													
	CO2	Develop applications using Python programming	Average	2.67	2.67	2.67	2.67	2.67	3.00	2.33	2.33	2.33	3.00	3.00	3.00	3.00
	CO3															
	CO4															
	CO5															

Class	SYBCA(SCIENCE)		Course Outcomes	Program Outcomes										PSOs		
Subject Code	BCA247			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name	EVS II		CO1	3	3	2	3	3	2	3	2	3	3	2	2	2
Semester No	IV		CO2	3	3	3	3	3	2	2	3	2	3	2	3	2
Teacher Name	BAWAKE SAGAR		CO3	3	3	3	3	3	3	3	3	3	3	3	3	3
Course Outcomes			CO4													
	CO1	Use Networking commands, identify network devices and topology	CO5													

	CO2	Design a website using HTML and CSS.	Average	3.00	3.00	2.67	3.00	3.00	2.33	2.67	2.67	2.67	3.00	2.33	2.67	2.33
	CO3	Write java scripts														
	CO4	Interpret and formulate XML queries														
	CO5															
	CO5															
	CO5															

Class	SYBCA(SCIENCE)		Course Outcomes	Program Outcomes										PSOs		
Subject Code	BCA248			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name	LANGUAGE COMMUNICATION II		CO1	3	3	3	3	2	2	2	3	2	3	2	2	2
Semester No	IV		CO2	3	3	3	3	3	2	2	3	3	2	3	3	3
Teacher Name	POORNIMA BEHERE		CO3	2	2	2	3	3	2	2	2	2	3	2	2	2
Course Outcomes			CO4													
	CO1	Use Networking commands, identify network devices and topology	CO5													
	CO2	Design a website using HTML and CSS.	Average	2.67	2.67	2.67	3.00	2.67	2.00	2.00	2.67	2.33	2.67	2.33	2.33	2.33
	CO3	Write java scripts														
	CO4	Interpret and formulate XML queries														
	CO5															

Academic Year :	2021-22
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Class		TYBCA	Course Outcomes	Program Outcomes										PSOs		
Subject Code	BCA 351			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name	DSE I (Programming in java)	CO1	2	1	2	1	1	2	2	2	1	1	3	3	3	
Semester No	IV	CO2	0	2	1	1	1	1	2	1	2	1	3	3	3	
Teacher Name	SUVARNA PARDESHI	CO3	2	0	2	2	1	1	2	1	1	1	3	3	3	
Course Outcomes		CO4	1	1	0	1	1	2	1	1	1	1	0	0	0	
	CO1	Identify classes object, class members and relationship for given problem	CO5	1	1	1	1	1	1	1	1	1	0	0	0	
	CO2	Design end to end application using object oriented constructs	Average	1.20	1.00	1.20	1.20	1.00	1.40	1.60	1.20	1.20	1.00	1.80	1.80	1.80
	CO3	Apply collection classes for storing java objects														
	CO4	Use java API for program development														
	CO5	handle abnormal termination of a program using exception handling														

Class		TYBCA	Course Outcomes	Program Outcomes										PSOs		
Subject Code	BCA 352			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name	DSE-II Data mining and Data science	CO1	2	1	2	1	1	2	2	2	1	1	3	3	3	
Semester No	IV	CO2	0	2	1	1	1	1	2	1	2	1	3	3	3	
Teacher Name	SONALI AVHAD + FARHEEN	CO3	2	0	2	2	1	1	2	1	1	1	3	3	3	
Course Outcomes		CO4	1	1	0	1	1	2	1	1	1	1	0	0	0	
	CO1	warehousing and knowledge discovery	CO5	1	1	1	1	1	1	1	1	1	0	0	0	
	CO2	modeling and apply OLAP operations	Average	1.20	1.00	1.20	1.20	1.00	1.40	1.60	1.20	1.20	1.00	1.80	1.80	1.80
	CO3	solve real world problems														
	CO4	techniques like classification, prediction,														
	CO5	exploratory analysis.														

