# Course Outcome(CO)- Program Outcome(PO) Calculations in Outcome Based Education (OBE)

## **OBE**

#### As per Tucker, 2004

- "OBE is a process that involves the **restructuring** of curriculum, assessment and reporting practices in education to reflect the **achievement of high order learning and mastery** rather than the accumulation of course credits"
- OBE is student-centered instruction model that focuses on measuring student performance through outcomes.
- OBE means focusing and organizing an institutes entire **programs** and instructional efforts around the **clearly defined outcomes we want all students to demonstrate when they leave institute**
- Done by developing a **clear set of learning outcomes** around which all of the system's components can be focused.

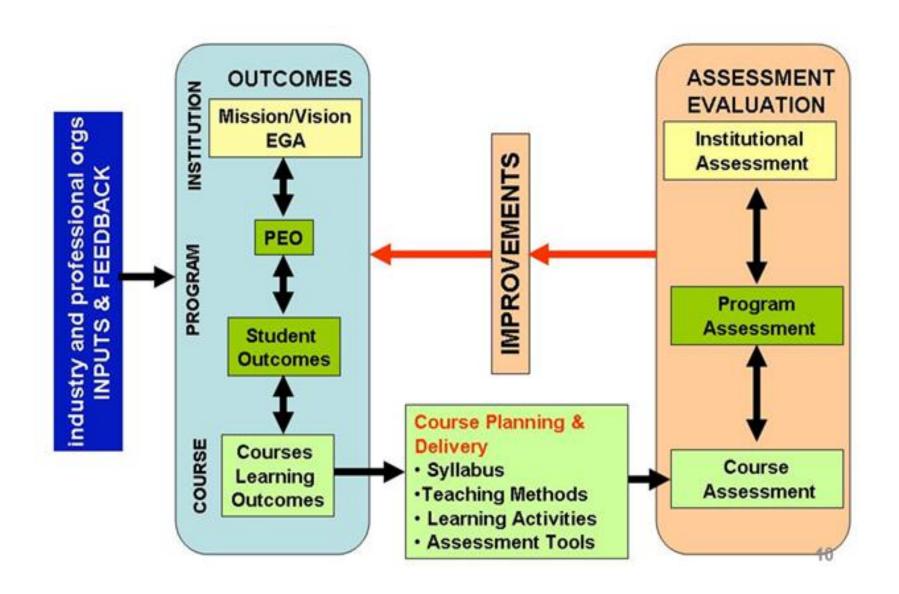
## Why institutions need to follow OBE?

- India is a permanent signatory in the **Washington Accord** in 2014.
- It means that an **Engineering graduate from India can be employed in any one of the other countries** who have signed the accord.
- For Indian Engineering Institutions, according to the pacts of the accord, it is compulsory that engineering institutions follow the Outcome Based Education (OBE) model.
- Outcome Based Education (OBE) as an essential **prerequisite for accreditation**.

## Outcome based education emphasizes on

- Stating what you want your students to be able to do at the end of the program,
- Assessing the students whether they are able to do what they are expected to do.
- Orienting teaching and other academic processes to facilitate students to do what they are expected to do.

### The OBE Framework



## COURSE/PROGRAM

- Course is defined as a theory, practical or theory cum practical subject studied in a semester. For example: Engineering Mathematics
- **Program** is defined as the **specialization or discipline of a Degree**. It is the interconnected arrangement of courses, cocurricular and extracurricular activities to accomplish
  predetermined objectives leading to the awarding of a degree.
  For example: B.Tech., Civil Engineering

## Writing And Assessing Course-Outcomes

- An expected Course outcome is a **formal statement** of what students are expected to learn in a course.
- Simply stated, expected learning outcome statements describe:
  - 1. What faculty members want **students to know** at the end of the course AND
  - 2. What faculty members want **students to be able to do** at the end of the course.
- It is focused on what the learner will know or be able to do by the end of a defined period of time and indicate how that knowledge or skill will be demonstrated.

