

2.6.2. Attainment of Programme outcomes and course outcomes are evaluated by the institution.

Course Attainment:

Attainment of the course outcomes is measured through direct attainment and indirect attainment.

Overall attainment of CO = 70% CO attainment from Direct method + 30 % of CO attainment through Indirect method

Direct attainment: 30% of CO attainment through formative assessment tools + 70 % of CO attainment through summative assessment tools.

1.1 Formative assessment:

- Unit test/Practice test
- Assignments/Tutorials
- Seminars/Presentation
- Group discussion
- Case study
- Mock interviews
- Open book test
- Online test
- Industrial Visits
- Quiz
- Mini Project

1.2 Summative Assessment:

The result of University theory and Practical examinations

2. Indirect Attainment:

The course exit survey for each course at the end of semester.

Programme Outcome Attainment:

Overall attainment of PO = 80 % PO attainment from direct method + 20 % PO attainment from indirect method

Direct Attainment:

Sum (Overall CO attainment X PO mapping factor) / Sum (PO mapping factor)

Indirect Attainment:

Following methods are used:

- Program exit survey
- Guest lecture



- Industry visits
- Workshops
- The feedback obtained from alumni and recruiters

Rubrics are the indirect assessment tool used to measure the attainment of PO.

The POs/PSOs attainments will be mapped to the PEOs.



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Principal

Indira College of Engineering & Management
Parandwadi Pune-410506

202 - Financial Management

DEPARTMENT: MBA

Academic Year and Semester :-	Academic Year -2023-24 SEM II
Title of The Course:	202 - Financial Management
Course Code:	202
Name of The Course Coordinator :-	Prof. Priyanka Shinde



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Bhawe



Academic Year -2023-24 SEM II

CO-PO mapping

202 - Financial Management

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO202.1	3		2	1					1	2
CO202.2	3			2	2	1				3
CO202.3	1	3	3				2			3
CO202.4	1	3	3	2	2					3
CO202.5	1	2	2							2
CO mapping	3	3	3	2	2	1	2		1	3
PO mapping Factor Sum	12	11	13	7	6	2	4	0	2	16

Strength of correlation: Substantial (High/Strong): 3

Moderate (Medium): 2

Slight (Low/Poor): 1



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Academic Year -2023-24 SEM II

Department: MBA

202 - Financial Management

CO Attainment

CO→	CO202.1	CO202.2	CO202.3	CO202.4	CO202.5	CO202.6
Assessment tools ↓						
Direct Assessment						
Internal Assessment						
MCO TEST	0.00		0.00			0.00
Assignment	2.00		2.00	3.00		
Unit test	2.00	2.00	2.00	2.00	2.00	0.00
Presentation	3.00	2.00				0.00
Prelim Internal Exam	3.00	3.00	2.00	2.00	2.00	0.00
Course Exit Survey	3.00	3.00	2.00	2.00	2.00	0.00
Average direct Assessments	2.36666667	2.5	1.6	2.25	2	0.00
A = Internal attainment X 0.5=	0.65	0.75	0.48	0.675	0.6	0.00
University exams						0.00
End Sem Result	3	3	3	3	3	0.00
B = University Result X 0.7=	2.1	2.1	2.1	2.1	2.1	0
Total Attainment -Direct Assessment D= (A+B)*.7	1.925	1.995	1.806	1.9425	1.89	0
Indirect Assessment						
C = Course Exit Survey Attainment	3	3	3	3	3	0
Total Attainment -Indirect Assessment I= (C)*.3	0.9	0.9	0.9	0.9	0.9	0
CO Attainment = D+I	2.825	2.895	2.706	2.8425	2.79	0

Prof. Pratiksha Sharma
Name of the Faculty:

Signature:

Rules for calculating Attainment level through SPPU Exam (University exam- UE)

Level of Attainment	Rule for Attainment
3	60% or more students having more than average marks
2	50% or more students having more than average marks
1	less than 50% having more than average marks

Method	Tools for Assessment	% Contribution	
Direct(Int)	Assignments	0.3	0.7
	Open Book Test		
	Test-1		
Direct(Ext)	Test-2	0.7	0.7
	University Exams(Phase/Interim & Endsem)		
Indirect	Course Exit Survey	0.3	



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Academic Year -2023-24 SEM II

Department: MBA

202 - Financial Management

PO Attainment

Direct PO Attainment

CO\PO	CO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10		
CO1	2.825	3		2	1					1	2		
CO2	2.895	3			2	2	2				3		
CO3	2.706	1	3	3				2			3		
CO4	2.8425	1	3	3	2	2					3		
CO5	2.79	1	2	2							2		
PO Mapping Factor Sum		9	8	10	5	4	2	2		1	13		

