

### **Mechanical Engineering Department**

Academic Year: 2019-20	Class: B.E. (A)
Semester: II	Date: 24/02/2020
Course Outcome: CO2	Programme Outcome: PO1,PO9,PO12

#### **Innovative Teaching Method**

**Title of Innovative teaching method:** Industry Based Case Study on "Productivity Improvement by Using Method Study in Automobile Industry" to understand Method Study.

- 1. Name of faculty: Mr. R. B. Jagtap
- 2. Subject: Industrial Engineering (C409B)
- **3.** Objective of method:
  - i. To understand method study and cost benefit analysis by increase in profit per year
  - ii. To describe the use of method study for productivity improvement of an automobile industry
- 4. Topic covered through activity: Method study

#### 5. Description of method with benefits:

Faculty member has explained the definition, objective, and scope of method study. How to solve identified problems by using method study principles has been demonstrated by the faculty member in the class room with a case study. Quiz is conducted by Testmoz on the present topic to assess the topic understanding.

Benefits of method:

- Students can learn better from such examples
- It helps students to understand the practical aspects of topic

### **Roles and responsibilities:**

Teacher

- Prepare presentation on the present topic
- Develop the awareness among the students about the use of method study in industrial applications
- Provide the study material and appropriate guide lines at every stage to the students
- Prepare assessment methodology

Student

- Learn the present topic and go through the presentation material
- Understand the practical aspects of topic
- Answer the questions asked in Quiz by using Testmoz (http://testmoz.com/2483549)

### 6. Assessment tools:

Quiz is conducted by using testmoz website (<u>http://testmoz.com/2483549</u>).

Questions of the Quiz and corresponding right options are as follows. Each question carries one mark. Maximum marks for the Quiz are 10.

Q. No.	Question
1	Work study involves
a	Only method study
b	Only work measurement
с	Method study and work measurement
d	Only motion study
	Correct option - c
2	What does symbol 'O' imply in work study?
a	Operation
b	Inspection
с	Transport
d	Delay/temporary storage
	Correct option - a
3	Micro motion study is
a	Analysis of a man-work method by using a motion picture camera with a
	timing device in the field of view
b	Motion study observed on enhanced time intervals
c	Motion study of a sequence of operations conducted systematically
d	Study of man and machine conducted simultaneously
	Correct option - a
4	The purpose of micro-motion study is to
a	Assist in finding out the most efficient way of doing work
b	Train the individual operator regarding the motion economy principles
с	Help in collecting the motion time data for synthetic time standards
d	All of the above
	Correct option - d
5	Travel charts provide
а	An idea of the flow of materials at various stages
b	The information for changes required in rearranging material handling
	equipment
с	The information for changes required in rearranging material handling
	equipment
d	An approximate estimate of the handling which must be done at a
	particular station
	Correct option - b
6	Percent idle time for men or machines is found by
a	Work sampling
b	Time study
с	Method study
d	Work study
	Correct option - a

7	Time study is carried out
a	By finding all the significant informations regarding the job, work place
	and machine tool etc
b	By breaking up each operation into small elements which are measurable
	with the help of the measuring device accurately
с	By observing and recording the time taken by the operator for an operation
d	All of the above
	Correct option - d
8	Motion study involves analysis of
a	Actions of operator
b	Layout of work place
с	Tooling and equipment
d	All of the above
	Correct option – a
9	Motion study involves analysis of
а	Actions of operator
b	Layout of work place
с	Tooling and equipment
d	All of the above
	Correct option - a
10	Time study is carried out to determine the time required to complete job
	by
a	A slow worker
b	A fast worker
с	A skilled worker
d	An apprentice
	Correct option - c