## Course Outcome..

#### Course outcomes have three major characteristics

- 1. They **specify an action** by the students/learners that is **observable**
- 2. They **specify an action** by the students/learners that is **measurable**
- 3. They **specify an action that is done by the students**/learners (rather than the faculty members)

#### Eg: Expected Learning Outcomes for this session

- 1. Construct/develop expected learning outcomes for a course
- 2. Create an assessment plan that outlines the specific methods that will be used to assess the expected student learning outcomes for a course
- **Do not write vaguely: Understand writing Course Outcome** (How do you observe someone "understanding" a theory, How easy will it be to measure "understanding")

# Writing Effective Course – Outcome Statements

- When stating expected outcomes, it is important to use verbs that describe exactly what the learner(s) will be able to do upon completion of the course. (Bloom's Taxanomy)
- Examples of good action words to include in expected learning outcome statements: Compile, identify, create, plan, revise, analyze, design, select, utilize, apply, demonstrate, prepare, use, compute, discuss, explain, predict, assess, compare, rate, critique, outline, or evaluate

## Examples

- **predict** the appearance and motion of visible celestial objects
- formulate scientific questions about the motion of visible celestial objects
- select and integrate information from various sources
- communicate scientific ideas, procedures, results, and conclusions using appropriate SI units, language, and formats
- describe, evaluate, and communicate the impact of research and other accomplishments in space technology
- By the end of this unit, students will be able to **describe** the characteristics of the three main types of geologic faults (dipslip, transform, and oblique) and explain the different types of motion associated with each.
- By the end of this course, students will be able to **work** cooperatively in a small group environment.

## Bloom's Taxanomy



#### Produce new or original work

Design, assemble, construct, conjecture, develop, formulate, author, investigate

## evaluate

#### Justify a stand or decision

appraise, argue, defend, judge, select, support, value, critique, weigh

## analyze

#### Draw connections among ideas

differentiate, organize, relate, compare, contrast, distinguish, examine, experiment, question, test

## apply

#### Use information in new situations

execute, implement, solve, use, demonstrate, interpret, operate, schedule, sketch

## understand

#### Explain ideas or concepts

classify, describe, discuss, explain, identify, locate, recognize, report, select, translate

## remember

## Recall facts and basic concepts

define, duplicate, list, memorize, repeat, state

REMEMBER	UNDERSTAND	APPLY	ANALYZE	EVALUATE	CREATE
Count	Associate	Add	Analyze	Appraise	Categorize
Define	Compute	Apply	Arrange	Assess	Combine
Describe	Convert	Calculate	Breakdown	Compare	Compile
Draw	Defend	Change	Combine	Conclude	Compose
Identify	Discuss	Classify	Design	Contrast	Create
Label	Distinguish	Complete	Detect	Criticize	Drive
List	Estimate	Compute	Develop	Critique	Design
Match	Explain	Demonstrate	Diagram	Determine	Devise
Name	Extend	Discover	Differentiate	Grade	Explain
Outline	Extrapolate	Divide	Discriminate	Interpret	Generate
Point	Generalize	Examine	Illustrate	Judge	Group
Quote	Give examples	Graph	Infer	Justify	Integrate
Read	Infer	Interpolate	Outline	Measure	Modify
Recall	Paraphrase	Manipulate	Point out	Rank	Order
Recite	Predict	Modify	Relate	Rate	Organize
Recognize	Rewrite	Operate	Select	Support	Plan
Record	Summarize	Prepare	Separate	Test	Prescribe
Repeat		Produce	Subdivide		Propose
Reproduce		Show	Utilize		Rearrange
Select		Solve			Reconstruct
State		Subtract			Related
Write		Translate			Reorganize
		Use			Revise
					Rewrite
					Summarize
					Transform
					Specify
					Summarize Transform

## Course Mapping

□ CO-PO-PSO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
co	. 3	2	2											3	3
co	. 3												3		
CO	1	2	2		2								2		
co	ı	2	3		2								2		

#### CO-PO MAPPING JUSTIFICATION

		PO1	3	Apply the knowledge of system software to design assemblers, loaders and linkers for different architectures.
	CO1	PO2	2	Analyze the working of different passes to develop types of assembler.
		PO3	2	Design and develop the machine independent executable code.
	CO2	PO1	3	Apply the basic knowledge of translators and its working process to develop compilers for different languages.
150064		PO2	2	Analyze the language constructs using different analysis techniques.
15CS63	CO3	PO3	2	Develop the parser systems to meet the particular language constructs.

## ASSESSMENT

#### Assessment is the process of investigating

- (1) what students are learning and
- (2) how well they are learning it in relation to the stated expected learning outcomes for the course.