CO\PO		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		8.475		5.65	2.825					2.825	5.65		
CO2		8.685			5.79	5.79	5.79				8.685		
CO3		2.706	8.118	8.118				5.412			8.118		
CO4		2.8425	8.5275	8.5275	5.685	5.685					8.5275		
CO5		2.79	5.58	5.58							5.58		
CO6													
PO Sum		25.4985	22.2255	27.8755	14.3	11.475	5.79	5.412		2.825	36.5605		
Overall Direct PO Attainment		2.833167	2.778188	2.78755	2.86	2.86875	2.895	2.706		2.825	2.812346		
A = Overall Direct PO Attainment (80 %)		2.266533	2.22255	2.23004	2.288	2.295	2.316	2.1648		2.26	2.249877		

Indirect PO Attainment

20%													
Guest Lecture/Seminar		3	2				3				3		
PES													
average		3	2				3				3		
B = Overall Indirect PO attainment (20%)		0.6	0.4				0.6				0.6		
Overall PO attainment (A+B)		2.866533	2.62255	2.23004	2.288	2.295	2.916	2.1648		2.26	2.849877		

Prof. Priyanka Shinde
Name of the Faculty:

Signature:

Shinde

$$PO_i = \frac{\sum_{j=1}^n CO_j W_j}{\sum_{j=1}^n W_j}$$

Head of Department



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COURSE FILE

DEPARTMENT: MBA

Academic Year and Semester :-	2023-24 SEM II		
Title of The Course:	Operations & Supply Chain Management		
Course Code:	204		
Name of The Course Coordinator :-	Prof. PRAVIN THORAT		



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[Signature]



Pravat

CO Attainment						
Operations & Supply Chain Management						
CO→	204.1	204.2	204.3	204.4	204.5	204.6
Assessment tools↓	Direct Assessment					
Internal Assessment						
Presentations	2.00	2.00	2.00	2.00	2.00	2.00
Unit test-internal exam	2.00					
Assignment	3.00	3.00	3.00	3.00		
Average direct Assessment=	2.333333333	2.5	2.5	2.5	2	2
A = Internal attainment X 0.3=	0.7	0.75	0.75	0.75	0.6	0.6
University exams						
End Sem University Exam	2	2	2	2	2	2
B = University Result X 0.7=	1.4	1.4	1.4	1.4	1.4	1.4
Total Attainment -Direct Assessment. D= (A+B)*.7	1.47	1.505	1.505	1.505	1.4	1.4
Indirect Assessment						
C = Course Exit Survey Attainment	2	2	2	2	2	2
Total Attainment -Indirect Assessment. I= (C)*.3	0.6	0.6	0.6	0.6	0.6	0.6
CO Attainment = D+I	2.07	2.105	2.105	2.105	2	2

Method	Tools for Assessment	% Contribution	
Direct(int)	Assignments	0.3	0.7
	Practical Evaluation		
	Test-1		
	Test-2		
Direct(Ext)	University Exams(Phase/Insem & Endsem)	0.7	
Indirect	Course Exit Survey		0.3

Name of the Faculty: Prof. Brahm Thorat

Signature: Thorat

Head of Department

Rules for calculating Attainment level through SPPU Exam (University exam- UE)

Level of Attainment	Rule for Attainment
3	80% or more students having more than average marks
2	70% or more students having more than average marks
1	less than 60% having more than average marks



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PO & PSO Attainment Operations & Supply Chain Management

		Direct PO Attainment															
CO\PO	CO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO 1	PSO 2				
CO1	2.07	3	2		2	2						2	1				
CO2	2.105	3	2	3								2	2				
CO3	2.105	3	2	3	1	3	2					3	1				
CO4	2.105	2	2	3	1	2	2					2	1				
CO5	2	3	1	2	3	1	2					3	2				
CO6	2	2	2	3	1	2	2					12	7				
CO Sum		16	11	14	8	10	8										

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO 1	PSO 2					
CO1	6.21	4.14		4.14	4.14						4.21	2.105					
CO2	6.315	4.21	6.315								4.21	4.21					
CO3	6.315	4.21	6.315	2.105	6.315	4.21	4.21				6.315	2.105					
CO4	4.21	4.21	6.315	2.105	4.21	4.21					4	2					
CO5	6	2	4	6	2	4	4				6	4					
CO6	4	4	6	2	4	4					24.74	14.42					
PO Sum	33.05	22.77	28.945	16.35	20.665	16.42					2.061	2.06					
Overall Direct PO Attainment	2.066	2.07	2.0675	2.044	2.0665	2.0525					1.649	1.648					
A = Overall Direct PO Attainment*0.8	1.653	1.656	1.654	1.635	1.6532	1.642											

		Indirect PO Attainment															
20%	Program Exit Survey	2															
	Industrial Training/Visit	2	2	2	2	2	2										
	Workshop																
	Guest Lecture/Seminar	0															
	Total	4	2	2	2	2	2										
B = Overall Indirect PO attainment (20%)		0.8	0.4	0.4	0.4	0.4	0.4					1.649	1.648				
Overall PO attainment (A+B)		2.453	2.056	2.054	2.035	2.0532	2.042										



