



KONGU ENGINEERING COLLEGE, PERUNDURAI, ERODE - 638 060

(AUTONOMOUS)

BOARD OF B.Sc CT-UG

Approval for Value Added Course (One /Two Credits) - (Consolidated)



Date: 28.9.2022

List of Value Added Course (One credit) in the academic Year 2022-2023 Odd/Even Semester

Sl. No	Regulations	Course Name with credits	Course code (for Repeated Course) / New Course	Name of the Co-ordinators (Max:2)	Experts details from Industry (if any)	Whether Expert(s) is/are Alumni/ Alumnae (yes/no)	Lecture Hours	Practical Hours	Total Hours	Specify Fee/Per Batch / Fee/ Per Student	Fee Amount (Fee/Batch or Fee/Student)	Course Duration		Offered to (Year/Sem/ Branch of the student)
												From	To	
1	2020	Graphic designing using Adobe illustrator and Adobe Photoshop	New Course	Dr.C.N.Vaniha Dr.K.Sathya	Mr.S.Senthikumar Graphic Designer PIZO Designs Karur	Yes	10	20	30	Rs.200 Per student	Rs.4,000	29.9.22	11.11.22	III/IV/CSD,IS,SS III/IV/CSD,IS,SS
2	2020	Programming with Golang	20VC017	M.N.Kavitha S.S.Saranya	Nil	Nil	15	15	30	Nil	Nil	29.9.22	28.11.22	III/IV/CSD,IS,SS III/IV/CSD,IS,SS

These courses shall be approved/ratified in the BOS meeting.

Faculty In-charge
[Dr. S. KARUNAKARAN]

HOD
[Dr. P. NATEESAN]

CCO/Academic
[Signature]

Principal
[Signature]

End:

- Minutes of Internal BOS for approval of the above courses
- Details of each course mentioned above as per the given format.
- Copy of the Syllabus of the courses



KONGU ENGINEERING COLLEGE
(Autonomous)
PERUNDURAI – 638060
INTERNAL QUALITY ASSURANCE CELL

CDC-04B, Rev.0, 01.04.2021



CERT No.:99-100-20788
ISO 9001 : 2015

Approval for Value Added Course (One / Two Credits)

Academic Year: 2021-2022 EVEN Semester

DEPARTMENT OF COMPUTER TECHNOLOGY-UG

Date: 04.05.2022

1.	Academic Year	:	2021-2022	Semester : ODD / EVEN			
2.	Course Title	:	Data Analytics using R	Credit(s): One / Two			
3.	Type of Course	:	Already Offered Course / Updated Course / New Course				
	• If "Already offered course",	:	Course Code:	Version:			
4.	Course Coordinator(s)	:	1. S. Poorani 2. P. Gokila Brindha				
5.	Course offered by	:	Internal faculty / External experts				
6.	Name and designation of external resource persons	:	NIL				
7.	Details about external organization	:	NA				
			Course fee for external experts	Max. number of students/Batch		Course fee / student	
			Nil	50		Nil	
9.	No. of days	Period		No. of hours		Venue/ Meet ID	
		From	To	Lecture	Practical		Total
	15	10.05.2022	30.05.2022	10	20	30	Google Meet
10.	Pre-requisites for offering the course	:	Fundamentals in Programming				
11.	Course offered to	:	Programme	Branch	Year/Semester		
			B.Sc	CSD,IS & SS	II & IV		
12.	Course Main Contents	:	Day 1	R Installation, Environment and R objects.			
			Day 2	R operators : a) arithmetic b) Relational c) Logical d) Assignment operator.			
			Day 3	R Decision Making statements: a) if statement, if –else statement , if – else if statement			

			b)switch statement.
		Day 4	R Looping Statements : a)Repeat loop b) for loop c) While loop d) break and next statement.
		Day 5	R Functions : a) Built-in functions b) User defined functions.
		Day 6	Vector sorting.
		Day 7	List: a) Creating a list and add/delete element to it b) Merging List c) converting list to Vector.
		Day 8	Matrix operations. a) Transpose of the matrix b) addition c) subtraction.
		Day 9	Array operations: Creating ,accessing and manipulating array elements.
		Day 10	R- Factors: a) Creating factors b) Generating factor levels.
		Day 11	Data Frame : a) Creating and Accessing DataFrame b) Built in DataFrame functions c) Joining and Merging DataFrame
		Day 12	Manipulation of Strings in R.
		Day 13	Loading and handling Data in R.
		Day 14	Descriptive Statistics: Mean, Median, mode, Standard deviation, Correlation.
		Day 15	Visualization in R using Pie Charts, Histograms, Bar Charts.
13.	Course Outcomes	Assignment / Project / Case Study/Others: (if any)	
		After completing the course the student will be able to:	
		• Write simple programs in R • Develop R scripts using different data structures • Represent data in different data visualization forms	
14.	Course Assessment (Min. 2)	S. No.	Type
		1	Practical Assessment
		2	Theory Assessment
			Max. Marks
			50
			50
		Total	100 Marks

15.	Verified that the content of this course is not offered to students partially/fully in regular curriculum of respective programme of the student. Certify that the course content, credits and grade are approved in the BOS meeting or approved by internal BOS members and will be ratified in the next BOS meeting	<i>[Signature]</i> (Signature of the HoD after verification)
16.	Any other details	: ---

The above proposal may kindly be approved.