This process also involves **providing feedback** to the students about their learning and providing new learning opportunities/strategies to increase student learning.

## Methods For Assessing Course Outcomes

Assessment tools are direct and indirect:

Direct Assessment	Indirect Assessment
Internal Exam	Course End survey
End Semester Exam	Program Exit Survey
Assignment, Tutorial	Alumni Survey
Course Project, Case Study	Employer Survey
Field Visit report	
Seminar	

# Course Assessment (CO1)

CO1 = 0.8DA + 0.2IDA

Direct Assessment (DA) 0.8

Indirect Assessment (IDA) 0.2

DA = 0.7IA + 0.3KTU

External Assessment (KTU)
0.3

Internal Assessment (IA)
0.7

IA = 0.6 A1+0.2 A2+0.2 A3

Series Test 0.6

Assignment 0.2

Tutorial/quiz 0.2

#### TARGETS FOR CO ATTAINMENT

#### First time

Internal Evaluation: Average of Internal Marks for the same Course and Program in the previous 3 Academic Years

End Semester Exam: Average of End Semester Exam Marks for the same Course and Program in the previous 3 Academic Years

#### **Subsequent Academic Years**

Not less than Previous Year Target, Continuous Improvement Desirable

#### **Fixing Attainment Levels**

70% or more students Score More than Set Target : 3
60% students Score More than Set Target : 2
50% or more students Score More than Set Target : 1
Less than 50% students Score More than Set Target : 0

#### Sample CO Attainment Calculation

TARGET Internal: 62%, Assignment: 75%, End Sem: 58%

- A1,A2,A3, KTU, IDA = Attainment Index = 3,2 or 1 depending on the percentage of students who achieve target as given above
- Rules for Setting of target are also given above
- IDA done through Course Exit Survey

#### Sample CO Attainment Calculation

TARGET Internal: 62%, Assignment: 75%, End Sem: 58%

Student	% Internal exam marks	% Assignment marks	%Tutorials	% End sem exam marks
1	75	85	80	75
2	60	80	75	68
3	55	73	50	55
4	90	68	68	80
5	80	60	90	45
6	75	90	68	82
7	78	85	75	70
8	48	60	70	56
9	61	80	85	50
10	40	80	60	78
% students above target	50%	60%	82%	60%
Attainment level	1.0	2.0	3.0	2.0

$$IA = 0.6 \times 1 + 0.2 \times 2 + 0.2 \times 3 = 1.6$$

$$DA = 0.7 \times 1.6 + 0.3 \times 2 = 1.72$$

$$CO1 = 0.8 \times 1.72 + 0.2 \times IDA$$

IDA – Got from Course Exit Survey

	D	epartme	nt and Co	ollege Na	me			
	COURS	E EXIT	SURVE	Y, Month	and Year	r		
		COI	URSE N	AME:				
		COUR	SE OUT	COMES	Š			
After succes	ssful completion of the stu	ıdent wil	ll be abl	e to				
CO-1:								
CO-2:								
CO-3:								
CO-4:								
CO-5:								
CO-6:								
		COURS	E EXIT	SURVE	Y			
	To what extent	you th	nink yo	ou achi	eved t	hese C	Os?	
	You may write 5 fo	or "Excell	ent", 4 f	or "very	good", 3 f	for "good	",	
	2 for "satisfact	ory", 1 fc	r "Poor"	and 0 fo	r "not ach	nieved"		
Roll No.	Name of the Student	CO 1	CO 2	CO 3	CO 4	CO 5	CO 6	SIGNATURE

Get this from whole class.

If above **70% of students rate CO1 as above 3** then IDA for CO1 is **3** If only 50% of students rate CO6 as above 3 then IDA for CO6 is 1

#### Complete Calculation from C01 to CO6 using above method

## PO Attainment

#### 5.2 PO ATTAINMENT

Percentage Weightage for Direct and Indirect Components

Direct	Indirect
70	30

A sample mapping of CO-PO for one particular subject is shown below:

со	Overall Attainm ent	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
EC101.1	2.08	3											
EC101.2	2.56	3	3	3	24		8		8		20	10	
EC101.3	2.4	2						3					
EC101.4	2.2										3		
EC101.5	1.9	3								3			