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Name of the Faculty: Prof. Pravin Thorat

Signature: Thorat

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$$PO_i = \frac{\sum_{j=1}^n CO_j W_j}{\sum_{j=1}^n W_j}$$

Head of Department



CO-PO mapping
Operations & Supply Chain Management

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO 1	PSO 2			
204.1	3	2		2	2										
204.2	3	2	3								2	1			
204.3	3	2	3	1	3	2					2	2			
204.4	2	2	3	1	2	2					3	1			
204.5	3	1	2	3	1	2					2	1			
204.6	2	2	3	1	2	2					3	2			
CO mapping	3	2	3	3	3	2					3	2			
CO SUM	16	11	14	8	10	8					12	7			

3 Substantial (High/Strong)

2 Moderate (Medium)

1 Slight (Low/Poor)

Name of the Faculty: *Prof Pravin Thorat*

Signature: *Thorat*

Ady
Head of Department



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Pravin





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COURSE FILE

DEPARTMENT: CIVIL ENGINEERING

Academic Year and Semester :-	2023-24 SEM I
Title of The Course:	Water Supply Engineering
Course Code:	301002
Name of The Course Coordinator :-	Prof. Vrushali Patil



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CO-PO mapping
Water Supply Engineering

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
301011.1	3	1	-	-	1	1	2	-	-	-	-	2			
301011.2	3	1	-	-	-	1	2	-	-	-	-	2			
301011.3	3	-	3	-	-	-	2	-	-	-	-	2			
301011.4	3	-	3	-	-	-	2	-	-	-	-	2			
301011.5	3	-	2	-	-	2	2	-	-	-	-	2			
301011.6	3	-	-	-	-	2	2	-	-	-	-	2			
CO mapping	3	1	3		1	2	2					2			
CO SUM	18	2	8		1	6	12					12			

3 Substantial (High/Strong)
2 Moderate (Medium)
1 Slight (Low/Poor)

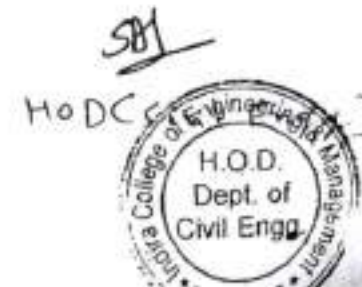


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Subject Incharge



CO Attainment Water Supply Engineering						
CO →	301011.1	301011.2	301011.3	301011.4	301011.5	301011.6
Assessment tools ↓	Direct Assessment					
Internal Assessment						
UT-I	1.00	1.00				
Prelim			2.00	2.00	2.00	2.00
Average direct Assessment =	1	1	2	2	2	2
A = Internal attainment X 0.3 =	0.3	0.3	0.6	0.6	0.6	0.6
University exams						
Insem Result	1	1				
practical exam	3	3	3	3	3	3
End Sem Result			2	2	2	2
B = University Result X 0.7 =	1.40	1.40	1.75	1.75	1.75	1.75
Total Attainment -Direct Assessment D= (A+B)*.7	1.19	1.19	1.65	1.65	1.65	1.65
	Indirect Assessment					
C = Course Exit Survey Attainment	3	3	3	3	3	3
S= Site Visit Rubrics	3	3	3	3	3	3
Total Attainment -Indirect Assessment I= ((C+S)/2)*.3	0.9	0.9	0.9	0.9	0.9	0.9
CO Attainment = D+I	2.09	2.09	2.55	2.55	2.55	2.55

Method	Tools for Assessment	Contribution	
Direct(Int)	Assignments	0.3	0.7
	Practical Evaluation		
	Test-1		
	Test-2		
Direct(Ext)	University Exams/Phase/Insem &	0.7	
Indirect	Course Exit Survey	0.3	

Rules for calculating Attainment level through SPPU Exam (University exam- UE)

Attainment level should be decided by HOD as per the difficulty level of the course



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Subject Incharge

HOD (Civil Engg.)



PO Attainment Water Supply Engineering

Direct PO Attainment

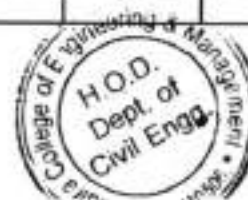
CO\PO	CO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2.09	3	1			1	1	2					2
CO2	2.09	3	1				1	2					2
CO3	2.55	3		3				2					2
CO4	2.55	3		3				2					2
CO5	2.55	3			1		2	2					2
CO6	2.55	3		2			2	2					2
CO Sum		18	2	8	1	1	6	12					12

