



COURSE FILE CONTENT

1. Vision and Mission statements of the Institute and Department.
2. PEOs, PSOs and PO statements.
3. VTU, College and Department Calendar.
4. Time Table. (Department and Individual time table)
5. Syllabus copy
6. COs, CO-PO and CO-PSO Mapping and Justification.
7. Students List (Students Attendance Register).
8. Course Plan
9. Course Execution Summary
10. Course Assessment and Evaluation scheme.
11. Assignment Questions-I, II, III
12. Internal Assessment Test –I, II, III (Question Papers)
13. Internal Assessment Test – I, II, III – Scheme of Evaluation.
14. Internal Assessment Test I, II, III Performance Analysis.
15. Remedial and Tutorial Classes information (If any)
16. Final Internal (IA) - CIE and External –SEE Marks.
17. VTU Question papers.
18. Course Exit Survey.
19. Course Self Assessment Report.
20. Final Result Analysis
21. Direct and Indirect Attainment of COs, POs and PSOs.
22. CO Attainment Gap Analysis.
23. Action taken report (ATR) on Gap Analysis.
24. Content beyond syllabus.
25. Instructor report (Innovative Practices)
26. Any other related documents.



VISION AND MISSION OF THE INSTITUTE AND DEPARTMENT

VISION OF THE INSTITUTION

To Produce Professionally Excellent, Knowledgeable, Globally Competitive and Socially Responsible Engineers and Entrepreneurs.

MISSION OF THE INSTITUTION

M1	To Provide Quality Education in Engineering and Management.
M2	To Establish a Continuous Industry-Institute Interaction, Participation and Collaboration to Contribute Skilled Engineers.
M3	To Develop Human Values, Social Values, Entrepreneurship Skills and Professional Ethics among the Technocrats.
M4	To Focus on Innovation and Development of Technologies by Engaging in Cutting Edge Research areas.

VISION OF THE DEPARTMENT

To Produce Professionally Excellent, Knowledgeable, Globally Competitive, Socially Responsible Mechanical Engineers and Entrepreneurs.

MISSION OF THE DEPARTMENT

M1	To provide quality education in Mechanical Engineering and Management.
M2	To establish a continuous industry - institute interaction, participation and collaboration to contribute skilled Mechanical Engineers.
M3	To develop human values, socio-ethical values, entrepreneur skills and professional ethics among Mechanical Engineers.
M4	To focus on Research & Development (R & D) and Innovative Technologies by engaging in cutting edge research areas of Mechanical Engineering.



PROGRAM EDUCATIONAL OBJECTIVES (PEO'S)

PEO1	Graduates of Mechanical Engineering shall Develop Strong Academic Foundation for Successful Professional Career
PEO2	Graduates of Mechanical Engineering Acquires skills to excel in the area of Mechanical Engineering both in Industries and Academics
PEO3	Graduates of Mechanical Engineering Possess awareness towards Higher Education, R & D and Socio-Ethical values

PROGRAM SPECIFIC OUTCOMES (PSO)

PSO 1	Graduates are able to Design, Analyze and Develop Mechanical Systems.
PSO 2	Graduates are Capable of Developing Research Skills in Self Sustainable Energy sources and Composite Materials.



PROGRAM OUTCOMES (PO)

PO 1	Engineering Knowledge	Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO 2	Problem Analysis	Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO 3	Design/ Development of Solutions	Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO 4	Conduct investigations of complex problems	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO 5	Modern tool usage	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
PO 6	The engineer and society	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO 7	Environment and sustainability	Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO 8	Ethics	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO 9	Individual and team work	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO 10	Communication	Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO 11	Project management and finance	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO 12	Life-long learning	Recognize the need for, and have the preparation and ability to engage in Independent and life-long learning in the broadest context of technological change.



VTU, COLLEGE AND DEPARTMENT CALENDAR 2018-19

Academic Calendar of VTU, Belagavi for EVEN Semester of 2018-2019 (Feb 2018 – July 2019)

