To

The Principal,

Vaagdevi College of Engineering,

Bollikunta, Warangal.

Sub: Request to Conduct a Workshop on CO-PO Mapping & CO Assessment Process-Reg.
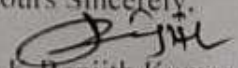
Respected Sir,

I am writing to request your approval to organize a Workshop on CO-PO Mapping & CO Assessment Process at VCE. The workshop aims to enhance faculty membersunderstanding of aligning Course Outcomes (COs) with Program Outcomes (POs) and assessing their attainment.

Proposed Dates: 07-08-2023 to 12-08-2023
Duration: One week (5 days)

I kindly request your support in approving the schedule and providing necessary logistical assistance for the workshop. Your approval will be greatly appreciated to ensure the successful execution of this initiative.
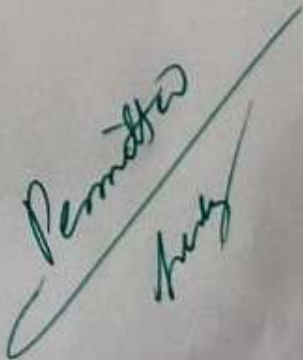
Thanking you.

Yours Sincerely,

Dr.K.Ranjith Kumar

Asst. Prof.

EEE Department

Vaagdevi College of Engineering

(AUTONOMOUS)

Approved by AICTE & Affiliated to JNTUH, Hyderabad

Bollikunta, Khila Warangal (Mandal)
Warangal Urban (Dist.)
Telangana – 506 005

DEPARTMENT OF ELECTRICAL AND ELECTRONICS
ENGINEERING

One week workshop (7th to 12th August 2023) on

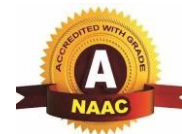## CO-PO MAPPING & CO ASSESSMENT PROCESS

Faculty Coordinator: Dr.K.Ranjith Kumar
Convener & HoD: Mr.P.Purnachander Rao

RESOURCE PERSON
Speaker: Dr.K.Ranjith Kumar

Vaagdevi College of Engineering
UGC Autonomous
Bollikunta, Khila Warangal (Mandal), Warangal Urban-506005

Program Schedule
CO-PO Mapping & CO Assessment Process (7th to 12th August 2023)

Organized by

Department of Electrical and Electronics Engineering

One-Week Schedule for CO-PO Mapping & CO Assessment Process Workshop

Workshop Overview: The **CO-PO Mapping & CO Assessment Process** workshop will span one week, offering a comprehensive approach to understanding and implementing Course Outcomes (COs), Program Outcomes (POs), and their assessment methods. The week will include theoretical sessions, practical exercises, group discussions, and hands-on activities to help faculty members integrate the concepts effectively into their teaching practices.

Day 1: Introduction to CO-PO Mapping and Assessment (07-08-2023)

Objective: To introduce participants to Course Outcomes (COs) and Program Outcomes (POs), and their significance in academic curriculum design.

Time	Topic	Details
9:00 AM - 9:30 AM	Registration & Welcome	Overview of the workshop and objectives.
9:30 AM - 10:45 AM	Introduction to Course Outcomes (COs) & Program Outcomes (POs)	Understanding COs and POs in the context of curriculum design.
10:45 AM - 11:00 AM	Break	Light refreshments.
11:00 AM - 12:30 PM	Importance of CO-PO Mapping in Higher Education	Discussion on how CO-PO mapping ensures alignment with program goals.
12:30 PM - 1:30 PM	Lunch Break	Networking and informal discussions.
1:30 PM - 3:00 PM	Best Practices for Defining Clear and Measurable COs	How to write effective and measurable Course Outcomes.
3:00 PM - 4:00 PM	Group Activity: CO-PO Mapping Case Study	Hands-on exercise to map COs to POs for a sample course.

End of Day 1 – Participants will gain an understanding of the significance of COs and POs, and begin applying CO-PO mapping techniques.