Class		TYBCA	Course Outcomes	Program Outcomes										PSOs		
Subject Code	BCA-353			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name	DSE III (Principles of Operating Systems)	CO1	2	2	2	2	2	2	2	2	2	2	3	3	3	

Semester No	V	CO2	3	3	3	3	3	3	3	3	3	3	3	3	3			
Teacher Name	NIVEDITA WAGHMARE	CO3	2	2	2	2	2	2	2	2	2	2	2	3	3	3		
Course Outcomes		CO4	3	3	3	3	3	3	3	3	3	3	3	0	0	0		
	CO1	disk scheduling	CO5	2	2	2	2	2	2	2	2	2	2	2	2	0	0	0
	CO2	communication and Multithreading	Average	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	1.80	1.80	1.80	
	CO3	Implement concept of critical-section																
	CO4	prevention																
	CO5	Use functions for file system management																

Class	TYBCA	Course Outcomes	Program Outcomes										PSOs				
Subject Code	BCA-354		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3		
Subject Name	Artificial Intelligence	CO1	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3
Semester No	IV	CO2	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2
Teacher Name	SHAHEEN SHAIKh	CO3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2
Course Outcomes		CO4	2	2	2	3	2	2	2	2	2	2	2	2	0	0	0
	CO1	problems	CO5														
	CO2	various AI applications	Average	2.50	2.50	2.50	2.75	2.50	2.50	2.50	2.50	2.50	2.50	2.50	1.75	1.75	1.75
	CO3	search / uninformed search or heuristic															
	CO4	language of representation															
	CO5																

Class	TYBCA	Course Outcomes	Program Outcomes										PSOs				
Subject Code	BCA-355		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3		
Subject Name	Cloud Computing	CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Semester No	IV	CO2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Teacher Name	DARSHANA GANDHI	CO3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2
Course Outcomes		CO4															
	CO1	as security, privacy, and	CO5														
	CO2	and approaches for the given	Average	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.33	2.33	2.33
	CO3	Compare and contrast various cloud services															
	CO4																
	CO5																

Class	TYBCA	Course Outcomes	Program Outcomes										PSOs				
Subject Code	BCA356		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3		
Subject Name	DSE I Laboratory (Programming in JAVA)	CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Semester No	V	CO2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3
Teacher Name	SUVARNA PARDESHI	CO3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

Course Outcomes			CO4	3	3	3	3	3	3	3	3	3	3	0	0	0
CO1	relationships for a given problem	CO5	2	2	2	2	2	2	2	2	2	2	2	0	0	0
CO2	oriented constructs.	Average	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	1.80	1.80	1.80
CO3																
CO4	Use Java APIs for program development.															
CO5	exception handling.															

Class	TYBCA	Course Outcomes	Program Outcomes										PSOs		
Subject Code	BCA357		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name	Laboratory (Data mining)	CO1	2	2	2	2	2	2	2	2	2	2	3	3	3
Semester No	V	CO2	2	2	2	2	2	2	2	2	2	2	3	3	3
Teacher Name	SONALI AVHAD	CO3	3	3	3	3	3	3	3	3	3	3	3	3	3
Course Outcomes		CO4													
CO1	Implement data mining tasks using R	CO5													
CO2	mining tasks	Average	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	3.00	3.00	3.00
CO3	using python packages														
CO4															
CO5															

Class	TYBCA	Course Outcomes	Program Outcomes										PSOs		
Subject Code	BCA 358		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name	and Memory management	CO1	2	2	2	2	2	2	2	2	2	2	3	3	3
Semester No	V	CO2	2	2	2	2	2	2	2	2	2	2	3	3	3
Teacher Name	NIVEDITA WAGHMARE	CO3	2	2	2	2	2	2	2	2	2	2	2	2	2
Course Outcomes		CO4	2	2	2	2	2	2	2	2	2	2	0	0	0
CO1	and Memory management	CO5	2	2	2	2	2	2	2	2	2	2	0	0	0
CO2	multithreading	Average	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.60	1.60	1.60
CO3	memory management and its allocation policies														
CO4															
CO5	Design a simple Expert system														

Class	TYBCA	Course Outcomes	Program Outcomes										PSOs		
Subject Code	BCA-361		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name	Android Programming	CO1	3	3	3	3	3	3	3	3	3	3	3	3	3
Semester No	VI	CO2	2	2	2	2	2	2	2	2	2	2	3	3	3
Teacher Name	SONALI AVHAD	CO3	3	3	3	3	3	3	3	3	3	3	2	2	2
Course Outcomes		CO4	3	3	3	3	3	3	3	3	3	3	0	0	0
CO1	applications.	CO5													
CO2	Platform	Average	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.00	2.00	2.00