1. *[Signature]*
 2. *[Signature]*
 Course co-ordinator(s)

[Signature]
 HOD

[Signature] 8/5/2022
 Chief Coordinator Academic

Encl:

1. Copy of the syllabus of the course
2. Financial proposal from the external organization (if any)

Preamble	
Unit - I	R Introduction :
	5
R Installation and Environment – R operators : arithmetic - Relational - Logical - Assignment operator – Decision Making statements : if statement- if –else statement - switch statement – Numbers and Vectors – Lists – Matrices and Arrays – Factors –Data Frames – Functions – Function creation.	
Unit - II	Packages and Statistical Analysis
	5
Installing and Loading Packages –Importing and Exporting Datasets – Axes – colors – fonts – size – symbols – Histogram – Q-Q plot – box plot – scatter plot – Descriptive statistics: Mean-Median, mode, Standard deviation, Correlation.	

List of Exercises / Experiments:

1.	Exploring R Installation and Environment.
2.	Implementation of R operators : a) arithmetic b) Relational c) Logical d)Assignment operator
3.	Implementation of R Decision Making statements: a) if statement, if –else statement , if – else if statement b)switch statement.
4.	Implementation of R Looping Statements : a)Repeat loop b) for loop c) While loop d) break and next statement.
5.	Implementation of R Functions : a) Built-in functions b) User defined functions.
6.	Implementation of List: a) Create a list and add/delete element to it b) Merging List c) converting list to Vector.
7.	Implementation of Matrix operations: a) Transpose of the matrix b) addition c) subtraction.
8.	Implementation of Array operations: Creating ,accessing and manipulating array elements.
9.	Data Frame : a) Create and Access DataFrame b) Built in DataFrame functions c) Joining and Merging DataFrame.
10.	Visualization in R using Pie Charts, Histograms, Bar Charts.

Lecture: 10, Practical:20, Total: 30

REFERENCES:

1.	Sandip Rakshit, 'R Programming for Beginners' McGraw Hill Education(India).2017.
2.	Seema Acharya, "Data Analytics using R", McGraw Hill Education(India).2018.
3.	https://www.tutorialspoint.com/r/r_tutorial.pdf

COURSE OUTCOMES:

On completion of the course, the students will be able to

	BT Mapped (Highest Level)
CO1 Write simple programs in R	Applying (K3)
CO2 Develop R Scripts using different data structures	Applying(K3) Precision(S3)
CO3 Represent data in different visualization forms.	Applying(K3) Precision(S3)

Mapping of COs with POs and PSOs

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1	2	2		2								1	1
CO2	2		2										1	1
CO3	1	2	2		2								2	1

1 – Slight, 2 – Moderate, 3 – Substantial, BT- Bloom's Taxonomy

ASSESSMENT PATTERN

Test / Bloom's Category*	Remembering (K1) %	Understanding (K2) %	Applying (K3) %	Analyzing (K4) %	Evaluating (K5) %	Creating (K6) %	Total %
MCQ (50 Marks)	20	50	30				100
Practical (50 Marks)	10	30	70				100

* As per the approval

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DEPARTMENT OF COMPUTER TECHNOLOGY –UG

ONE CREDIT COURSE – EVEN SEMESTER 2021-2022
20VC042 - DATA ANALYTICS USING R
ATTENDANCE PERCENTAGE

DATE: 04.07.2022

NUMBER OF HOURS CONDUCTED: 30

S.No.	ROLL No.	NAME OF THE STUDENT	PERCENTAGE OF ATTENDANCE
1	20BIRO01	AARTHI N	70
2	20BIRO03	AGALYA S	93.3
3	20BIRO08	BOOPENDHIRAN M	93.3
4	20BIRO11	DEEPTHI V	80
5	20BIRO15	DIVYA DHARSHINI S	86.7
6	20BIRO24	KARTHIKA R T	93.3
7	20BIRO31	MURUGANANTH M	83.3
8	20BIRO33	NANTHITHA S	100
9	20BSRO12	DHANUSHREE U	86.7
10	20BSRO21	HARINI D	90
11	20BSRO26	KAVINA S	93.3
12	20BSRO37	NIVETHA R	96.7
13	20BSRO40	RAMYA V	83.3
14	20BSRO42	REENA SRI S	96.7
15	20BSRO46	SARANYA T	100
16	20BSRO53	SNEHA A L	86.7

S. Perumal / 5-7-2022 [S. Perumal]

Course Incharge

P. G. G. [P. G. G. G. G. G.]

P. N. S. S. S.
HOD/CT-UG

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DEPARTMENT OF COMPUTER TECHNOLOGY –UG
ONE CREDIT COURSE – EVEN SEMESTER 2021-2022
20VC042 - DATA ANALYTICS USING R
MARK STATEMENT

DATE: 04.07.2022

S.No.	Roll No.	Name of the Student	Theory Marks (out of 50)	Practical Marks (out of 50)	Total (100 Marks)
1.	20BIR001	AARTHI N	38	33	71
2.	20BIR003	AGALYA S	30	45	75
3.	20BIR008	BOOPENDHIRAN M	26	33	59
4.	20BIR011	DEEPTHI V	25	29	54
5.	20BIR015	DIVYA DHARSHINI S	29	43	72
6.	20BIR024	KARTHIKA R T	41	46	87
7.	20BIR031	MURUGANANTH M	25	37	62
8.	20BIR033	NANTHITHA S	42	47	89
9.	20BSR012	DHANUSHREE U	34	49	83
10.	20BSR021	HARINI D	31	42	73
11.	20BSR026	KAVINA S	32	37	69
12.	20BSR037	NIVETHA R	26	37	63
13.	20BSR040	RAMYA V	27	43	70
14.	20BSR042	REENA SRI S	35	43	78
15.	20BSR046	SARANYA T	31	47	78
16.	20BSR053	SNEHA A L	27	44	71

S. Perumani / 5-7-2022 [S. Perumani]
P. Gokila [P. Gokila Bindha]
Course Incharge

V. neelgaj
HOD/CT-UG