	II, IV & VI Sem B.E/B.Tech II IV, VI, VIII Sem B.Arch	VIII Sem BE / B.Tech & X Sem B.Arch	IV Sem MCA	VI Sem MCA	IV Sem MBA	IV Sem M.Tech	IV Sem M.Arch	II Sem MCA	II Sem MBA	II Sem M.Tech	II Sem M.Arch
Commencement of EVEN Semester	01.02.2018	01.02.2018	01.02.2018	01.02.2018	28.03.2018	08.01.2018	01.02.2018	17.02.2018	10.02.2018	17.02.2018	23.02.2018
Last Working day of EVEN Semester	23.05.2018	23.05.2018	23.05.2018	23.05.2018	13.07.2018	28.04.2018	06.06.2018	08.06.2018	31.05.2018	08.06.2018	28.06.2018
Practical Examination	28.05.2018 To 06.06.2018	-	28.05.2018 To 02.06.2018	-	-	-	-	11.06.2018 To 16.06.2018	-	11.06.2018 To 16.06.2018	-
Theory Examinations	11.06.2018 To 14.07.2018	28.05.2018 To 08.06.2018	04.06.2018 To 20.06.2018	-	16.07.2018 To 08.08.2018	28.05.2018 To 02.06.2018	-	18.06.2018 To 30.06.2018	04.06.2018 To 18.06.2018	18.06.2018 To 30.06.2018	02.07.2018 To 12.07.2018
Viva Voce	-	11.06.2018 To 16.06.2018	-	-	-	-	-	-	-	-	-
Summer Project / Professional Training	-	-	-	28.5.2018 To 08.08.2018 [Submission of Report to VTU]	15.05.2018 To 30.05.2018 [Submission of Report to VTU]	02.05.2018 To 19.05.2018 [Submission of Report to VTU]	-	-	-	-	-
Commencement of ODD Semester	01.08.2019	-	01.08.2019	-	-	-	-	01.08.2019	01.08.2019	01.08.2019 [Internship of 16 Weeks]	01.08.2019



CALENDER OF EVENTS
ACADEMIC YEAR 2018 – 19 [(EVEN SEMESTER) FEB – JULY 2019]

Week (Session)	Sun	Mon	Tue	Wed	Thur	Fri	Sat	Institution / Department Events	VTU Holidays	
1 ST	FEBRUARY 2019									
						1	2	1 st Commencement of UG Semester & HOD Meeting.		
2 ND	3	4	5	6	7	8	9			
3 RD	10	11	12	13	14	15	16			
4 TH	17	18	19	20	21	22	23			
5 TH	24	25	26	27	28			25 th HOD Meeting.		
	MARCH 2019									
						1	2			
6 TH	3	4	5	6	7	8	9		04 th MahaShivRatri.	
7 TH	10	11	12	13	14	15	16	11 th , 12 th & 13 th IA Test-I. 15 th & 16 th Mandara 2019		
8 TH	17	18	19	20	21	22	23	22 nd SMS IA-I Marks & Attendance to Parents.		
9 TH	24	25	26	27	28	29	30	25 th HOD Meeting.		
10 TH	31									
	APRIL 2019									
		1	2	3	4	5	6		6 th Ugadi Festival	
11 TH	7	8	9	10	11	12	13			
12 TH	14	15	16	17	18	19	20	15 th , 16 th & 18 th IA Test-II. 14 th – Last Working Day for IV Sem M.Tech.	14 th Dr. B R Ambedkar Jayanthi. 17 th Mahaveer Jayanthi. 19 th Good Friday	
13 TH	21	22	23	24	25	26	27	22 nd HOD Meeting. 25 th SMS IA-2 Marks & Attendance to Parents		
14 TH	28	29	30							



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Department of Mechanical Engineering



MAY 2019								
				1	2	3	4	1 st May Day,
15 TH	5	6	7	8	9	10	11	7 th Basava Jayanthi.
16 TH	12	13	14	15	16	17	18	17 th , 18 th & 19 th IA Test-III. 13 rd Last Working Day of M. Tech II Semester.
17 TH	19	20	21	22	23	24	25	23 rd HOD Meeting 23 th Last Working Day of UG Semester.
18 TH	26	27	28	29	30	31		28 th SMS Final IA Marks & Attendance to parents.
27 th May – 7 th June 2019 VTU Theory Examinations (B. E., VIII Semester).								
11 th June – 17 th June 2019 VTU Projects Viva-Voce (B. E., VIII Semester).								
27 th May – 07 th June 2019 VTU Practical Examinations (B. E., I, II, III, IV, V, VI & VII Semesters).								
10 th June – 16 th July 2019 VTU Theory Examinations (B. E., I, II, III, IV, V, VI & VII Semesters).								
01 st Mar 2019 – Commencement of M. Tech II semester.								
01 th July – 12 th July 2019 VTU Theory Examinations (M. Tech, II Semester).								
24 th June 2019 – 29 th June 2019 Summer Project / Vocational Training (M. Tech II semester)								
28 th Dec 2018 – Commencement of M. Tech IV Semester.								
27 th May – 31 st May 2019 VTU Theory Examinations (M. Tech, IV Semester).								
03 th June – 18 th June 2019 VTU Project Report Submission (M. Tech, IV Semester).								