	CO3	involving data storage in SQLite database
	CO4	applications
	CO5	

Class		TYBCA	Course Outcomes	Program Outcomes										PSOs					
Subject Code	Subject Name	BCA-362		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3			
Semester No	Teacher Name	VI	SUVARNA PARDESHI	CO1	3	2	3	2	3	2	3	2	3	2	3	3	3	3	
Course Outcomes		CO2	CO3	CO4	2	3	2	3	2	3	2	3	2	3	2	3	0	0	0
	CO1	Describe the core features and concepts in Go	CO5	3	2	3	2	3	2	3	2	3	2	3	2	0	0	0	
	CO2	Write simple Go programs using functions	Average	2.60	2.40	2.60	2.40	2.60	2.40	2.60	2.40	2.60	2.40	1.80	1.80	1.80			
	CO3	Apply defining methods and Go Interfaces																	
	CO4	Use Go routines and Channels																	
	CO5	Explore Go Packages																	

Class		TYBCA	Course Outcomes	Program Outcomes										PSOs					
Subject Code	Subject Name	BCA-363		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3			
Semester No	Teacher Name	VI	DARSHANA GANDHI	CO1	3	2	3	2	3	2	3	2	3	2	3	3	3	3	
Course Outcomes		CO2	CO3	CO4	2	3	2	3	2	3	2	3	2	3	2	3	0	0	0
	CO1	Concepts	CO5	3	2	3	2	3	2	3	2	3	2	3	2	0	0	0	
	CO2	Management Schedule various activities in	Average	2.60	2.40	2.60	2.40	2.60	2.40	2.60	2.40	2.60	2.40	1.60	1.60	1.60			
	CO3	Track a project and manage changes																	
	CO4	Apply Agile Project Management concepts																	
	CO5	decision making																	

Class		TYBCA	Course Outcomes	Program Outcomes										PSOs				
Subject Code	Subject Name	BCA-364		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3		
Semester No	Teacher Name	VI	NIVEDITA WAGHMARE	CO1	2	3	2	3	2	3	3	2	3	2	3	3	3	3
Course Outcomes		CO2	CO3	CO4	2	3	2	3	2	3	3	2	3	2	3	0	0	0
	CO1	Describe MIS, BPR, EMS	CO5	2	3	3	3	2	3	3	2	3	2	3	0	0	0	
	CO2	Compare MIS with BPR, DSS and EMS	Average	2.00	3.00	2.20	2.60	2.40	2.60	2.60	2.40	2.60	#DIV/0!	1.60	1.60	1.60		

	CO3	application
	CO4	and service sectors
	CO5	

Class		TYBCA	Course Outcomes	Program Outcomes										PSOs		
Subject Code	BCA-365			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name	Internet of Things (IoT)	CO1	2	2	2	2	2	2	2	2	2	2	2	3	3	3
Semester No	VI	CO2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Teacher Name	SHAHEEN SHAIKh	CO3	2	3	2	2	2	2	2	2	2	2	2	2	2	2
Course Outcomes		CO4	2	2	2	2	2	2	2	2	2	2	2	0	0	0
	CO1	Define Embedded Systems and the Internet of Th	CO5	2	3	3	3	3	3	3	3	3	3	0	0	0
	CO2	Apply enabling technologies for developing IoT s	Average	2.00	2.40	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	1.40	1.40	1.40
	CO3	Design simple IoT applications														
	CO4	Analyze protocols for communication among IoT devices														
	CO5	Describe cloud-based IoT systems														

Class		TYBCA	Course Outcomes	Program Outcomes										PSOs		
Subject Code	BCA-366			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name	Laboratory (Android Programming)	CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Semester No	VI	CO2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Teacher Name	SONALI AVHAD	CO3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Course Outcomes		CO4	3	3	3	3	3	3	3	3	3	3	3	0	0	0
	CO1	applications	CO5													
	CO2	Platform	Average	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.00	2.00	2.00
	CO3	involving data storage in SQLite database														
	CO4	applications														
	CO5															

Class		TYBCA	Course Outcomes	Program Outcomes										PSOs		
Subject Code	BCA-367			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name	Laboratory (Programming in GO and IoT)	CO1	2	2	2	2	2	2	2	2	2	2	2	3	3	3
Semester No	VI	CO2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Teacher Name	SUVARNA PARDESHI	CO3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Course Outcomes		CO4	3	3	3	3	3	3	3	3	3	3	3	0	0	0