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	6.27	2.09			2.09	2.09	4.18					4.18
CO2	6.27	2.09				2.09	4.18					4.18
CO3	7.64		7.64				5.09					5.09
CO4	7.64		7.64				5.09					5.09
CO5	7.64			2.55		5.09	5.09					5.09
CO6	7.64		5.09			5.09	5.09					5.09
PO Sum	43.08	4.18	20.36	2.55	2.09	14.36	28.72					28.72
Direct PO Attainment	2.39	2.09	2.55	2.55	2.09	2.39	2.39					2.39
Direct PO Attainment*0.8	1.91	1.67	2.04	2.04	1.67	1.91	1.91					1.91

Indirect PO Attainment

20%	Program Exit Survey												10
	Industrial Training												
	Workshop												
	Guest Lecture/Seminar												
	Total												
Direct PO attainment (20%)													
PO attainment (A+B)		1.91	1.67	2.04	2.04	1.67	1.91	1.91					1.91

Subject Incharge



HOD



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OBE Documents

DEPARTMENT: Civil Engineering

Academic Year and Semester :-	2023-24 SEM I			
Title of The Course:	Air Pollution and Control			
Course Code:	401004 a			
Name of The Course Coordinator :-	Prof. S. R. Satpute			



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CO-PO mapping
Air Pollution and Control

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
401004 a.1	3	1	1	-	-	-	2	-	-	-	-	1
401004 a.2	3	-	-	-	-	-	2	-	-	-	-	1
401004 a.3	3	-	-	-	-	1	2	-	-	-	-	1
401004 a.4	3	-	-	-	-	-	2	-	-	-	-	1
401004 a.5	3	-	-	-	-	3	2	-	-	-	1	1
401004 a.6	3	-	-	1	-	1	2	-	-	-	-	1
CO mapping	3	1	1	1		3	2				1	1
CO-SUM	18	1	1	1		5	12				1	6

3 Substantial (High/Strong)

2 Moderate (Medium)

1 Slight (Low/Poor)



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CO Attainment

Air Pollution and Control

CO →	401004 a.1	401004 a.2	401004 a.3	401004 a.4	401004 a.5	401004 a.6
Assessment tools ↓	Direct Assessment					
Internal Assessment						
UT-I & Prelim	1.00	1.00	1.00	1.00	1.00	1.00
CIE	3.00	3.00	3.00	3.00	3.00	3.00
Average direct Assessment=	2	2	2	2	2	2
A = Internal attainment X 0.3=	0.6	0.6	0.6	0.6	0.6	0.6
University exams						
Insem Exam	2	2				
Term work	3	3	3	3	3	3
End Sem Result			2	2	2	2
B = University Result X 0.7=	1.75	1.75	1.75	1.75	1.75	1.75
Total Attainment -Direct Assessment D= (A+B)*.7	1.65	1.65	1.65	1.65	1.65	1.65
Indirect Assessment						
S= Site Visit Rubrics (STSIF)	3	3	3	3	3	3
S= Site Visit Rubrics (ITM)	3	3	3	3	3	3
Total Attainment -Indirect Assessment I= ((C+S)/2)*.3	0.9	0.9	0.9	0.9	0.9	0.9
CO Attainment = D+I	2.55	2.55	2.55	2.55	2.55	2.55

[Signature]
Subject Teacher



[Signature]
Principal
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PO Attainment Air Pollution and Control

Direct PO Attainment

CO\PO	CO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2.55	3	1	1				2					1
CO2	2.55	3						2					1
CO3	2.55	3					1	2					1
CO4	2.55	3						2					1
CO5	2.55	3					3	2				1	1
CO6	2.55	3			1		1	2					1
CO Sum		18	1	1	1		5	12				1	6

CO\PO		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		7.64	2.55	2.55				5.09					2.55
CO2		7.64						5.09					2.55
CO3		7.64					2.55	5.09					2.55
CO4		7.64						5.09					2.55
CO5		7.64					7.64	5.09				2.55	2.55
CO6		7.64			2.55		2.55	5.09					2.55
PO Sum		45.81	2.55	2.55	2.55		12.73	30.54				2.55	15.27
Overall Direct PO Attainment		2.55	2.55	2.55	2.55		2.55	2.55				2.55	2.55
A = Overall Direct PO Attainment*0.8		2.04	2.04	2.04	2.04		2.04	2.04				2.04	2.04

Indirect PO Attainment

	Program Exit Survey												
	Industrial Training												
	Workshop												
	Guest Lecture/Seminar												
0.20	Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B = Overall Indirect PO attainment (20%)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Overall PO attainment (A+B)		2.04	2.04	2.04	2.04	0.00	2.04	2.04	0.00	0.00	0.00	2.04	2.04