Direct Attainment of PO1 =  $(2.08+2.56+2.4\times0.66+1.9)/4 = 2.031$ 

Let the Indirect attainment of PO1 be 2.7

PO1 overall attainment =  $2.031\times0.7+2.7\times0.3$ 

= 2.232

Indirect Attainment of PO is through Program Exit Survey to be done at end of 8<sup>th</sup> Semester

## Sreepathy Institute of Management and Technology DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

#### CO- PO Attainment CS208 Principles of Database Design

Assess	sing method	ST	-1	ST	1-2	A1	A2	Title of the						KTU	
Register No.	Name of Student	CO1	CO2	CO5	CO6	CO3	CO4				e de la constitución de la const		10	Grade	%
Register 140.	manie of order	10	10	10	10	5	5		$\dashv$				10	B+	79
SPT18CS001 A	avani T	8	8	10	10	3	3		-					A	84
SPT18CS002 A	Abhijith P	3	3	9	9	3	3			1005				B+	79
SPT18CS003 A	Abhirami A C	5	5	9	9	3	3	-						В	69
SPT18CS004 A	Abhishek S Kumar	2	2	9	9	2	2	-					1	Withheld*	0
SPT18CS005 A	ABISHEK V	0	0	9	9	3	3		-		-			Α	84
01 11000000	Adarsh M	8	8	9	9	3	3							В	69
	Anagha P R	6	6	10	10	3	3				-			Α	84
	Anirudh S Rajeev	7	7	9	9	3	3	-						B+	79
0	Anjali Varma N K	5	5	10	10	3	3							B+	79
0,	Aswathy S	6	6	9	9	3	3							B+	79
01 11000011	Aswin V	5	5	9	9	3	3	-	_					Withheld*	0
01 11000012	Athira P	2	2	9	9	3	3	+						В	69
	Austin Ignatius	` 5	5	9	9	3	3	+	1		+	1		В	69
•, , ,	Daya K S	5	9	9	9	3	3	_	-		+			0	100
	Dinoop K V	9	5	7	7	3	3			$\vdash$				В	69
0	E Rohith	5		9	9	3	3	+-	+	+-	+	_		A+	89
0, ,,000	Fathima Shahana E K	9	9		9	3	3	+-	-	+		_	_	B+	79
	Gokul Krishnan M K	5	5	9		3		+	+-	+	+	-	+	Withheld	_
SPT18CS019	Hareesh Mohan A V	2	2	9	9			+-	+	+		_	+	B	69
SPT18CS020	Jeslin C John	5	5	9	9	3	3		+	+-	+	_		Withhel	_
SPT18CS021	Jithin M	2	2	3	3	2	2	-	+	+	$\dashv$	-	+	_	
SPT18CS022	Jithu M	0	0	. 7	7	2			_	4			-	Withhel	79
SPT18CS023	K Gayathri	5	5	9	9	3				_			-	B+	_
SPT18CS024	Mohammed Dhilshad	0	0	9	9	3	3							Withhe	d* 0

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SPT18CS025	Muhammed Nishad K P	1	1	9	9	2	2				Withheld*
SPT18CS026	Nair Vaishnavi Ravi	8	8	9	9	3	3				В
SPT18CS027	Neeraja A J	7	7	9	9	3	3				Λ
SPT18CS028	Nimisha Sreenivasan	6	6	9	9	3	3				С
SPT18CS029	Niranjana Raj V K	5	5	9	9	3	3				B+
	Parvathy S Menon	10	10	9	9	3	3				0
SPT18CS031	Pranav V K	1	1	9	9	3	3				В
SPT18CS032	Rithwik Krishnan K	3	3	9	9	3	3				Withheld*
SPT18CS033	Roshan K V	7	7	9	9	3	3				A+
SPT18CS034	Sabeer T K	2	2	9	9	2	2				Withheld*
SPT18CS035	Sanil T P	2	2	9	9	3	3				Withheld*
SPT18CS036	Sneha P	3	3	9	9	3	3				С
SPT18CS037	Sreenath K V	5	5	9	9	3	3				В
SPT18CS038	Sreeram M S	5	5	9	9	3	3				B+
SPT18CS039	Sruthy M	7	7	9	9	3	3				Withheld*
SPT18CS040	Sulfath P S	5	5	10	10	3	3				C B+
SPT18CS041	Surya K	5	5	9	9	3	3		 		Withheld*
SPT18CS042	Vaisakh K P	7	7	9	9	3	3				Withheld*
SPT18CS043	Visakh M	3	3	9	9	3	3				B+
LSPT18CS044	RESHMA P.V.	6	6	9	9	3	3				Withheld*
LSPT18CS045	SUMIN DAS	2	2	9	9	2	2		 		Willineid
CL	ASS AVERAGE	4.52	4.52	8.94	8.94	2.4	2.4			5	50
THE	RESHOLD=50%	5	5	5	5	2.5	2.5	 		 	30
No of stude	ents with marks>=60%	19	19	44	44	39	39			0	24
centage of student	s securing marks above thresh	46.34	46.34	107.32	107.32	95.12	95.12			0.00	58.54
attainmnt leve	l based on levelindicator	0	0	3	3	3	3			0	1