Day 2: Techniques for Effective CO-PO Mapping (08-08-2023)

Objective: To provide detailed techniques for mapping Course Outcomes to Program Outcomes and ensure alignment.

Time	Topic	Details
9:00 AM - 9:30 AM	Recap of Day 1 and Q&A	Addressing any doubts or clarifications from Day 1.
9:30 AM - 11:00 AM	Techniques for CO-PO Mapping: Step-by-Step Approach	Detailed walk-through of CO-PO mapping techniques, using Bloom's Taxonomy.
11:00 AM - 11:15 AM	Break	Light refreshments.
11:15 AM - 12:30 PM	Mapping Complex Courses to Multiple POs	Discussing strategies for interdisciplinary and complex courses.
12:30 PM - 1:30 PM	Lunch Break	Networking and informal discussions.
1:30 PM - 3:00 PM	Group Activity: Mapping COs to POs for Interdisciplinary Courses	Mapping COs of complex courses to multiple POs in groups.
3:00 PM - 4:00 PM	Discussion: Challenges in CO-PO Mapping & Solutions	Open discussion on difficulties and solutions from mapping exercises.

End of Day 2 – Faculty members will gain a solid understanding of techniques for effective CO-PO mapping, including for complex courses.

Day 3: CO Assessment Process - Overview and Techniques (09-08-2023)

Objective: To introduce the CO assessment process, including both direct and indirect assessment methods.

Time	Topic	Details
9:00 AM - 9:30 AM	Recap of Day 2 and Q&A	Addressing questions and summarizing key takeaways.
9:30 AM - 11:00 AM	Introduction to CO Assessment	Overview of assessment methods, focusing on direct and indirect assessment.
11:00 AM - 11:15 AM	Break	Light refreshments.
11:15 AM - 12:30 PM	Assessment Tools for Measuring CO Attainment	Introduction to rubrics, grading systems, and online assessment platforms.
12:30 PM - 1:30 PM	Lunch Break	Networking and informal discussions.
1:30 PM - 3:00 PM	Designing Effective CO Assessments	Workshop on designing rubrics, quizzes, assignments, and projects for assessing COs.

Time	Topic	Details
3:00 PM - 4:00 PM	Group Activity: Creating Assessment Rubrics	Hands-on session for creating rubrics tailored to COs of specific courses.

End of Day 3 – Participants will learn how to assess Course Outcomes through various tools and techniques, including rubrics and direct assessments.

Day 4: Aligning CO Assessment with Program Outcomes (10-08-2023)

Objective: To explore how CO assessment results are linked to Program Outcomes, and how they influence continuous improvement.

Time	Topic	Details
9:00 AM - 9:30 AM	Recap of Day 3 and Q&A	Reviewing the CO assessment process and answering questions.
9:30 AM - 11:00 AM	Connecting CO Assessment to Program Outcomes	Discussing the relationship between CO assessments and PO achievement.
11:00 AM - 11:15 AM	Break	Light refreshments.
11:15 AM - 12:30 PM	Continuous Improvement through CO-PO Mapping and Assessment	How assessment results guide curriculum improvements and teaching strategies.
12:30 PM - 1:30 PM	Lunch Break	Networking and informal discussions.
1:30 PM - 3:00 PM	Aligning CO Assessment with Program Accreditation Criteria	Practical session on aligning CO-PO assessments with accreditation standards.
3:00 PM - 4:00 PM	Group Activity: Designing a CO-PO Assessment Framework	Creating a framework that aligns assessment with program goals.

End of Day 4 – Participants will gain skills in aligning CO assessments with broader Program Outcomes and accreditation criteria.

Day 5: Tools and Technologies for CO-PO Mapping & Assessment (11-08-2023)

Objective: To introduce digital tools and technologies for CO-PO mapping and assessment.

Time	Topic	Details
9:00 AM - 9:30 AM	Recap of Day 4 and Q&A	Reviewing alignment with POs and challenges with assessment.