	CO1		CO5	2	2	2	2	2	2	2	2	2	2	0	0	0
	CO2	Channels	Average	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	1.60	1.60	1.60
	CO3															
	CO4	object oriented language														
	CO5	Design Simple IoT application														

Class		TYBCA	Course Outcomes	Program Outcomes										PSOs		
Subject Code	BCA-368			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
Subject Name	Project Laboratory		CO1	2	2	2	2	2	2	2	2	2	2	3	3	3
Semester No	VI		CO2	3	3	3	3	3	3	3	3	3	3	3	3	3
Teacher Name	NIVEDITA WAGHMARE		CO3	2	2	2	2	2	2	2	2	2	2	2	2	2
Course Outcomes			CO4													
	CO1	selected project topic	CO5													
	CO2	Apply techniques for project management	Average	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.67	2.67	2.67
	CO3	development of the project and a project report														
	CO4															
	CO5															
	CO5															

CO-PO Mapping

		Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
FY	FY	1 BCA111	2.75	2.50	2.50	2.00	2.00	2.25	2.50	2.00	2.75	2.00
		2 BCA112	2.50	2.75	2.75	3.00	3.00	2.75	2.50	2.25	2.75	2.75
		3 BCA113	1.80	1.80	1.80	1.60	2.60	2.60	1.80	1.80	2.00	2.00
		4 BCA114	2.50	2.75	2.25	2.75	3.00	2.50	2.50	2.50	3.00	2.50
		5 BCA115	3.00	3.00	3.00	3.00	2.50	2.50	2.50	2.25	2.50	2.25
		6 BCA116	3.00	3.00	3.00	3.00	2.67	2.67	2.00	2.00	2.33	2.67
		7 BCA117	2.00	2.00	2.50	2.50	2.50	3.00	2.50	2.50	3.00	3.00
		8 BCA118	2.80	2.60	2.40	2.80	2.60	2.60	2.40	2.40	2.40	2.40
		9 BCA121	2.67	2.67	2.33	2.67	2.33	2.33	2.67	2.67	2.67	2.67
		10 BCA122	2.75	2.75	2.75	3.00	2.75	2.75	2.25	2.50	2.25	2.75
		11 BCA123	2.67	2.67	2.67	2.67	2.33	2.67	3.00	2.33	2.33	2.67
		12 BCA124	2.67	2.67	2.67	3.00	2.67	2.67	2.00	2.33	2.33	3.00
		13 BCA125	3.00	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67
		14 BCA126	2.50	2.75	2.50	3.00	2.50	3.00	2.50	3.00	2.50	3.00
		15 FYBCA(SCIENCE	2.00	2.00	2.50	2.50	2.50	3.00	2.50	2.50	3.00	3.00
		16 0	2.80	2.60	2.40	2.80	2.60	2.60	2.40	2.40	2.40	2.40
SY	SY	1 Data Structures	2.67	2.67	2.33	2.67	2.33	2.33	2.67	2.67	2.67	2.67
		2 Database Mana	2.75	2.75	2.75	3.00	2.75	2.75	2.25	2.50	2.25	2.75
		3 Computer Netw	2.67	2.67	2.67	2.67	2.33	2.67	3.00	2.33	2.33	2.67
		4 Data Structures	2.67	2.67	2.67	3.00	2.67	2.67	2.00	2.33	2.33	3.00
		5 Database Mana	3.00	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67
		6 Computer Netw	2.50	2.75	2.50	3.00	2.50	3.00	2.50	3.00	2.50	3.00
		7 EVS	2.00	2.00	2.50	2.50	2.50	3.00	2.50	2.50	3.00	3.00
		8 SYBCA(SCIENCE	2.80	2.60	2.40	2.80	2.60	2.60	2.40	2.40	2.40	2.40
		9 BCA241	2.67	2.67	2.33	2.67	2.33	2.33	2.67	2.67	2.67	2.67
		10 BCA242	2.75	2.75	2.75	3.00	2.75	2.75	2.25	2.50	2.25	2.75
		11 0	2.67	2.67	2.67	2.67	2.33	2.67	3.00	2.33	2.33	2.67
		12 0	2.67	2.67	2.67	3.00	2.67	2.67	2.00	2.33	2.33	3.00
		13 BCA245	3.00	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67
		14 Python Program	2.50	2.75	2.50	3.00	2.50	3.00	2.50	3.00	2.50	3.00
		15 EVS II	2.00	2.00	2.50	2.50	2.50	3.00	2.50	2.50	3.00	3.00
		16 BCA248	2.80	2.60	2.40	2.80	2.60	2.60	2.40	2.40	2.40	2.40
	SY	1 DSE I (Program	2.67	2.67	2.33	2.67	2.33	2.33	2.67	2.67	2.67	2.67
		2 DSE-II Data min	2.75	2.75	2.75	3.00	2.75	2.75	2.25	2.50	2.25	2.75
		3 DSE III (Princip	2.67	2.67	2.67	2.67	2.33	2.67	3.00	2.33	2.33	2.67
		4 Artificial Intellig	2.67	2.67	2.67	3.00	2.67	2.67	2.00	2.33	2.33	3.00
		5 Cloud Computin	3.00	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67
		6 DSE I Laborator	2.50	2.75	2.50	3.00	2.50	3.00	2.50	3.00	2.50	3.00
		7 Laboratory (Da	2.00	2.00	2.50	2.50	2.50	3.00	2.50	2.50	3.00	3.00