Subject Teacher



Principal
Parandwadi, Pune




HOD



CO Attainment Machine learning

CO→	410242.1	410242	410242.3	410242	410242.5	410242.6
Assessment tools↓						
Direct Assessment						
Internal Assessment						
Assignment 1	3.00	3.00				3.00
Assignment 2			3.00	3.00		
Unit Test 1	3.00	3.00				
Unit Test 2			3.00	3.00	0.00	0.00
Average direct Assessment=	3.00	3.00	3.00	3.00	0.00	1.50
A = Internal attainment X 0.3=	0.9	0.9	0.9	0.9	0	0.45
University exams						
In Sem Result	3	3				
End Sem Result			3	3	3	3
Average direct Assessment=	3.00	3.00	3.00	3.00	3.00	3.00
B = University Result X 0.7=	2.10	2.10	2.10	2.10	2.10	2.10
Total Attainment -Direct Assessment D= (A+B)*.7	2.1	2.1	2.1	2.1	1.47	1.785
Indirect Assessment						
C = Course Exit Survey Attainment	3	3	3	3	3	3
Total Attainment -Indirect Assessment I= (C)*.3	0.9	0.9	0.9	0.9	0.9	0.9
CO Attainment = D+I	3	3	3	3	2.37	2.685

Rules for calculating Attainment level through SPPU Exam (University Exam- UE)

Level of Attainment	Rule for Attainment
3	60% or more students having more than average marks
2	50% or more students having more than average marks
1	40% or more students having more than average marks

Method	Tools for Assessment	% Contribution	
Direct(Int)	Assignments	0.3	0.7
	Test-1		
	Test-2		
Direct(Ext)	University Exams(Phase/In sem & Endsem)	0.7	0.7
Indirect	Course Exit Survey	0.3	

Principal
Indira College of Engineering
& Management, Parandwadi, Pune

Name of the Faculty: Reshma Kohad
Signature:



Dr. Soumitra Das
Head of Department

H.O.D.
Dept. of Computer Engineering
Indira College of Engg & Mgt, Pune.

PO & PSO Attainment Machine Learning

Direct PO Attainment

CO\PO	CO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
CO1	3	3	-	-	-	-	-	-	-	-	-	-	-			
CO2	3	3	-	-	-	-	-	-	-	-	-	-	-			
CO3	3	3	-	2	2	-	-	-	-	-	-	-	-			
CO4	3	3	-	2	-	2	-	-	-	-	-	-	-			
CO5	2.37	3	3	2	-	-	-	-	-	-	-	-	2			
CO6	2.685	2	2	2	2	-	-	-	-	-	-	-	-			
CO Sum		17	5	8	4	2	0	0	0	0	0	0	2			

CO\PO		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
CO1	3	9														
CO2	3	9														
CO3	3	9		6	6											
CO4	3	9		6		6										
CO5	2.37	9	9	6									6			
CO6	2.685	6	6	6	6											
PO Sum		51	15	24	12	6	0	0	0	0	0	0	6			
Overall Direct PO Attainment		3.00	3.00	3.00	3.00	3.00							3.00			
A = Overall Direct PO Attainment*0.8		2.40	2.40	2.40	2.40	2.40							2.40			

Indirect PO Attainment

20%	Program Exit Survey															
	Industrial Training															
	Workshop															
	Guest Lecture/Seminar															
	Total															
B = Overall Indirect PO attainment (20%)																
Overall PO attainment (A+B)		2.40	2.40	2.40	2.40	2.40							2.40			

$$PO_i = \frac{\sum_{j=1}^n CO_j W_j}{\sum_{j=1}^n W_j}$$

Name of the Faculty: Reshma Kohad

Signature: 



Dr. Soumitra Das
Head of Department

Dep. of Computer Engineering
Indira College of Engg & Mgt, Pune



INDIRA COLLEGE OF ENGINEERING AND MANAGEMENT
Approved By AICTE New Delhi, DTE (MS) and Affiliated to Pune University

ACADEMIC YEAR 2023-24 Semester II

Department: Computer Engineering

Course: Data Structure and Algorithms						
CO Attainment						
CO →	210253.1	210253.2	210253.3	210253.4	210253.5	210253.6
Assessment tools ↓						
Direct Assessment						
Internal Assessment						
Theory Assignment	3.00	3.00	3.00	3.00	3.00	3.00
Unit Test 1	2.00	2.00	0.00	0.00	0.00	0.00
Unit Test 2	0.00	0.00	3.00	3.00	3.00	3.00
Average direct Assessments	2.50	2.50	3.00	3.00	3.00	3.00
A = Internal attainment X 0.34	0.75	0.75	0.9	0.9	0.9	0.9
University exams						
Phase Result	2	2				
End Sem Result			2	2	2	2
B = University Result X 0.74	1.4	1.4	1.4	1.4	1.4	1.4
Total Attainment - Direct Assessment, D = (A+B)*.7	1.505	1.505	1.61	1.61	1.61	1.61
Indirect Assessment						
C = Course Exit Survey Attainment	3	3	3	3	3	3
Total Attainment - Indirect Assessment, I = (C)*.3	0.9	0.9	0.9	0.9	0.9	0.9
CO Attainment = D+I	2.405	2.405	2.51	2.51	2.51	2.51