Time	Topic	Details
9:30 AM - 11:00 AM	Digital Tools for CO-PO Mapping & Assessment	Introduction to LMS (Learning Management Systems), Rubric Makers, and Analytics Platforms.
11:00 AM - 11:15 AM	Break	Light refreshments.
11:15 AM - 12:30 PM	Hands-on Session: Using Tools for CO-PO Mapping	Practical session using digital tools for mapping COs to POs.
12:30 PM - 1:30 PM	Lunch Break	Networking and informal discussions.
1:30 PM - 3:00 PM	Hands-on Session: Using Tools for CO Assessment	Practical session using digital tools for CO assessment (e.g., rubrics).
3:00 PM - 4:00 PM	Group Activity: Implementing Technology in CO-PO Mapping	Group work on integrating tools into real-world CO-PO mapping and assessment.

End of Day 5 – Participants will become proficient in using digital tools for CO-PO mapping and assessment processes.

## Day 6: Hands-on CO-PO Mapping and Assessment Workshop (12-08-2023)

Objective: To provide participants with a full-day practical workshop on creating and assessing CO-PO mappings for their courses.

Time	Topic	Details
9:00 AM - 12:00 PM	Hands-on Session: Mapping COs to POs for Specific Courses	Practical application: Participants work on CO-PO mapping for their courses.
12:00 PM - 1:00 PM	Lunch Break	Networking and informal discussions.
1:00 PM - 3:00 PM	Hands-on Session: Creating Assessment Frameworks	Creating detailed assessment rubrics and tools for COs.
3:00 PM - 4:00 PM	Review and Peer Feedback	Participants review each other's work and provide feedback.

End of Day 6 – Participants will finalize their CO-PO mappings and assessment frameworks, and receive feedback from peers and facilitators.
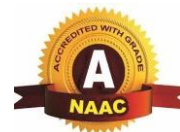
Vaagdevi College of Engineering
UGC Autonomous
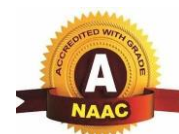### Bollikunta, Khila Warangal (Mandal), Warangal Urban-506005

Department of Electrical and Electronics Engineering
CO-PO Mapping & CO Assessment Process (7th to 12th August 2023)
Participants list

S.No.	Name of the Participant	Email-ID	Phone Number
1	Dr.P.Sadanandam	sadanandam_p@vaagdevi.edu.in	9948283769
2	Dr.Ch.Raju	raju_ch@vaagdevi.edu.in	9553503231
3	Mr.B.Nagaraju	nagaraju_b@vaagdevi.edu.in	9949360215
4	Mr.V.Satyanarayana	satyanarayana_v@vaagdevi.edu.in	8341384659
5	Mr..T.Rajesh	thota.rajesh006@gmail.com	9908629287
6	Mrs.P.Thanuja	thanuja_p@vaagdevi.edu.in	8886663209
7	Mr.K.Prakash Chary	prakashchary_k@vaagdevi.edu.in	9700686970
8	Mr.K.Balakrishna	balakrishna_k@vaagdevi.edu.in	9966265012
9	Mr.Khajafarid	khajafarid_md@vaagdevi.edu.in	9100763867
10	Mrs.R.Mounika	rudrojumounika@gmail.com	8801959078
11	Mrs.G.Ramya	orugondaramya@gmail.com	9701619105
12	Mrs.J.Sreelatha	jakkulasreelatha29@gmail.com	9553574766
13	Mrs.K.Anitha	karuanitha333@gmail.com	7794928383
14	Mr.G.Praveen Kumar	praveen_g @vaagdevi.edu.in	8179728851
15	Mr.G.Punnam Chander	punnam_g@vaagdevi.edu.in	9000630795
16	Mr.E.Rajeshwar Rao	rajeshwarrao-e@vaagdevi.edu.in	8328196662
17	Mr.G.Sandeep Reddy	sandeep_g@vaagdevi.edu.in	8500332211
18	Ms.N.Jyothsna	jyothsna_n@vaagdevi.edu.in	6309549319
19	Ms.Sameena	sameena _s@vaagdevi.edu.in	8186007747
20	Mr.Amarender	amarender_r @vaagdevi.edu.in	8121981214