TY	TY	8	Implement algo	2.80	2.60	2.40	2.80	2.60	2.60	2.40	2.40	2.40	2.40
		9	Android Progra	2.67	2.67	2.33	2.67	2.33	2.33	2.67	2.67	2.67	2.67
		10	Programming in	2.75	2.75	2.75	3.00	2.75	2.75	2.25	2.50	2.25	2.75
		11	Software Project	2.67	2.67	2.67	2.67	2.33	2.67	3.00	2.33	2.33	2.67
		12	Management In	2.67	2.67	2.67	3.00	2.67	2.67	2.00	2.33	2.33	3.00
		13	Internet of Thin	3.00	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67
		14	Laboratory (An	2.50	2.75	2.50	3.00	2.50	3.00	2.50	3.00	2.50	3.00
		15	Laboratory (Pro	3.00	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67
		16	Project Laborat	2.50	2.75	2.50	3.00	2.50	3.00	2.50	3.00	2.50	3.00

CO-PO ATTAINMENT

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
2.31	2.1	2.1	1.68	1.68	1.89	2.1	1.68	2.31	1.68
1.3	1.43	1.43	1.56	1.56	1.43	1.3	1.17	1.43	1.43
0.84	0.84	0.84	0.746667	1.213333	1.213333	0.84	0.84	0.933333	0.933333
1.7	1.87	1.53	1.87	2.04	1.7	1.7	1.7	2.04	1.7
2.04	2.04	2.04	2.04	1.7	1.7	1.7	1.53	1.7	1.53
2.52	2.52	2.52	2.52	2.24	2.24	1.68	1.68	1.96	2.24
1.68	1.68	2.1	2.1	2.1	2.52	2.1	2.1	2.52	2.52
1.605333	1.490667	1.376	1.605333	1.490667	1.490667	1.376	1.376	1.376	1.376
1.386667	1.386667	1.213333	1.386667	1.213333	1.213333	1.386667	1.386667	1.386667	1.386667
1.136667	1.136667	1.136667	1.24	1.136667	1.136667	0.93	1.033333	0.93	1.136667
1.102222	1.102222	1.102222	1.102222	0.964444	1.102222	1.24	0.964444	0.964444	1.102222
0.817778	0.817778	0.817778	0.92	0.817778	0.817778	0.613333	0.715556	0.715556	0.92
3	2.666667	2.666667	2.666667	2.666667	2.666667	2.666667	2.666667	2.666667	2.666667
1.3	1.43	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
1.04	1.04	1.3	1.3	1.3	1.56	1.3	1.3	1.56	1.56
1.904	1.768	1.632	1.904	1.768	1.768	1.632	1.632	1.632	1.632
1.813333	1.813333	1.586667	1.813333	1.586667	1.586667	1.813333	1.813333	1.813333	1.813333
1.87	1.87	1.87	2.04	1.87	1.87	1.53	1.7	1.53	1.87
1.813333	1.813333	1.813333	1.813333	1.586667	1.813333	2.04	1.586667	1.586667	1.813333