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			r727	Direc	t Assess	ment T	Γools			ज्यानस <u>्त्र</u>		- 12	Direct Attainme	Indire ct
	ST-1	ST-2	A-1	A-2	T1	T2	Т3	T4	T5	<b>T6</b>	IA	KTU	nt nt	Attain
CO1	1	0	0	0	0	0	0	0	0	0	0.7	0.3	0.8	0.2
CO2	0.6	0	0.4	0	0	0	0	0	0	0	0.7	0.3	0.8	0.2
CO3	0	1	0	0	0	0	0	0	0	0	0.7	0.3	0.8	0.2
CO4	0	1	0	0	0	0	0	0	0	0	0.7	0.3	0.8	0.2
CO5	0	0	0	1	0	0	0	0	0	0	0.7	0.3	0.8	0.2
CO6	0	0	0	0	0	0	0	0	0	1	0.7	0.3	0.8	0.2

- P		Attainment Level													CO
	ST-1	ST-2	A-1	A-2	T1	T2	Т3	Т4	Т5	Т6	IA	KTU	Attainme nt	ent	Attainment
601	1 2	0	0	0	0	0	0	0	0	0	3	1	2.4	3	2.52
COI	3	0	U	0		<u> </u>	0	0	0	0	1.2	1	1.14	3	1.512
CO2	0	0	3	0	0	0	0	0	0	0		1		1 2	
CO3	0	3	0	0	0	0	0	0	0	0	3	1	2.4	3	2.52
CO4	0	2	0	0	0	0	0	0	0	0	2	1	1.7	3	1.96
CO5	0	0	0	3	0	0	0	0	0	0	3	1	2.4	3	2.52
	0	0	-	-			0	0	0	3	3	1	2.4	3	2.52
CO6	0	0	0	0	0	1 0	10	10	10	ر ا	1	<u> </u>			
		A CONTRACTOR OF THE PARTY OF TH		The special control of the last of the las	TO A STREET WATER A STREET	1	-		-	1	1			CO	2.26

	3	3	<u></u>	9										
Course Outcomes				Pro	gram O	utcome	S						PSOs	
Course Outcomes	PO1	PO2	PO3	PO4	PO5			PO8	PO9	0	1	PO12	PSO1	PSO2
	101			_	2	^	0	Λ	0	0	0	0	1	1
CO1	1	2	0	0	2	- 0	U	U	0	0	0	<del></del>		
CO2	2	0	2	3 .	0	0	0	0	0	0	0	0	2	1
20.00	2	_	_	0	2	0	0	0	0	0	0	0 1	1	1
CO3	2	0	- 0	- 0			<u> </u>	-			_	2	0	1
CO4	1	0	0	0	2	0	0	0	0	0	0			1
	2	2	2	2	0	0	0	0	0	0	0	2	2	1
CO5					^	Λ	0	0	0	0	0	2	2	1
CO6	2	0	0	2	U	U	U	_	U	0		200	1.60	1.00
	1.67	2.00	2.00	2.33	2.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00		1.00
Average				1.62	1.56						1	1.56	1.21	0.75
Attainment	1.26	1.68	1.34	1.02	1.50	<u></u>								