CO-PO Mapping & CO Assessment Process(7th to 12th August 2023)

Participants Attendance

S.No.	Name of the Participant	07-08-2023	08-08-2023	09-08-2023	10-08-2023	11-08-2023	12-08-2023
1	Dr.P.Sadanandam						
2	Dr.Ch.Raju						
3	Mr.B.Nagaraju						
4	Mr.V.Satyanarayana						
5	Mr..T.Rajesh						
6	Mrs.P.Thanuja						
7	Mr.K.Prakash Chary						
8	Mr.K.Balakrishna						
9	Mr.Khajafarid						
10	Mrs.R.Mounika						
11	Mrs.G.Ramya						
12	Mrs.J.Sreelatha						
13	Mrs.K.Anitha						
14	Mr.G.Praveen Kumar						
15	Mr.G.PunnamChander						
16	Mr.E.Rajeshwar Rao						
17	Mr.G.Sandeep Reddy						
18	Ms.N.Jyoshna						
19	Ms.Sameena						
20	Mr.Amarender						

Vaagdevi College of Engineering
UGC Autonomous
Bollikunta, Khila Warangal (Mandal), Warangal Urban-506005

Report on
CO-PO Mapping & CO Assessment Process (7th to 12th August 2023)

Organized by

Department of Electrical and Electronics Engineering

About Electrical and Electronics Engineering Department

The Department of Electrical & Electronics Engineering offers U.G, P.G and PhD programs in Electrical Engineering Discipline. U.G program in Electrical and Electronics Engineering was started in the year 1998. The UG program has been accredited two times by the NBA in the years 2008 and 2017 respectively. Department is offering two P.G programs includes Power Electronics and Power Systems Control & Automation. Power Elections was started in 2004 and Power Systems Control & Automation was started in the year 2012. In the year 2020, Department is recognized as Research Centre by Jawaharlal Nehru Technological University Hyderabad. Department is also offering PhD under JNTUH.

Date: 7th to 12th August 2023   **Venue:** B-114

Time   **:**   10:00 PM – 4.00 PM

Number of attendees: 20

Speaker: Dr.K.Ranjith Kumar

Faculty Coordinator: Dr.K.Ranjith Kumar

Convener & HoD: Mr.P.Purnachander Rao

Title of the event: CO-PO Mapping & CO Assessment Process

Event Description:

1. Introduction

The workshop on **CO-PO Mapping & CO Assessment Process** was organized to familiarize faculty members with the importance of aligning **Course Outcomes (COs)** with **Program Outcomes (POs)** in the context of higher education institutions. This alignment ensures that students acquire the required knowledge, skills, and attitudes that contribute to the overall

objectives of the program. Additionally, the workshop provided insight into how the assessment process can help measure the attainment of these outcomes.

2. Objectives of the Workshop

The primary objectives of the workshop were:

- To understand the significance of CO-PO mapping in curriculum design and teaching strategies.
- To discuss the process of mapping **Course Outcomes (COs)** to **Program Outcomes (POs)**.
- To explore best practices for assessing **Course Outcomes** and how assessment results can inform teaching practices.
- To ensure that faculty members understand how the CO-PO mapping and assessment processes contribute to accreditation requirements (e.g., NBA, NAAC).

3. Key Highlights and Discussions

3.1 Course Outcomes (COs) and Program Outcomes (POs)

The workshop began with an in-depth discussion on what **Course Outcomes (COs)** and **Program Outcomes (POs)** are, and why they are essential for the academic curriculum:

- **Course Outcomes (COs)** are specific goals related to the content delivered in a particular course. They define what students are expected to know, understand, and be able to do after completing the course.
- **Program Outcomes (POs)** are broader goals that reflect the skills, knowledge, and abilities students should have upon completing the entire program. These are aligned with the institutional goals and accreditation requirements.