2.097778	2.097778	2.097778	2.36	2.097778	2.097778	1.573333	1.835556	1.835556	2.36
2.04	1.813333	1.813333	1.813333	1.813333	1.813333	1.813333	1.813333	1.813333	1.813333
1.7	1.87	1.7	2.04	1.7	2.04	1.7	2.04	1.7	2.04
2	2	2.5	2.5	2.5	3	2.5	2.5	3	3
2.053333	1.906667	1.76	2.053333	1.906667	1.906667	1.76	1.76	1.76	1.76
0.533333	0.533333	0.466667	0.533333	0.466667	0.466667	0.533333	0.533333	0.533333	0.533333
0.55	0.55	0.55	0.6	0.55	0.55	0.45	0.5	0.45	0.55
0.533333	0.533333	0.533333	0.533333	0.466667	0.533333	0.6	0.466667	0.466667	0.533333
1.386667	1.386667	1.386667	1.56	1.386667	1.386667	1.04	1.213333	1.213333	1.56
3	2.666667	2.666667	2.666667	2.666667	2.666667	2.666667	2.666667	2.666667	2.666667
1.3	1.43	1.3	1.56	1.3	1.56	1.3	1.56	1.3	1.56
0.933333	0.933333	1.166667	1.166667	1.166667	1.4	1.166667	1.166667	1.4	1.4
1.904	1.768	1.632	1.904	1.768	1.768	1.632	1.632	1.632	1.632
2.666667	2.666667	2.333333	2.666667	2.333333	2.333333	2.666667	2.666667	2.666667	2.666667
2.456667	2.456667	2.456667	2.68	2.456667	2.456667	2.01	2.233333	2.01	2.456667
2.097778	2.097778	2.097778	2.097778	1.835556	2.097778	2.36	1.835556	1.835556	2.097778
2.382222	2.382222	2.382222	2.68	2.382222	2.382222	1.786667	2.084444	2.084444	2.68
0.92	0.817778	0.817778	0.817778	0.817778	0.817778	0.817778	0.817778	0.817778	0.817778
1.3	1.43	1.3	1.56	1.3	1.56	1.3	1.56	1.3	1.56
0.4	0.4	0.5	0.5	0.5	0.6	0.5	0.5	0.6	0.6

1.456	1.352	1.248	1.456	1.352	1.352	1.248	1.248	1.248	1.248
1.813333	1.813333	1.586667	1.813333	1.586667	1.586667	1.813333	1.813333	1.813333	1.813333
1.87	1.87	1.87	2.04	1.87	1.87	1.53	1.7	1.53	1.87
2.666667	2.666667	2.666667	2.666667	2.333333	2.666667	3	2.333333	2.333333	2.666667
1.813333	1.813333	1.813333	2.04	1.813333	1.813333	1.36	1.586667	1.586667	2.04
1.813333	1.813333	1.586667	1.813333	1.586667	1.586667	1.813333	1.813333	1.813333	1.813333
1.87	1.87	1.87	2.04	1.87	1.87	1.53	1.7	1.53	1.87
2.666667	2.666667	2.666667	2.666667	2.333333	2.666667	3	2.333333	2.333333	2.666667
1.813333	1.813333	1.813333	2.04	1.813333	1.813333	1.36	1.586667	1.586667	2.04

