3.1. Establish the correlation between the courses and the Program Outcomes (POs) and Program Specific Outcomes (PSOs)

3.1.1 Course Outcomes

Class	Course	Course Code	Faculty Name
A	ROBOTIC PROCESS AUTOMATION DESIGN AND DEVELOPMENT	21CS744	PROF. CHETAN S PATIL

Course Outcome	Description
CO 21CS744.1	To understand the basic concepts of RPA
CO 21CS744.2	To describe various components and platforms of RPA
CO 21CS744.3	To describe the different types of variables, control flow and data manipulation techniques
CO 21CS744.4	To understand various control techniques and OCR in RPA
CO 21CS744.5	To describe various types and strategies to handle exceptions

3.1.2. CO-PO/PSOs matrices of 21CS744 course

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO 1. To Understand the basic concepts of RPA	3	2	0	0	3	0	0	0	0	0	0	0	0	3	0
CO 2. To Describe various components and platforms of RPA	3	2	1	0	3	0	0	0	0	0	0	0	0	3	0
CO 3. To Describe the different types of variables, control flow and data manipulation techniques	3	2	1	0	3	0	0	0	0	0	0	0	0	3	0
CO 4. Identify geospatial data and interconnection of data.	3	2	1	0	3	0	0	0	0	0	0	0	0	3	0
CO 5. To Describe various types and strategies to handle exceptions	3	2	1	0	3	0	0	0	0	0	0	0	0	3	0

3.1.3. Program level Course- PO/PSOs matrix of ALL courses including first year courses

Sample for Batch 2021-25

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C111	1.8	2	2.8	0	0	0	0	0	0	0	0	0
C112	2	2	1.4	0	0	0	0	0	0	0	0	0
C113	1.8	2	1	0	1	0	0	0	1	0	0	0
C234	3	2	1	0	3	0	0	0	0	0	0	0
C353	2	2	0.8	0	3	0	0	0	0	0	0	0
C368	2	1	1	0	1	0	0	0	0	1	0	1
C471	3	1.6	0.8	0	3	0	0	0	0	0	0	0

Course	PSO1	PSO2	PSO3
C111	0	0	0
C112	0	0	0
C235	3	0	0
C236	0	0	3
C351	3	0	0
C472	3	0	0
C4735	0	3	0

3.2 Attainment of Course Outcomes

3.2.1 Describe the assessment processes used to gather the data upon which the evaluation of Course Outcome is based

Figure.3.2.1.A.1: Flow chart for Direct and Indirect assessment tools.

3.3 Attainment of Program Outcomes and Program Specific Outcomes

3.3.1 Describe the assessment tools and processes used for measuring the attainment of each of the Program Outcomes and Program Specific Outcomes