SYLLABUS COPY 2018 - 19

Course	Code	Credits	L-T-P	Assessment Exam		Duration
				SEE	CIA	
MTO	18ME35B / 45B	04	4-0-0	80	20	3Hrs

Module-1 MACHINE TOOLS

10 hours

MACHINE TOOLS Introduction, Classification, construction and specifications of lathe, drilling machine, milling machine, boring machine, broaching machine, shaping machine, planning machine, grinding machine [Simple sketches showing major parts of the machines]

Module-2 MACHINING PROCESSES

10 hours

MACHINING PROCESSES Introduction, Types of motions in machining, turning and Boring, Shaping, Planning and Slotting, Thread cutting, Drilling and reaming, Milling, Broaching, Gear cutting and Grinding, Machining parameters and related quantities.[Sketches pertaining to relative motions between tool and work piece only]

Module-3

10 hours

CUTTING TOOL MATERIALS, GEOMETRY AND SURFACE FINISH

CUTTING TOOL MATERIALS, GEOMETRY AND SURFACE FINISH Introduction, desirable Properties and Characteristics of cutting tool materials, cutting tool geometry, cutting fluids and its applications, surface finish, effect of machining parameters on surface finish. Machining equations for cutting operations: Turning, Shaping, Planning, slab milling cylindrical grinding and internal grinding, Numerical Problems

Module-4 MECHANICS OF MACHINING PROCESSES

10 hours

MECHANICS OF MACHINING PROCESSES Introduction, Chip formation, Orthogonal cutting, Merchant's model for orthogonal cutting, Oblique cutting, Mechanics of turning process, Mechanics of drilling process, Mechanics of milling process, Numerical problems.

Module-5 TOOL WEAR, TOOL LIFE

10 hours

TOOL WEAR, TOOL LIFE: Introduction, tool wear mechanism, tool wear equations, tool life equations, effect of process parameters on tool life, machinability, Numerical problems
ECONOMICS OF MACHINING PROCESSES: Introduction, choice of feed, choice of cutting speed, tool life for minimum cost and minimum production time, machining at maximum efficiency, Numerical problems



COs, CO-PO MAPPING AND JUSTIFICATION 2018-19

CO's	DESCRIPTION
18C213.1	Discuss the operations of various machine tools machines
18C213.2	Describe various machining processes, parameters & relative quantities
18C213.3	Explain different cutting tool materials, Geometry & surface finish
18C213.4	Apply mechanics of machining process to machine tool operations
18C213.5	Analyze tool wear mechanisms and equations to enhance tool life and minimize machining cost.

CO-PO/PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
18C213.1	3	2						2				3		2
18C213.2	3	2						2				3		2
18C213.3	3	2						2				3		2
18C213.4	3	2						2				3		2
18C213.5	3	2						2				3		2
AVG	3	2						2				3		2

*Note: - 1.Slight (Low)

2.Modarate (Medium)

3.Substantial (High).



JUSTIFICATION FOR THE CO WITH THE PO (1-12)

- PO1:** All the contents of this course are based on the knowledge of science, mathematics and fundamentals of engineering. Therefore all CO's are mapped with high correlation 3.
- PO2:** The students apply the knowledge of engineering to identify, formulate and analyze the complex problems. Therefore all CO's are mapped with moderate correlation 2.
- PO3:** The students will not be able to design and develop the solution for complex engineering problems that meet the specified needs with appropriate consideration for the public. Therefore none of the CO's is mapped.
- PO4:** Students will not be able to design and develop the mathematical solutions for various complex problems related to computer integrated manufacturing. . Therefore none of the CO's is mapped.
- PO5:** Students will not be able to use modern tools for analyzing the complex problems and apply appropriate technique of real life applications. Therefore none of the CO's is mapped.
- PO6:** Social and health issues are not addressed by any of the modules. Therefore none of the CO's is mapped.
- PO7:** Students will not be able to understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge. . Therefore none of the CO's is mapped.
- PO8:** Students are able to apply ethical principles and commit to professional ethics and responsibilities for engineering practice. Therefore all CO's is mapped with moderate correlation 2.
- PO9:** Team work is not addressed by any of the modules. Therefore none of the CO's is mapped.
- PO10:** Communication is not addressed by any of the modules. Therefore none of the CO's is mapped.
- PO11:** Project management and finance is not addressed by any one of the modules. Therefore none of the CO's is mapped.
- PO12:** Students are able to recognise the need and have ability to engage in independent principles for lifelong learning for technological change. Therefore all CO's are mapped with high correlation 3.