Rules for calculating Attainment level through SPPU Exam (University exam - UE)

Attainment level should be decided by HOD as per the difficulty level of the course

Level of Attainment	Rule for Attainment
3	60% or more students having more than average marks
2	50% or more students having more than average marks
1	40% or more students scoring more than average marks

Method	Tools for Assessment	% Contribution	
Direct(int)	Theory Assignments	0.3	0.7
	Practical Evaluation		
	Test-1,Test 2,Prelims		
Indirect	Course Exit Survey	0.3	

Name of the Faculty: Dr. Sunil Rathod
Signature:



Dr. Soumitra Das
Head of Department

H.O.D.
Dept. of Computer Engineering
Indira College of Engg & Mgt, Pune.



Principal
Indira College of Engineering
& Management, Perandwadi, Pune



INDIRA COLLEGE OF ENGINEERING AND MANAGEMENT
Approved By AICTE New Delhi, DTE (MS) and Affiliated to Pune University

ACADEMIC YEAR 2023-24 Semester II

Department: Computer Engineering

Course: Data Structure and Algorithms

PO Attainment

Direct PO Attainment													
CO\PO	CO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2.405	3	3										
CO2	2.405	3	3					2	2				
CO3	2.51			2	2			2		1		2	
CO4	2.51		3		2	2							1
CO5	2.51												
CO6	2.51												
PO Mapping Factor Sum		6	9	2	4	2		4	2	1		2	1

CO\PO		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		7.215	7.215					4.81	4.81				
CO2		7.215	7.215					4.81					
CO3				5.02	5.02			5.02		2.51		5.02	
CO4			7.53		5.02	5.02							2.51
CO5													
CO6													
PO Sum		14.43	21.96	5.02	10.04	5.02		9.83	4.81	2.51		5.02	2.51
Overall Direct PO Attainment		2.405	2.44	2.51	2.51	2.51		2.4575	2.405	2.51		2.51	2.51
A = Overall Direct PO Attainment*0.8		1.924	1.952	2.008	2.008	2.008		1.966	1.924	2.008		2.008	2.008

Indirect PO Attainment													
20%	Program Exit Survey												
	Industrial Training												
	Workshop							2	2	2			
	Guest Lecture/Seminar							2	2	2			
	Total							0.4	0.4	0.4			
B = Overall Indirect PO attainment (20%)													
Overall PO attainment (A+B)		1.924	1.952	2.008	2.008	2.008		1.966	2.324	2.408	0.4	2.008	2.008

Name of the Faculty: Sunil Damodar Rathod

Signature:

[Signature]

$$PO_i = \frac{\sum_{j=1}^n CO_j W_j}{\sum_{j=1}^n W_j}$$



Dr. Soumitra Das

Head of Department

Dept. of Computer Engineering
Indira College of Engg & Mgt, Pune.

CO Attainment

STQA

CO→	IT33.1	IT33.2	IT33.3	IT33.4	IT22.5
Assessment tools↓					
Direct Assessment					
Internal Assessment					
TEST 1 & 2	3.00	3.00	3.00	3.00	3.00
TUTORIAL/ASSIGNMENTS	3.00	3.00	3.00	3.00	3.00
Internal Exam	3.00	3.00	3.00	3.00	3.00
Average direct Assessment=	3.00	3.00	3.00	3.00	3.00
A = Internal attainment X 0.3=	0.9	0.9	0.9	0.9	0.9
University exams					
University Result	3	3	3	3	3
B = University Result X 0.7=	2.1	2.1	2.1	2.1	2.1
Total Attainment -Direct Assessment D= [A+B]*.7	2.1	2.1	2.1	2.1	2.1
Indirect Assessment					
C = Course Exit Survey Attainment					
Total Attainment -Indirect Assessment I= [C]*.3	0	0	0	0	0
CO Attainment = D+I	3	3	3	3	3

Method	Tools for Assessment	% Contribution	
Direct(Int)	Assignments	0.3	0.7
	Practical Evaluation		
	Test-1		
	Test-2		
Indirect	Course Exit Survey	0.3	

Rules for calculating Attainment level through SPPU Exam (University exam- UE) Attainment level should be decided by HOD as per the difficulty level of the course

Level of Attainment	Rule for Attainment
3	60% or more students having more than average marks
2	50% or more students having more than average marks
1	less than 50% having more than average marks

Prof. Mr. Milind Deshpande
Subject Teacher

Indira College of Engineering
Management, Parandwadi, Pune

Principal

Dr. Darshana Desai
HOD(MCA)