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		ME	312 M	ETRO	LOGY	& IN:	STRUM	MENTA	ATION	1					
Assessing method		ST-1			ST-2			A1			A2			кти	
Register No.	Name of Student	CO1	CO2	CO3	CO4	CO5	CO6	CO1	CO2	СОЗ	CO4	CO5	CO6	NIO	
		20	20	10	10	20	20	4	2	4	4	2	4	GRADE	100
SPT17ME002		4	5	5	10	20	10	3	2	4	3	2	4	С	59
	AJAY SREEDHAR	1.	10	5	7	18	16	. 4	2	4	4	2	3	- B	69
	AKHIL	11	10	7	7	20	18	4	2	4	4	2	4	В	69
SPT17ME006		12	12	7	8	18	19	4	2	4	4	2	4	A+	89
SPT17ME007	AKHIL P	17	14	10	8	19	19	4	2	4	4	2	4	A+	89
SPT17ME009		10	6	5	8	16	16	4	1	3	4	2	3	B+	79
	ANANTHA KRISHNAN V P	2	0	0	9	18	10	4	2	4	4	2	3	F	0
SPT17ME011		14	17	7	8	18	15	4	2	4	4	2	4	A+	89
SPT17ME012	ANIRUDH T	17	17	8	9	19	19	4	2	3	4	2	4	A	84
SPT17ME013		5	5	5	9	18	18	4	2	3	4	2	3	В	69
SPT17ME014		2	0	2	8	18	10	3	2	3	3	2	4	F	0
spt17me015		19	19	9	9	19	19	4	2	4	4	2	4	A+	89
SPT17ME016	ARJUN M P	4	0	0	8	18	18	3	2	3	0	0	0	F	0
SPT17ME018	ARJUN P	4	0	3	8	18	18	4	2	3	3	2	4	F	0
SPT17ME019	ARUN A N	5	5	5	8	18	12	3	2	3	0	0	0	T C	59
SPT17ME020	ATHUL ANAND P	5	5	5	7	18	10	3	2	3	4	2	3	F	0
	AV NIDHAL RAZIK	8	5	5	9	18	10	4	2	3	4	2	3	F	0
	DHANUSH NARAYANAN K S	0	10	5	8	18	17	4	2	3	4	2	3	F	+
SPT17ME025	<b>ГАНЕЕМ М К</b>	5	4	5	8	17	18	0	1	3	4	2	3	F	0
SPT17ME026	GOKULTP	10	10	6	7	18	13	4	2	4	4	2	3		0
SPT17ME027	GOPI SANKAR	8	6	6	5	17	17	3	2	3	4			B+	79
SOT17ME028	HARISHANKAR G	10	10	5	8	18	18	3	2	3	4	2	3	В	69
SPT17ME029	A W NOWNII	5	5	5	8	18	12	4	2	4	<u> </u>	2	3	B+	79
SPT17ME030	K ANANDU	10	10	6	7	18	17	4	2	3	4	2	3	F	0
SPT17ME033	MANISH V.V.	3	2	2	8	12	12	3	_		4	2	3	B+	79
SPT17ME035	MOHAMMED SANJID M.V.	10	13	8	9	19	18	4	2	3	4	2	3	В	69
SPT17ME037	MRUDUL RAVI P	14	10	6	8	19	18	3	2	4 3	4	2	4	B+	79