CO-PSO MAPPING MATRIX

CO's \ PSO's	PSO1	PSO2
18C213.1		2
18C213.2		2
18C213.3		2
18C213.4		2
18C213.5		2
Average		2

*Note: - 1.Slight (Low) 2.Modarate (Medium) 3.Substantial (High).

JUSTIFICATION FOR THE CO WITH THE PSO (1-2)

PSO1: The contents of this course are not based on design and analysis of the mechanical systems. Hence none of the CO's is mapped.

PSO2: Contents of this course develop any research skills in self sustainable energy sources and composites. Hence all the CO's are mapped with moderate correlation 2.



STUDENTS LIST

Sl.No	USN	NAME	Sl.No	USN	NAME
B-1	3VC14ME014	ASHOK	B-31	3VC16ME064	PRAVEEN M
B-2	3VC14ME023	FAISAL	B-32	3VC16ME073	RAMESH BABU G R
B-3	3VC15ME007	ANGADI SHRIDHAR	B-33	3VC16ME080	S BASAVARAJA
B-4	3VC15ME011	P BHEEMRAJ	B-34	3VC16ME084	SAI THEJA S L
B-5	3VC15ME012	CHAKRISH B	B-35	3VC16ME085	SAI VENKATESHA M
B-6	3VC15ME015	DASHARATH S	B-36	3VC16ME097	SHREESHA
B-7	3VC15ME021	GAGAN M	B-37	3VC16ME104	SRIRANGANATH DESAI
B-8	3VC15ME061	NASIR AHMED K	B-38	3VC16ME105	SUGURESHWARA S
B-9	3VC15ME067	N MEHER BABA	B-39	3VC16ME109	SUNIL T
B-10	3VC15ME068	PANDURANGA V	B-40	3VC16ME111	SHANKARNARAYA
B-11	3VC15ME073	POOJARI SHIDDALINGA LAXMAN	B-41	3VC16ME112	THIPPESHA V
B-12	3VC15ME078	PREMKUMAR G T	B-42	3VC16ME113	TIRUMALA JOSHI
B-13	3VC15ME100	SOHAIL K	B-43	3VC16ME117	VIJAYA KUMAR N
B-14	3VC15ME113	U O KARTHIK	B-44	3VC16ME119	VINAYAKA P
B-15	3VC15ME122	VISHAL S NAVALE	B-45	3VC16ME122	SHIVA KUMAR B
B-16	3VC16ME006	ABHISHEK PARAPPA M	B-46	3VC16ME409	DODDANAGOWDA G
B-17	3VC16ME009	A MALLIKARJUNA REDDY	B-47	3VC16ME416	KIRAN KUMAR R M
B-18	3VC16ME011	ANAND M	B-48	3VC16ME417	MD RAFIQ K
B-19	3VC16ME012	ANIL KUMAR	B-49	3VC17ME402	ASHWINI KURABARA
B-20	3VC16ME015	B MAHIDHAR REDDY	B-50	3VC17ME403	BR SHARANABASAVA
B-21	3VC16ME016	B VIJAY KUMAR	B-51	3VC17ME405	S DEEPAK
B-22	3VC16ME037	KADIMETLA SREENIVASULU	B-52	3VC17ME407	C DHANALAKSHMI
B-23	3VC16ME040	KARTHIK M	B-53	3VC17ME411	GOVINDA G
B-24	3VC16ME044	M SAI CHAITHANYA	B-54	3VC17ME417	KARTHIK K
B-25	3VC16ME046	MANJUNATHA P	B-55	3VC17ME420	M SRIHARI
B-26	3VC16ME055	NAFEESA BEGUM	B-56	3VC17ME421	MANJESH V R
B-27	3VC16ME057	NAGARAJGOUD PATIL	B-57	3VC17ME422	MANJUNATHA BETAGERI
B-28	3VC16ME059	NAVEENKUMAR G P	B-58	3VC17ME424	MARUTHI REDDY K
B-29	3VC16ME062	PRAMOD S H	B-59	3VC17ME426	MD IRFAN
B-30	3VC16ME063	PRASHANTHAGOWDA	B-60	3VC17ME432	N SAI DURGA



COURSE PLAN 2018-19-20 (Even Sem)

Staff Name: B G Chandru	Course Type: Core	Sem / Sec: 4/B
Course Name: M.T.O	Course Code: 18ME45B	Total No. of Lecture Hours: 50
Max marks: 80	Prerequisites: Elements of Mechanical Engg	