CO-PO mapping STQA

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
IT33.1	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IT33.2	3	--	1	--	--	--	--	--	--	--	--	--	--	--	--
IT33.3	3	1	--	--	--	--	--	--	--	--	--	--	--	--	--
IT33.4	3	2	2	3	--	--	--	--	--	--	--	--	--	2	--
IT33.5	3	2	2	3	--	--	--	--	--	--	--	--	--	2	--
CO mapping	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CO AVERAGE	3	2	2	3	--	--	--	--	--	--	--	--	--	2	--

- 3 Substantial (High/Strong)
2 Moderate (Medium)
1 Slight (Low/Poor)

Justification of CO-PO Mapping

PO1	Knowledge
PO2	Analyse
PO3	Design
PO4	complex problem
PO5	modern tools
PO6	society
PO7	Environment
PO8	ethics
PO9	team work
PO10	communication
PO11	management &
PO12	life long learning

Therefore it is highly correlated to PO1,PO4

IN STQA student is getting very good knowledge about the software development with testing management concepts.
Students can analyse the problem statement very well and can apply all software development with management strategies

Prof. Mr. Milind Deshpande
Subject Teacher

Principal
Indira College of Engineering
& Management, Parandwadi, Pune

Dr. Darshana Desai
HOD(MCA)



PO & PSO Attainment

STQA

Direct PO Attainment

CO\PO	CO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
CO1	3	3	2								3	3				
CO2	3	3	2								3	3				
CO3	3	3	2		3	3				3	3	3				
CO4	3	3	2		3	3				3	3	3	3			
CO5	3	3	2		3	3				3	3	3	3			
CO Sum		15	10		9	9				9	15	15	3			

CO\PO		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
CO1		9	6								9	9				
CO2		9	6								9	9				
CO3		9	6		9	9				9	9	9				
CO4		9	6		9	9				9	9	9				
CO5		9	6		9	9				9	9	9	9			
PO Sum		36	24		18	18				18	36	36	9			
Overall Direct PO Attainment		2.4	2.4		2	2				2	2.4	2.4	3			
A = Overall Direct PO Attainment*0.8		1.92	1.92		1.6	1.6				1.6	1.92	1.92	2.4			

Indirect PO Attainment

20%	Program Exit Survey															
	Industrial Training															
	Workshop															
	Guest Lecture/Seminar															
	Total															
B = Overall Indirect PO attainment (20%)																
Overall PO attainment (A+B)																

$$PO_i = \frac{\sum_{j=1}^n CO_j W_j}{\sum_{j=1}^n W_j}$$

Prof. Mr. Milind Deshpande
Subject Teacher

Dr. Darshana Desai
HOD(MCA)



Indira College of Engineering
Management, Pune

Principal



INDIRA

INDIRA COLLEGE OF ENGINEERING AND MANAGEMENT, Pune

Approved By AICTE New Delhi, DTE (MS) and Affiliated to Pune University (Id-No. PU/PN/Engg/282/2007)

OBE Documents

DEPARTMENT: Civil Engineering

Academic Year and Semester :-	2023-24 SEM I		
Title of The Course:	Hydrology and Water Resource Engineering		
Course Code:	301001		
Name of The Course Coordinator :-	Mr. Shreyas Satpute		



Principal
Indira College of Engineering
and Management, Parandwadi, Pune

[Signature]

CO-PO mapping
Hydrology and Water Resource Engineering

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
301001.1	3	1	-	-	-	-	-	-	-	-	-	2
301001.2	3	1	-	-	-	1	-	-	-	-	-	2
301001.3	3	-	-	-	-	-	-	-	-	-	-	2
301001.4	3	2	-	1	-	1	-	-	-	-	-	2
301001.5	3	2	-	1	-	1	1	-	-	-	-	2
301001.6	3	-	-	-	-	1	1	-	-	-	-	2
CO mapping	3	2		1		1	1					2
CO SUM	18	6		2		4	2					12

Principal
Indira College of Engineering
& Management, Parandwadi, Pune




CO Attainment Hydrology and Water Resource Engineering

CO→	301001.1	301001.2	301001.3	301001.4	301001.5	301001.6
Assessment tools↓						
Direct Assessment						
Internal Assessment						
CIE	2.00	2.00	2.00	2.00	2.00	2.00
Unit Test 1 & Prelim	1.00	1.00	1.00	1.00	1.00	1.00
Average direct Assessment=	1.50	1.5	1.5	1.5	1.5	1.5
A = Internal attainment X 0.3=	0.45	0.45	0.45	0.45	0.45	0.45
University exams						
Insem Result	3	3				
Termwork	3	3	3	3	3	3
End Sem Result		2	2	2	2	2
B = University Result X 0.7=	2.10	2.10	1.75	1.75	1.75	1.75
Total Attainment - Direct Assessment D= (A+B)*.7	1.79	1.79	1.54	1.54	1.54	1.54
Indirect Assessment						
S= Site Visit Rubrics	3	3	3	3	3	3
Total Attainment - Indirect Assessment I= (C+S/2)*.3	0.45	0.45	0.45	0.45	0.45	0.45
CO Attainment = D+I	2.24	2.24	1.99	1.99	1.99	1.99