The importance of clear and measurable COs was emphasized, as they directly impact the quality and effectiveness of teaching and learning.

3.2 CO-PO Mapping

The mapping of **COs to POs** helps in ensuring that the course contributes to the overall objectives of the program. The key steps involved in mapping were explained as follows:

1. **Identify the Course Outcomes (COs)**: Define clear and measurable outcomes for each course.
2. **Identify Program Outcomes (POs)**: Align the course outcomes with program-level outcomes to maintain consistency.
3. **Establish Relationships**: Map each CO to one or more POs based on how the course content supports the program's goals.

4. **Use Bloom's Taxonomy**: Ensure that the outcomes are mapped at the appropriate cognitive level (e.g., remembering, understanding, applying, analyzing, evaluating, creating).

Examples of CO-PO mappings were demonstrated through practical exercises, and participants learned how to adjust their COs to ensure full alignment with POs.

3.3 CO Assessment Process

The **CO assessment process** involves evaluating whether students have achieved the defined course outcomes. Several assessment techniques were discussed, including:

- **Direct Assessment Methods**: Tests, quizzes, assignments, projects, and lab work.
- **Indirect Assessment Methods**: Surveys, feedback, self-assessments, and peer evaluations.

The importance of using a combination of these methods to gather comprehensive data about student learning was stressed. Assessment rubrics were introduced as essential tools for measuring attainment, and participants were encouraged to develop their rubrics to suit specific course outcomes.

3.4 Tools for CO Assessment

Different tools and technologies to support CO assessment were introduced:

- **Online Platforms**: LMS (Learning Management Systems) tools like Moodle and Blackboard for tracking student performance.
- **Rubrics and Grading Systems**: Using rubrics to assess various levels of performance on assignments and projects.

3.5 Accreditation and Continuous Improvement

The alignment of CO-PO mapping and assessment with accreditation standards (e.g., NBA, NAAC) was emphasized. Proper documentation and evidence of CO-PO mapping and assessment play a crucial role in the accreditation process, ensuring that programs meet quality standards.

4. Hands-on Session

The hands-on session provided an opportunity for participants to create their own **CO-PO mapping** for a sample course. Participants worked in groups to:

- Define COs for their assigned courses.
- Map these COs to the relevant POs.
- Discuss how to assess the achievement of these COs using different assessment methods.

The practical session was well-received, with participants sharing ideas and learning from each other's experiences.

5. Discussion & Q/A

During the discussion session, faculty members asked various questions regarding challenges in CO-PO mapping and assessment:

- **Challenges with Mapping**: Some participants expressed difficulty in aligning COs with broader POs, particularly in interdisciplinary courses.
- **Assessment Issues**: Concerns were raised about the time and resources needed to assess each CO effectively, especially for large classes.

The facilitators provided suggestions for overcoming these challenges, including simplifying CO definitions and using technology to streamline assessment processes.

6. Conclusion & Feedback

The workshop concluded with a summary of key takeaways:

- The importance of clear and measurable COs for effective teaching and learning.
- Best practices for mapping COs to POs and assessing COs using diverse methods.
- The role of CO-PO mapping and assessment in accreditation and continuous improvement.

Feedback from the participants indicated that the workshop was highly informative, practical, and beneficial for enhancing teaching practices.

7. Recommendations for Future Workshops

- Organize follow-up sessions on using technology tools for CO assessment.
- Provide more case studies and examples to help faculty members understand the mapping process better.
- Conduct a more detailed workshop on developing rubrics for assessing COs.

Acknowledgments

We would like to thank all the participants for their active involvement and contribution to the success of the workshop. Special thanks to the facilitators for their valuable insights and guidance.