# 7. Evaluation sheet

Roll	Nama	Marks out of	1	2	2		F	(	-	0	0	10
<u>по.</u> 1	Aditya Ashok Aher	10	1	<u>2</u> 1	<u> </u>	<b>4</b> 1	<b>5</b>	<b>0</b> 1	1	<b>o</b> 1	<b>9</b>	10
2	Surai Vilas Aher	10	1	1	1	1	1	1	1	1	1	1
3	Dhirai R. Ahire	10	1	1	1	1	1	1	1	1	1	1
4	Sagar Atmaram Ahire	10	1	1	1	1	1	1	1	1	1	1
5	Ajay Kumbhar	9	1	1	0	1	1	1	1	1	1	1
6	Khatri Ankit Anil	4	1	1	0	1	0	0	0	0	0	1
7	Attar Aavesh Rauf	AB										
8	Deepak Bhagwan Attarde	10	1	1	1	1	1	1	1	1	1	1
9	Atul Bankar	10	1	1	1	1	1	1	1	1	1	1
10	Chavan Avirag Sandip	10	1	1	1	1	1	1	1	1	1	1
11	Divyesh K Badgujar	10	1	1	1	1	1	1	1	1	1	1
12	Pratik Bagul	10	1	1	1	1	1	1	1	1	1	1
13	Yogita Chandrakant Bagul	10	1	1	1	1	1	1	1	1	1	1
15	Barhate Siddhant Murlidhar	AB										
17	Bhalerao Madhura Dattatray	6	0	1	1	1	0	1	1	0	0	1
19	Bhave Nitin Balwant											
20	Timish Ajay Bhave	10	1	1	1	1	1	1	1	1	1	1
21	Diksha Ananda Bhoye	10	1	1	1	1	1	1	1	1	1	1
22	Mayur Bidwe	7	1	1	1	1	0	1	1	0	0	1
23	Bhushan Birla	4	1	0	1	0	0	0	1	0	0	1
25	Amol Tanaji Borade	10	1	1	1	1	1	1	1	1	1	1
26	Nikita Gajendra Borade	10	1	1	1	1	1	1	1	1	1	1
27	Pritam A Chandel	7	1	1	1	1	1	0	1	0	0	1
28	Adesh Chaudhari	10	1	1	1	1	1	1	1	1	1	1

31	Dalavi Ganesh Rajendra	10	1	1	1	1	1	1	1	1	1	1
32	Suyog Mahesh Dandge	10	1	1	1	1	1	1	1	1	1	1
33	Apurva Danej	10	1	1	1	1	1	1	1	1	1	1
34	Jayesh Krishna Deore	9	1	1	1	0	1	1	1	1	1	1
35	Sanket Prakash Deore	8	1	1	1	1	0	1	1	1	1	0
36	Desale Dipak Rajendra	AB										
37	Siddhi Shyamrao Deshmukh	10	1	1	1	1	1	1	1	1	1	1
38	Deshpande Nikhil Pradeep	10	1	1	1	1	1	1	1	1	1	1
39	Dharmashale Pooja Rushikesh	AB										
41	Abhishek Dhondge	10	1	1	1	1	1	1	1	1	1	1
42	Gaidhani Atharva Satish	10	1	1	1	1	1	1	1	1	1	1
43	Roshani Nandkishor Gaikwad	10	1	1	1	1	1	1	1	1	1	1
44	Shantanu Garad	6	1	1	1	1	0	0	1	0	0	1
45	Kumar Gautam Rajiv	AB										
46	Gharate Harashada Pramod	8	1	1	0	1	1	1	0	1	1	1
47	Ghule Shubham Gorakshanath	AB										
48	Gite Darshan Baban	10	1	1	1	1	1	1	1	1	1	1
49	Shubham Abaji Gite	10	1	1	1	1	1	1	1	1	1	1
50	Godse Samrudhi Sanjay	4	1	1	0	0	0	0	1	0	0	1
51	Dipali Gunjal	10	1	1	1	1	1	1	1	1	1	1
52	Sourav Gunjal	10	1	1	1	1	1	1	1	1	1	1
53	Chaitanya N Hake	10	1	1	1	1	1	1	1	1	1	1
54	Hemant	7	1	1	1	1	0	1	1	0	0	1
55	Aniket Hiray	10	1	1	1	1	1	1	1	1	1	1
56	Shubham Vijay Ikhe	10	1	1	1	1	1	1	1	1	1	1
57	Ashish Jadhav	3	1	1	0	0	0	1	0	0	0	0

		1										1
58	Jadhav Avinash Shivaji	AB										
	Nishigandha Balasaheb											
59	Jadhav	10	1	1	1	1	1	1	1	1	1	1
60	Prajakta Jadhav	6	0	0	0	1	1	1	1	1	1	0
61	Jadhav Raj Bharat	3	1	1	0	0	0	0	1	0	0	0
62	Suyog Jadhav	10	1	1	1	1	1	1	1	1	1	1
63	Kakad Adesh Keshav	10	1	1	1	1	1	1	1	1	1	1
64	Kasture Shubham Rajesh	9	1	1	0	1	1	1	1	1	1	1
65	Kunal Katare	9	1	1	0	1	1	1	1	1	1	1
66	Kedare Nikhil Prabhakar	10	1	1	1	1	1	1	1	1	1	1
67	Kele Shashank Pramod	10	1	1	1	1	1	1	1	1	1	1
68	Kiran Khairnar	10	1	1	1	1	1	1	1	1	1	1
138	Kavale Ashish Kishor	AB										
	Vadnere Vikrant											
140	Chandrakant	AB										
141	Patil Omkar Eknath	AB										
142	Pagare Nayan Digambar	AB										