Percentage CO-PO ATTAINMENT

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
84	84	84	84	84	84	84	84	84	84
52	52	52	52	52	52	52	52	52	52
46.66667	46.66667	46.66667	46.66667	46.66667	46.66667	46.66667	46.66667	46.66667	46.66667
68	68	68	68	68	68	68	68	68	68
68	68	68	68	68	68	68	68	68	68
84	84	84	84	84	84	84	84	84	84
84	84	84	84	84	84	84	84	84	84
57.33333	57.33333	57.33333	57.33333	57.33333	57.33333	57.33333	57.33333	57.33333	57.33333
52	52	52	52	52	52	52	52	52	52
41.33333	41.33333	41.33333	41.33333	41.33333	41.33333	41.33333	41.33333	41.33333	41.33333
41.33333	41.33333	41.33333	41.33333	41.33333	41.33333	41.33333	41.33333	41.33333	41.33333
30.66667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667
100	100	100	100	100	100	100	100	100	100
52	52	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
52	52	52	52	52	52	52	52	52	52
68	68	68	68	68	68	68	68	68	68
68	68	68	68	68	68	68	68	68	68
68	68	68	68	68	68	68	68	68	68
68	68	68	68	68	68	68	68	68	68
78.66667	78.66667	78.66667	78.66667	78.66667	78.66667	78.66667	78.66667	78.66667	78.66667
68	68	68	68	68	68	68	68	68	68
68	68	68	68	68	68	68	68	68	68
100	100	100	100	100	100	100	100	100	100
73.33333	73.33333	73.33333	73.33333	73.33333	73.33333	73.33333	73.33333	73.33333	73.33333
20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20
52	52	52	52	52	52	52	52	52	52
100	100	100	100	100	100	100	100	100	100
52	52	52	52	52	52	52	52	52	52
46.66667	46.66667	46.66667	46.66667	46.66667	46.66667	46.66667	46.66667	46.66667	46.66667
68	68	68	68	68	68	68	68	68	68
100	100	100	100	100	100	100	100	100	100
89.33333	89.33333	89.33333	89.33333	89.33333	89.33333	89.33333	89.33333	89.33333	89.33333
78.66667	78.66667	78.66667	78.66667	78.66667	78.66667	78.66667	78.66667	78.66667	78.66667
89.33333	89.33333	89.33333	89.33333	89.33333	89.33333	89.33333	89.33333	89.33333	89.33333
30.66667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667
52	52	52	52	52	52	52	52	52	52

20	20	20	20	20	20	20	20	20	20
52	52	52	52	52	52	52	52	52	52
68	68	68	68	68	68	68	68	68	68
68	68	68	68	68	68	68	68	68	68
100	100	100	100	100	100	100	100	100	100
68	68	68	68	68	68	68	68	68	68
60.44444	68	59.5	68	59.5	59.5	68	68	68	68
74.8	68	74.8	68	74.8	62.33333	61.2	56.66667	61.2	62.33333
88.88889	100	100	100	87.5	100	112.5	87.5	87.5	100
72.53333	65.93939	72.53333	68	72.53333	60.44444	54.4	52.88889	63.46667	68

CO-PSO MAPPING

CO-PSO ATTAINMENT

Percentage CO-PSO ATTAINMENT

	Course	PSO1	PSO2	PSO3
FY	1 BCA111	3.00	3.00	3.00
	2 BCA112	2.25	2.25	2.25
	3 BCA113	1.80	1.80	1.80
	4 BCA114	2.25	2.25	2.25
	5 BCA115	2.25	2.25	2.25
	6 BCA116	3.00	3.00	3.00
	7 BCA117	2.33	2.33	2.33
	8 BCA118	1.40	1.40	1.40
	9 BCA121	2.33	2.33	2.33
	10 BCA122	2.25	2.25	2.25
	11 BCA123	2.33	2.33	2.33
	12 BCA124	2.67	2.67	2.67
	13 BCA125	3.00	3.00	3.00
	14 BCA126	2.25	2.25	2.25
	15 FYBCA(SCI	1.40	1.40	1.40
	16 0	2.33	2.33	2.33
SY	1 Data Struc	2.25	2.25	2.25
	2 Database I	2.33	2.33	2.33
	3 Computer	2.67	2.67	2.67
	4 Data Struc	3.00	3.00	3.00
	5 Database I	2.25	2.25	2.25
	6 Computer	1.40	1.40	1.40
	7 EVS	2.33	2.33	2.33
	8 SYBCA(SCI	2.25	2.25	2.25
	9 BCA241	2.33	2.33	2.33
	10 BCA242	2.67	2.67	2.67
	11 0	3.00	3.00	3.00
	12 0	2.25	2.25	2.25
	13 BCA245	2.25	2.25	2.25
	14 Python Pro	2.33	2.33	2.33
	15 EVS II	2.67	2.67	2.67
	16 BCA248	3.00	3.00	3.00
1 DSE I (Prog	2.25	2.25	2.25	
2 DSE-II Data	3.00	3.00	3.00	
3 DSE III (Pri	2.25	2.25	2.25	
4 Artificial In	2.25	2.25	2.25	
5 Cloud Com	2.33	2.33	2.33	
6 DSE I Labo	2.67	2.67	2.67	