Report by
Dr.K.Ranjith Kumar
Coordinator

VAAGDEVI COLLEGE OF ENGINEERING

(AUTONOMOUS)

Approved by AICTE & Affiliated to JNTUH, Hyderabad

Bollikunta, Khila Warangal (Mandal)Warangal Urban (Dist.)Telangana – 506 005

CERTIFICATE

OF PARTICIPATION

This certificate is presented to

_____

of _____ has participated in one week workshop
on   "CO-PO Mapping & CO Assessment Process"   organized by
Department of Electrical & Electronics Engineering from 7th to 12th August 2023.

Dr.K.Ranjith Kumar
Coordinator

Mr.P.Purnachander Rao
Head of the Department

Prof.K.Prakash
Principal

Date : 01-03-2024

To,

The Principal,

Vaagdevi College of Engineering,

Bollikunta.

Subject: Request for Conducting FDP from 18-03-2024 to 23-03-2024.

Respected Sir,

I Dr.Ayesha Banu Head of the Department of CSE(Data Science) is organizing Faculty Development Program on "R Language For Analytics And Data Science" from 18-03-2024 to 23-03-2024.In this regard i request you to grant permission and provide required facilities.

Thanking You Sir.

Principal

Your sincerely

HOD CSE(DS)

Permitted

VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)
Approved by AICTE & Affiliated to JNTUH, Hyderabad
Bollikunta, Warangal Urban, Telangana - 506005

ONE WEEK FACULTY DEVELOPMENT PROGRAM
ON
"R LANGUAGE FOR ANALYTICS AND DATA SCIENCE"

DEPARTMENT OF COMPUTER SCIENCE (DATA SCIENCE)

CONVENOR
DR.AYESHA BANU
HOD(CSE-DS)

FACULTY CO-ORDINATORS
G.PALLAVI
B.MAHESHWARI

PATRON
DR.K.PARKASH
PRINCIPAL-VCE

From
18-03-2024
to
23-03-2024

ONE WEEK FACULTY DEVELOPMENT PROGRAM

ON

R - LANGUAGE FOR ANALYTICS AND DATA SCIENCE

Session schedule:

Day-1:

 18-03-2024

Speaker: Dr.P.Niranjan, Kits Warangal

R Installation

Introduction to basics of R

Introduction to Data Frames in R

Introduction to RStudio

Day-2:

19-03-2024

Speaker: Dr.C.Srinivas,KITS Warangal

Introduction to R script

Working directories in RStudio

Indexing and Slicing Data Frames

Creating Matrices using Data Frames

Day-3:

20-03-2024

Speaker:Dr.A.Prathapa Reddy,SVS College.

Operations on Matrices and Data Frames

Merging and Importing Data

Data types and Factors

Lists and its Operations

Day-4:

21-03-2024

Speaker: Dr.Syed Abdul Moeed ,KITS Warangal.

Plotting Histograms and Pie Chart

Plotting Bar Charts and Scatter Plot

Introduction to ggplot2

Aesthetic Mapping in ggplot2

Day-5:

22-03-2024

Speaker : Dr.R.Naveen Kumar,VEC Warangal.

Data Manipulation using dplyr Package

More Functions in dplyr Package

Day-6:

23-03-2024

Speaker: Dr.C. Balarama Krishna, SRU Warangal

Pipe Operator Conditional Statements

Data Analysis Functions in R.