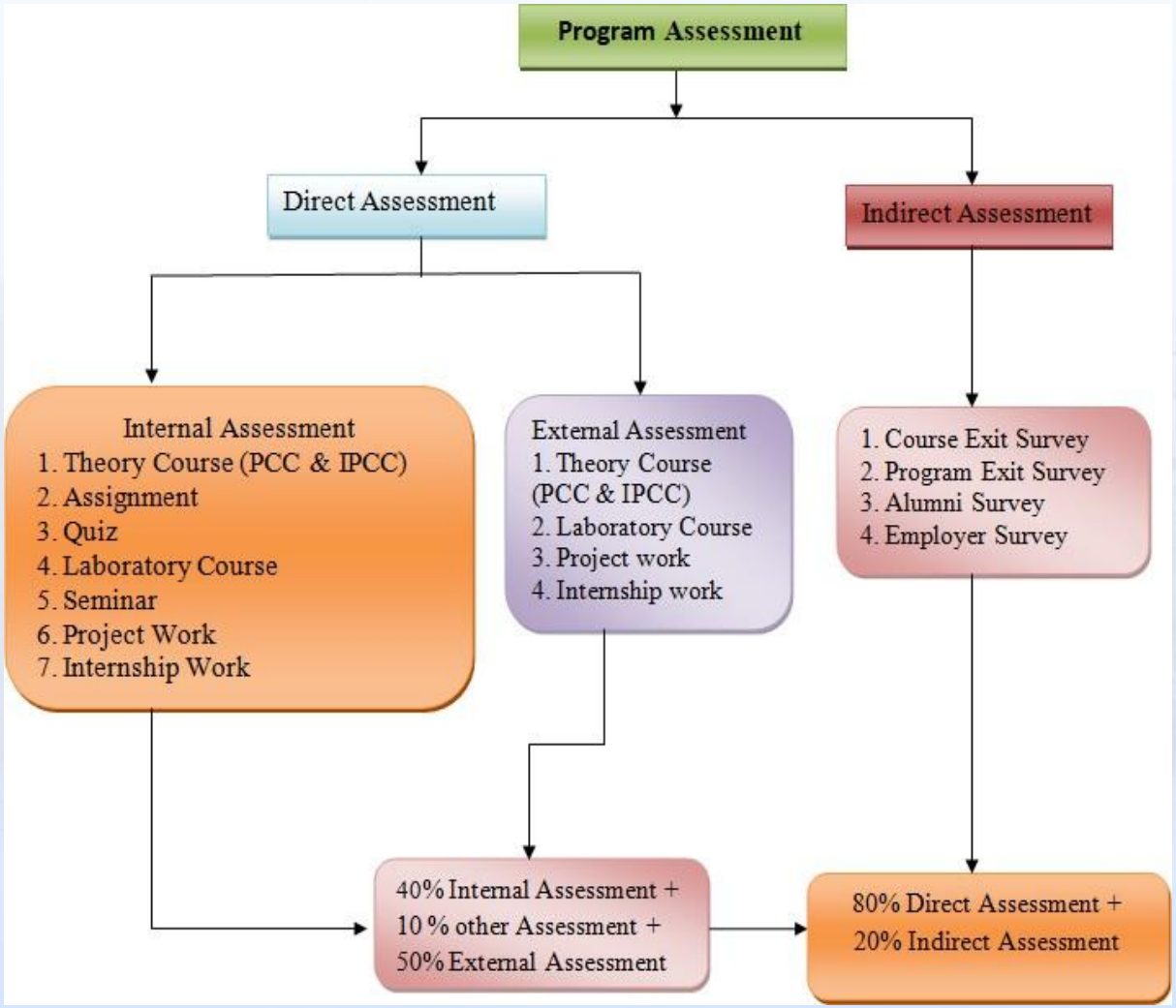

Figure.3.3.1.A: Flow chart for Direct and Indirect PO/PSO assessment tools.

CO-PO mapping with Performance Indicators

PO	C. No	Competencies	PI. No	Performance Indicator	CO1	CO2	CO3	CO4	CO5
PO1: Engineering knowledge – Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization for the solution of complex engineering problems.	1.2	Demonstrate competence in mathematical modelling	1.2.1	Apply the knowledge of discrete structures, linear algebra, statistics and numerical techniques to solve problems	Y	Y	Y	Y	Y
			1.2.2	Apply the concepts of probability, statistics and queuing theory in modelling of computer-based systems, data and network protocols	Y	Y	Y	Y	Y
	1.5	Demonstrate competence in basic sciences	1.5.1	Apply laws of natural science to an engineering problem					
	1.6	Demonstrate competence in engineering fundamentals	1.6.1	Apply engineering fundamentals	Y	Y	Y	Y	Y
	1.7	Demonstrate competence in specialized engineering knowledge to the program	1.7.1	Apply theory and principles of computer science and engineering to solve an engineering problem	Y	Y	Y	Y	Y

Attainment Level	More than **50%** students achieve set goal **1**	More than **60%** students achieve set goal **2**	More than **70%** students achieve set goal **3**

PO1	TPI	MPI	%	ML
CO1	5	4	80	3
CO2	5	4	80	3
CO3	5	4	80	3
CO4	5	4	80	3
CO5	5	4	80	3

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO 1. To Understand the basic concepts of RPA	3	2	0	0	3	0	0	0	0	0	0	0	0	3	0

CO Attainment through University Exam

			Goal Set
			18
Goal Levels	**L1**	**L2**	**L3**
	18	25	30
Attainment Level	More than **50%** students achieve set goal	More than **60%** students achieve set goal	More than **70%** students achieve set goal
	1	**2**	**3**

S.No.	USN	Name of Student	Marks
1	2AG21AD001	Aashna Anwarsab Kunnibhavi	38
2	2AG21AD002	Abhishek Gajanan Burud	5
3	2AG21AD003	Abhishek Mukundrao Ganjigatti	30
4	2AG21AD004	Abrar Ahamed Attar	37
5	2AG21AD005	Achal Janamatti	34

$$\text{Assessment} = \frac{\text{Number of Students achieving set goal}}{\text{Total Number of Students}} \times 100$$