Principals
Subject Incharge

HOD



Dr. M. V. Patil
Principal
Indira College of Engineering
& Management, Parandwadi, Pune



PO & PSO Attainment

CO/PO	CO Attainment	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012	PSO 1	PSO 2	PSO 3
C01		2.24	3	1				1					2		2	
C02		2.24	3										2		2	
C03		1.99	3										2	1	2	1
C04		1.99	3	2		1							2			1
C05		1.99	3	2		1							2	1	2	1
C06		1.99	3					1					2		2	1
CO Sum			18	6		2		4	2				12	4	8	6

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
CO1	6.71	2.24	2.24				2.24					4.47		4.47	2.235
CO2	6.71	2.24										4.47		4.47	2.235
CO3	5.97											3.98		3.98	1.99
CO4	5.97	3.98	1.99			1.99						3.98	1.99	3.98	1.99
CO5	5.97	3.98	1.99			1.99						3.98	1.99	3.98	1.99
CO6	5.97											3.98	1.99	3.98	1.99
PO Sum	37.29	12.43	3.98			1.99	1.99					3.98	1.99	16.9	1.99
Overall Direct PO Attainment	2.07	2.07	3.98			2.05	1.99					24.86	8.205	16.9	12.43
A = Overall Direct PO Attainment*0.8	1.66	1.66	3.19			1.64	1.59					19.89	6.56	13.52	10.74

[illegible]

Funerary



CO Attainment						
Hydropower Engineering						
CO#	401013 e.1	401013 e.2	401013 e.3	401013 e.4	401013 e.5	401013 e.6
Assessment tools 4						
Direct Assessment						
Internal Assessment						
Unit test 1	1.00	1.00				
Unit test 2			2.00	2.00		
Average direct Assessment	1.00	1.00	2.00	2.00	0.00	0.00
A = Internal Attainment X 0.3=	0.3	0.3	0.6	0.6	0	0
University exams						
In SEM Result	3.00	3.00				
End Sem Result			3.00	3.00	3.00	3.00
Term Work	1.00	1.00	1.00	1.00	1.00	1.00
B = University Result X 0.7=	2.1	2.1	2.1	2.1	2.1	2.1
Total Attainment - Direct Assessment D = (A+B)*.7	1.68	1.68	1.89	1.89	1.47	1.47
Indirect Assessment						
Course Exit Survey Attainment	3	3	3	3	3	3
Site Visit Attainment	3	3	3	3	3	3
Total Attainment - Indirect Assessment I = (C)*.3	0.9	0.9	0.9	0.9	0.9	0.9
CO Attainment = D + I	2.58	2.58	2.79	2.79	2.37	2.37

Method	Tools for Assessment	% Contribution	
Direct(int)	Assignments	0.3	0.7
	Practical Evaluation		
	Test-3		

Rules for calculating Attainment level through SPPU Exam (University exam- UE) Attainment level should be decided by HOD as per the difficulty level of the course

Level of Attainment	Rule for Attainment
3	60% or more students having more than average marks
2	50% or more students having more than average marks
1	less than 50% having more than average marks



Principal
Indira College of Engineering
& Management, Parandwadi, Pune

[Signature]

↓
Subject Incharge

[Signature]
HOD (Civil Engg.)

PO & PSO Attainment Hydropower Engineering

Direct PO Attainment

CO\PO	CO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
CO1	2.58	3											2			
CO2	2.58	3											2			
CO3	2.79	3	3										2			
CO4	2.79	3											2			
CO5	2.37	3		3									2			
CO6	1.92	3					3						2			
CO Sum		18	3	3			3						12			

CO\PO		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
CO1		7.74											5.16			
CO2		7.74											5.16			
CO3		8.37	7.74										5.58			
CO4		8.37											5.58			
CO5		8.37		7.74									5.58			
CO6		5.76					5.76						3.84			
PO Sum		46.35	7.74	7.74			5.76						30.9			
Overall Direct PO Attainment		2.58	2.58	2.58			1.92						2.58			
A = Overall Direct PO Attainment*0.8		2.06	2.06	2.06			1.54						2.06			

Indirect PO Attainment

20%	Program Exit Survey															
	Industrial Training															
	Workshop															
	Guest Lecture/Seminar															
	Total															
B = Overall Indirect PO attainment (20%)																
Overall PO attainment (A+B)		2.06	2.06	2.06			1.536						2.06			

$$PO_i = \frac{\sum_{j=1}^n CO_j W_j}{\sum_{j=1}^n W_j}$$



Principal
Indira College of Engineering
Parandwadi, Pune

Subject Incharge

SAS
MOD (Civil Engg.)