VAAGDEVI COLLEGE OF ENGINEERING

(AUTONOMOUS)

Approved by AICTE & Affiliated to JNTUH, Hyderabad

Bollikunta, Warangal Urban, Telangana - 506005

Faculty Development Program on "R Language For Analytics And Data Science"

LIST OF PARTICIPANTS

S.NO	NAME	DESIGNATION	ORGANISATION	DEPARTMENT	SIGNATURE
1	Zareena Begum	Asst. Prof.	Vaagdevi College of Eng.	CSE (DS)	
2	Dr. J. Sravanthi	Asd. prof.	Vaagdevi college of Engg	CSE (DS)	
3	P. Mounika	Asst. Prof.	Vaagdevi College of Eng.	CSE (DS)	
4	Dr. P. Latha	Asst Prof	Vaagdevi College of Eng	CSE (AI &ML)	
5	B. Swathi	Ard. prof	Vaagdevi college of Engg	CSE	Swathi
6	G. Pallavi	Asst. Prof	Vaagdevi college of Engg	CSE(DS)	Pllavi
7	B. Maheshwari	Asd. prof	Vaagdevi college of Engg	CSE(DS)	
8	Sushma	Asd prof	VEC	CSE	Sushma
9	T. Rajendher	Ant. Prof	SVS	CSE	
10	D. Aparna	Asd. prof	BITS	CSE	
11	G. Jose mary	Ast Prof	JTTS	CSE	Jose
12	Dr. P. Punnamchall	Asd prof	JTTS	CSE	
13	M. Sarapna	Asst. Prof	VCE	CSE	swapna
14	K. Vanaja	Asst. prof	VCE	CSE(AIML)	
15	P. Srayanthi	Asst Prof.	VCE	CSE(DS)	
16	MD. Mahmuda	Asst. Prof	VCE	CSE(DS)	
17	K. Anusha	Asst. prof	VCE	CSE(DS)	
18	S. mamortha	And. prof	VCE	CSE(DS)	
19	B. Rohith	Asst. prof	VCE	CSE (DS)	
20	B. J. praveen	Ast prof	VCE	CSE(DS)	
21	B. Rammohan	Ast. prof	VCE	CSE(DS)	
22	S. Lakshmilalth	Asst. prof.	VCE	CSE(DS)	
23	T. RAJU	Ast. prof	SVS	CSE	Raj
24	Raziya Begum	Ast. prof	BITS	CSE	
25	Hymavathi	Ast. prof	BITS	CSE	

VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)

Approved by AICTE & Affiliated to JNTUH, Hyderabad

Bollikunta, Warangal Urban, Telangana - 506005

SNO	NAME	3/18/2024 FN	3/18/2024 AN	3/19/2024 FN	3/19/2024 AN	3/20/2024 FN	3/20/2024 AN	3/21/2024 FN	3/21/2024 AN	3/22/2024 FN	3/22/2024 AN	3/23/2024 FN	3/23/2024 AN
		ATTENDANCE SHEET : Faculty Development Program on "R Language For Analytics And Data Science"											
1	Zareena Begum												
2	Dr. J. Sravanthi												
3	P. Mounika												
4	Dr. P. Latha												
5	B. Swathi												
6	G. Pallavi												
7	B. Maheshwari												
8	Sushma												
9	T. Rajendra												
10	D. Aparna												
11	G. Tulsemary												
12	Dr. P. Punnamchand												
13	M. Swapna												
14	K. Vanaja												
15	P. Saavarthi												
16	MD. Mahmuda												
17	K. Anusha												
18	S. Mamatha												
19	B. Rohita												
20	B. J. Praveen												
21	R. Ramamohan												
22	S. Lakshmi Latha												
23	T. RAJU												
24	Raziya Begum												
25	Hymavathi												

VAAGDEVI
COLLEGE OF ENGINEERING
UGC AUTONOMOUS
Permanent affiliation to JNTU, Hyderabad

Department of Computer Science Engineering (Data Science)

CERTIFICATE

This is to certify that Mr. / Ms. _____has

Participated in Five Day Faculty Development program on "**R Language For Analytics And Data**

Science" organized by Dept. of Computer Science and Engineering (Data Science), Vaagdevi

College of Engineering, Bollikunta, Warangal, during 2024 Mar 18th-23rd.

FACULTY COORDINATOR   HEAD OF THE DEPARTMENT

G.Pallavi   Dr.Ayesha Banu