	Description	Value
CO ATTAINMENT	No. of students achieving set goal	4
	% Attainment	80
	Attainment Level	3

CO-Attainment CT

Level	L1	L2	L3	More than 50% students achieved the Goal	More than 60% students achieved the Goal	More than 70% students achieved the Goal
	50	60	70	1	2	3

- Each IA-I question has:
  Part (A): 5 marks
  Part (B): 5 marks
  Total: 10 marks
  Four questions: Q1, Q2, Q3, Q4

USN	Name of Student	Q1(A)	Q1(B)	Total (10)	Q2(A)	Q2(B)	Total (10)	Q3(A)	Q3(B)	Total (10)	Q4(A)	Q4(B)	Total (10)
2AG21AD001	Aashna Anwarsab Kunnibhavi	5	5	10	–	–	0	–	–	0	5	5	10
2AG21AD002	Abhishek Gajanan Burud	5	–	5	–	–	0	–	–	0	5	–	5
2AG21AD003	Abhishek Ganjigatti	5	5	10	–	–	0	–	–	0	5	5	10
2AG21AD004	Abrar Ahamed Attar	5	5	10	–	–	0	–	–	0	5	–	5
2AG21AD005	Achal Janamatti	–	–	0	4	5	9	5	3	8	–	–	0

CO-Attainment CT

Total IA	Assignment-I	Assignment-II	Average Assignment	Quiz	Grand Total
60	**10**	**10**	**20**	**20**	**100**
ALL CO's	**ALL CO's**	**ALL CO's**	**ALL CO's**	**ALL CO's**	
57	10	10	20	19	**96**
30	10	10	20	18	**68**
40	10	10	20	19	**79**
39	10	10	20	19	**78**
46	10	10	20	19	**85**

Assessment for CO1

$$= \frac{\text{Total number of Students attempted in Particular Question CO1}}{\text{Total Number of Students}} \times 100$$

CO Attainment	Parameter	CO	CO	CO	CO
	No. of students achieving CO	4	1	1	4
	% Attainment of CO	80	20	20	80
	Attainment Level of CO	3	0	0	3

CO-Attainment_Course End Survey

Level	L1	L2	L3	More than 50% students achieved the Goal	More than 60% students achieved the Goal	More than 70% students achieved the Goal
	50	60	70	1	2	3

Course Outcomes	Excellent (5)	Very Good (4)	Good (3)	Satisfactory (2)	Poor (1)	Total	Percentage	Level of Attainment
CO 21CS744.1	1	1	1	–	–	12	80	3

$$\text{Indirect Assessment \%} = \frac{(E \times 5) + (VG \times 4) + (G \times 3) + (S \times 2) + (P \times 1)}{(E + VG + G + S + P) \times 5} \times 100$$

Where,

12 : Total i.e. 5 (feedback level) *1 (count)+ 4 * 1 + 3 * 1

5 : No. of Feedback levels

80 : % = 12*100/ ((1+1+1)*5) = 80

PO-Attainment

CO	CO Attainment Level through University Test (a)	CO Attainment Level through Class Test (b)	CO Attainment Level through Course End Survey (c)	Total CO Attainment (a×0.5 + b×0.4 + c×0.1)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO 21CS744.1	3.00	3.00	3.00	3.00	3	2	0	0	3	0	0	0	0	0	0	0	0	3	0
CO 21CS744.2	3.00	3.00	3.00	3.00	3	2	1	0	3	0	0	0	0	0	0	0	0	3	0

Attainment	PO1	PO2
Direct Attainment	3	3
Indirect Attainment	3	3
PO / PSO Attainment	3	3

- **Direct Attainment**

$$= \frac{(3 \times 3) + (3 \times 3)}{3 + 3} = 3$$

- **Indirect Attainment**

$$= \frac{(3 \times 3) + (3 \times 3)}{3 + 3} = 3$$

- **Final PO / PSO Attainment**

$$= (3 \times 0.8) + (3 \times 0.2) = 3$$

- **PO / PSO Attainment**

PO1 = (3×0.8) + (3×0.2) = 3

PO2 = (3×0.8) + (3×0.2) = 3

Thank You