# 8. Activity Picture

0		9/admin/reports													- <b>*</b>	TA	= L
moa	Industrial Engineer	ing Quiz-1	Results														
Engineerin	Filter by name / partition by tag / g	roup by name						_	_	_	_	_		Search	BORTG	rid • Respon	ue Grid
ı	Average Score 83% 10% to 100%		Average Time 0:02:55 0:00:15 to 0:09:30			Resp 7	onse 9	s								Score	Histogr
		Score	Started On	Finished On	Time	1 94%	2 92%	3 78%	4 85%	5 75% 8	6 0% 8	7 8 9% 75	9 % 755	10 6 9156			
	01 Aditya Ashok Aher	100% (10/10)	2020-08-25 3:18 PM	2020-08-25 3:21 PM	0:03:17	~	~	~	-	*	× .		-	~			
	CI OS DHIRAL R. AHIRE	100% (10/10)	2020-02-24 11:54 AM	2020-02-24 11:56 AM	0:01:17	~	~	*	*	*			-	*			
	🗆 05 Ajay kumbhar	90% (9/10)	2020-08-25 8:56 PM	2020-08-25 9:00 PM	0:04:01	~	~	×	~	~			~	~			
	G6 Deepak Bhoowan Attarde	100% (10/10)	2020-02-24 5:18 PM	2020-02-24 5:21 PM	0:02:32	~	~	4	4	4		1 4	4	4			
	🗆 09-Atul Bankar	100% (10/10)	2020-02-24 5:55 PM	2020-02-24 5:57 FM	0:01:46	~	~	~	~	~				~			
	11125	90% (9/10)	2020-08-27 8:23 AM	2020-08-27 8-26 AM	0:03:23	~	~	*	*	4	v. :	/ *	~	*			
	11.Divyesh K badgujar	100% (10/10)	2020-08-25 4:37 PM	2020-06-25 4:40 PM	0:03:17	~	v	v	~	4	v .	/ /	4	~			
	121 SONAWANE AKASH VILAS	100% (10/10)	2020-02-24 10:41 AM	2020-02-24 10:44 AM	0:02:21	~	~	×	÷	~	-		4	~			
	13 - Yogita Chandrakant Bagul	100% (10/10)	2020-02-24 4:29 PM	2020-02-24 4:30 PM	0:01:53	~	~	v	2	4	× .	/ v	~	~			
	142 alankar bhaleraa	60% (6/10)	2020-08-25 3:54 PM	2020-08-25 3:54 PM	0:00:35	4	×	~	~	x	× .	/ 3	×	~			
	11 211 Diksha Ahanda Bhove	100% (10/10)	2020-02-24 10:58 AM	2020-02-24 11:03 AM	0:04:36	~	~	~		1				~			
	22 Mayur Bidwe	70% (7/10)	2020-08-25 2:56 PM	2020-08-25 2:59 PM	(0:02:36	*	*	*	*	×	¥ .	· *	*	*			
	🗌 23 Bhushan Sida	40% (4/10)	2020-08-25 2:46 PM	2020-08-25 2:50 PM	0:03:23	~	×	*	×	×	×		*	4			
	1 28 Adesh Chaudhari	100% (10/10)	2020-02-24 11:06 AM	2020-02-24 11:09 AM	0:03:12	~	*	*	-	*	× .		-	~			
	0.31	80% (8/10)	2020-08-25 3:41 PM	2020-08-25 3:44 PM	0:02:43	~	~	×	×	~			4	4			
	C 33 Apurya Danci	100% (10/10)	2020-02-28 8/45 PM	2020-02-28 8x48 PM	0:02:01	4	*	4	4	4	1		4	4			
	35 Sanket Prakash Deore	80% (8/10)	2020-02-24 10:58 AM	2020-02-24 11:01 AM	0:02:43	~	~	*	~	×	× .		*	×			
	37 SIDDHI SHYAMRAO DESHMUKH	100% (10/10)	2020-02-24 10:55 AM	2020-02-24 10:59 AM	0:03:58	4	~	4	~	*			4	~			
	CT 41 Abbridges Chevroles	1000 (10.200)	2020 02 24 000 004	2022 01 24 002 04	0.0016	~			4					~			

9. For review and critique contact: e-mail address of faculty and HOD jagtap.rakesh@kbtcoe.org, hod.mech@kbtcoe.org

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