Course	PSO1	PSO2	PSO3
BCA111	2.52	2.52	2.52
BCA112	1.17	1.17	1.17
BCA113	0.84	0.84	0.84
BCA114	1.53	1.53	1.53
BCA115	1.53	1.53	1.53
BCA116	2.52	2.52	2.52
BCA117	1.96	1.96	1.96
BCA118	0.802667	0.802667	0.802667
BCA121	1.213333	1.213333	1.213333
BCA122	0.93	0.93	0.93
BCA123	0.964444	0.964444	0.964444
BCA124	0.817778	0.817778	0.817778
BCA125	3	3	3
BCA126	1.17	1.17	1.17
FYBCA(SCIENCE)	0.728	0.728	0.728
0	1.586667	1.586667	1.586667
Data Structures	1.53	1.53	1.53
Database Manag	1.586667	1.586667	1.586667
Computer Netw	1.813333	1.813333	1.813333
Data Structures I	2.36	2.36	2.36
Database Manag	1.53	1.53	1.53
Computer Netw	0.952	0.952	0.952
EVS	2.333333	2.333333	2.333333
SYBCA(SCIENCE)	1.65	1.65	1.65
BCA241	0.466667	0.466667	0.466667
BCA242	0.533333	0.533333	0.533333
0	0.6	0.6	0.6
0	1.17	1.17	1.17
BCA245	#REF!	2.25	2.25
Python Program	1.213333	1.213333	1.213333
EVS II	1.244444	1.244444	1.244444
BCA248	2.04	2.04	2.04
DSE I (Programm	1.53	1.53	1.53
DSE-II Data mini	2.04	2.04	2.04
DSE III (Principle	1.17	1.17	1.17
Artificial Intellige	2.25	2.25	2.25
Cloud Computing	2.333333	2.333333	2.333333
DSE I Laboratory	2.382222	2.382222	2.382222

Course	PSO1	PSO2	PSO3
BCA111	84	84	84
BCA112	52	52	52
BCA113	46.66667	46.66667	46.66667
BCA114	68	68	68
BCA115	68	68	68
BCA116	84	84	84
BCA117	84	84	84
BCA118	57.33333	57.33333	57.33333
BCA121	52	52	52
BCA122	41.33333	41.33333	41.33333
BCA123	41.33333	41.33333	41.33333
BCA124	30.66667	30.66667	30.66667
BCA125	100	100	100
BCA126	52	52	52
FYBCA(SCI	52	52	52
0	68	68	68
Data Struc	68	68	68
Database I	68	68	68
Computer	68	68	68
Data Struc	78.66667	78.66667	78.66667
Database I	68	68	68
Computer	68	68	68
EVS	100	100	100
SYBCA(SCI	73.33333	73.33333	73.33333
BCA241	20	20	20
BCA242	20	20	20
0	20	20	20
0	52	52	52
BCA245	#REF!	100	100
Python Pro	52	52	52
EVS II	46.66667	46.66667	46.66667
BCA248	68	68	68
DSE I (Prog	68	68	68
DSE-II Data	68	68	68
DSE III (Pri	52	52	52
Artificial In	100	100	100
Cloud Com	100	100	100
DSE I Labo	89.33333	89.33333	89.33333

TY	7	Laboratory	3.00	3.00	3.00
	8	Implement	2.25	2.25	2.25
	9	Android Pr	3.00	3.00	3.00
	10	Programm	2.25	2.25	2.25
	11	Software P	2.25	2.25	2.25
	12	Managem	2.33	2.33	2.33
	13	Internet of	2.67	2.67	2.67
	14	Laborator	3.00	3.00	3.00
	15	Laboratory	2.25	2.25	2.25
	16	Project Lab	2.25	2.25	2.25

Laboratory (Data	2.36	2.36	2.36
Implement algor	2.01	2.01	2.01
Android Program	0.92	0.92	0.92
Programming in	1.17	1.17	1.17
Software Project	0.45	0.45	0.45
Management Inf	1.213333	1.213333	1.213333
Internet of Thing	1.813333	1.813333	1.813333
Laboratory (And	2.04	2.04	2.04
Laboratory (Prog	2.25	2.25	2.25
Project Laborato	1.53	1.53	1.53

Laboratory	78.66667	78.66667	78.66667
Implement	89.33333	89.33333	89.33333
Android Pr	30.66667	30.66667	30.66667
Programm	52	52	52
Software P	20	20	20
Managem	52	52	52
Internet of	68	68	68
Laborator	68	68	68
Laboratory	100	100	100
Project Lab	68	68	68