31 11/IVIE038	MUHAMMED HASHIR	4	3	0	8	18	13	3	2	3	2	1	2	F	0
SPT17ME039	NIYAZUDHEEN	4	3	5	8	18	13	3	2	3	3	2	3	С	59
SPT17ME040	PRANAV K	4	5	5	8	18	17	4	2	4	3	2	3	В	69
SPT17ME042	RAHUL RAJENDRAN	17	17	9	9	19	18	4	2	3	4	2	4	A+	89
SPT17ME043	RAHUL S	6	10	5	10	17	15	3	2	3	3	2	4	B+	79
SPT17ME045	SANJAYKRISHNAN K	12	12	7	9	19	18	4	2	4	4	2	4	B+	79
SPT17ME047	SATHYAJITH M	10	5	0	9	18	10	3	2	3	0	0	0	F	0
SPT17ME048	SHIDHUL C	1	5	0	. 8	18	13	3	2	3 .	3	2	3	F	0
SPT17ME049		18	17	7	10	20	14	4	2	3	4	2	4	A+	89
SPT17ME050	SREEJITH WARRIAR J.S.	10	4	0	9	18	14	4	2	3	4	2	3	В	69
SPT17ME051	SREEKANTH C	10	2	5	9	18	12	3	2	3	3	2	3	В	69
SPT17ME052	SREENATH S.R.	4	4	0	9	18	13	4	2	3	0	0	0	С	59
SPT17ME054	UTHRAJ M	14	17	8	9	18	16	4	2	3	4	2	4	A+	89
SPT17ME056	VARUN V.V	10	10	5	10	18	18	4	2	4	4	2	4	В	69
SPT17ME057	VIMAL K.T.	13	14	7	10	20	17	4	2	4	4	2	4	A	84
SPT17ME058	VIPIN V.P.	14	12	7	9	19	17	4	2	3	4	2	4	B+	79
SPT17ME059	VISHNU M.R	20	20	8	9	20	18	4	2	4	4	2	4	0	90
SPT17ME061	YADHUKRISHNAN C	10	11	5	8	18	18	4	2	3	4	2	4	В	69
LSPT17ME063	АВНІЛІТН V	11	11	5	10	19	18	4	2	4	4	2	4	Α	79
LSPT17ME064	HAREESH C K	7	4	7	8	17	18	4	2	3	4	2	3	F	0
LSPT17ME065	KIRAN J	3	0	0	10	17	15	0	2	3	3	2	4	F	0
LSPT17ME066	M RAHUL	12	13	7	9	18	18	4	0	0	0	0	0	B+	79
LSPT17ME067	SAJITH R S	14	14	5	10	19	18	4	2	4	4	2	4	A	84
SPT16ME040	JITHIN T V	10	3	5	7	15	17	4	2	4	3	2	4	F	0
	CLASS AVERAGE	8.88	8.35	4.98	8.45	18.08	15.59	3.55	1.92	3.31	3.37	1.78	3.18		54.12
	THRESHOLD=50%	10	10	5	5	10	10	2	1	2	2	1	2		50
	No of students with marks>=60%	28	26	40	51	51	51	49	50	50	46	46	46		36
	Percentage of students securing marks above	54.90	50.98	78.43	100.00	100.00	100.00	96.08	98.04	98.04	90.20	90.20	90.20		70.59
	attainmnt level based on level	1	1	3	3	3	3	3	3	3	3	3	3		3

		Dire	ct Asses	sment	Tools	FENT EX	Direct Attainm	Indirec t		,	passing in			,
A PROPERTY AND PROPERTY CONTRACTOR AND ADMINISTRATION AND ADMINISTRATI	ST-1	ST-2	A-1	A-2	IA	KTU	ent	Attain						
CO	0.0	0	0.4	0	0.7	0.3	0.8	0.2						
CO	0.6	0	0.4	0	0.7	0.3	0.8	0.2						
CO	0.0	0	0.4	0	0.7	0.3	8.0	0.2						
C	1 0	0.6	0	0.4	0.7	0.3	0.8	0.2						
	0 0	0.6	0	0.4	0.7	0.3	0.8	0.2						
C	0	0.6	0	0.4	0.7	0.3	0.8	0.2						
		Dire	ct Asse	ssment	Tools		Direct Attainm	A NOT Personal Constitution	CO Attain					
	ST-1	ST-2	A-1	A-2	IA	KTU	ent	Attain	ment					
	01 1	0	3	0	1.8	3	2.16	2	2.13					
	02 1	0	3	0	1.8	3	2.16	2	2.13					
	03 3	0	3	0	3	3	3	2	2.8					
	04 0	3	0	3	3	3	3	2	2.8					
	05 0	3	0	3	3	3	3	2	2.8					
C	06 0	3	0	3	3	3	3	2	2.8					
		or or other desired and the second		The second second	-140000 010000 00000 00000		CO A	verage	2.58					
Course C	Outcomes		hacara en en a	Kerteurus or interescope	Pro	gram O	utcomes			-			P	SOs
	PO1	PO2	PO3	PO4	PO5	P06	PO7	PO8	PO9	PO10	PO11	PO12	PSO	
C	01 2	0	3	0	0	0	0	0	0	0	0	0	0	2
C	02 2	0	3	0	0	0	0	0	0	0	0	0	0	2
C	03 2	0	3	0	0	0	0	0	0	0	0	0	0	2
C	04 2	0	3	0	2	0	0	0	0	0	0	0	0	2
C	05 2	0	2	0	0	0	0	0	0	0	0	0	0	2
C	06 2	0	3	0	0	0	0	0	0	0	0	0	0	2
Ave	rage 2.0	0.0	2.8	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0
Attair	nment 1.72	0.00	2.42	0.00	1.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
								WANA		- Control of the Cont		1	1	

Krishnay. K.N.