Sl.No	Module Name	Hours Required	Assessment Strategy
01	Machine Tools	10 Hrs	CIE , SEE
02	Machining Processes	10 Hrs	CIE , SEE
03	Cutting Tool Materials, Geometry And Surface Finish	10 Hrs	CIE , SEE
04	Mechanics Of Machining Processes	10 Hrs	CIE , SEE
05	Tool Wear, Tool Life	10 Hrs	CIE , SEE

TEXT BOOKS:

1. Manufacturing Technology Vol I & II P.N.Rao Tata McGraw Hill Pub. Co. Ltd., New Delhi
2. A textbook of Production Technology Vol I and II Sharma, P.C., S. Chand & Company Ltd., New Delhi
3. Manufacturing Science Amithab Gosh & A.K.Malik East-West press

Note: Planning of syllabus to be covered as per units given in VTU syllabus


Staff Signature


HOD
Head of the Department,
Mechanical Engineering Department
R.Y.M. Engineering Collage,
Campus: RYMEC, Ballari



COURSE EXECUTION SUMMARY 2018-19

Staff Name: Prof. B G Chandru	Course Type: Core	Sem / Sec: 4/B
Course Name: M.T.O	Course Code: 18ME45B	Total No. of Lecture Hours: 50
Max marks: 80	Prerequisites: Elements of Mechanical Engg	

Sl. No.	Date	Time/Period	Topic covered	Remarks
01	4/02/2019	2 nd	Introduction, Classification	
02	5/02/2019	4 th	construction and specifications of lathe	
03	6/02/2019	6 th	Explanation of drilling machine	
04	7/02/2019	5 th	Explanation of milling machine	
05	8/02/2019	2 nd	Explanation of boring machine	
06	9/02/2019	4 th	Explanation of broaching machine	
07	11/02/2019	6 th	Explanation of shaping machine	
08	12/02/2019	5 th	Explanation of planning machine	
09	13/02/2019	2 nd	Introduction, Types of motions in machining,	
10	14/02/2019	4 th	Explanation of turning and Boring,	
11	15/02/2019	6 th	Explanation of Shaping,	
12	16/02/2019	5 th	Explanation of Drilling and reaming	
13	18/02/2019	2 nd	Explanation of Milling	
14	19/02/2019	4 th	Explanation of Thread cutting	
15	20/02/2019	6 th	Machining parameters and related quantities	
16	21/02/2019	5 th	Explanation of Gear cutting	
17	22/02/2019	2 nd	Explanation of Broaching	
18	23/02/2019	4 th	Introduction, desirable Properties and Characteristics of cutting tool materials	
19	25/02/2019	6 th	cutting tool geometry, cutting fluids and its applications	
20	26/02/2019	5 th	surface finish, effect of machining parameters on surface finish	
21	27/02/2019	2 nd	Machining equations for cutting operations	
22	28/02/2019	4 th	Machining equations for cutting operations	
23	01/03/2019	6 th	Machining equations for cutting operations	
24	02/03/2019	5 th	Explanation for Turning, Shaping	
25	03/03/2019	2 nd	Explanation for slab milling cylindrical grinding and internal	



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Department of Mechanical Engineering



			grinding	
26	04/03/2019	4 th	Introduction, Chip formation, Orthogonal cutting, Oblique cutting	
27	05/03/2019	6 th	Orthogonal cutting	
28	06/03/2019	5 th	Merchants model for orthogonal cutting	
29	07/03/2019	2 nd	Merchants model for orthogonal cutting	
30	08/03/2019	4 th	Merchants model for orthogonal cutting	
31	17/03/2019	6 th	Merchants model for orthogonal cutting	
32	18/03/2019	5 th	Mechanics of turning	
33	19/03/2019	2 nd	Mechanics of drilling process	
34	20/03/2019	4 th	Mechanics of milling	
35	21/03/2019	6 th	Numerical problems on Merchants model for orthogonal cutting	
36	26/03/2019	5 th	Numerical problems on Merchants model for orthogonal cutting	
37	27/03/2019	2 nd	Numerical problems on Merchants model for orthogonal cutting	
38	28/03/2019	4 th	Introduction, , , Numerical problems ECONOMICS OF MACHNING PROCESSES:;	
39	01/04/2019	6 th	Tool wear mechanism	
40	02/04/2019	5 th	Tool wear equations	
41	03/04/2019	2 nd	Tool wear equations	
42	05/04/2019	4 th	Tool wear equations	
43	23/04/2019	6 th	Tool life equations, effect of process parameters on tool life, machianbility	
44	24/04/2019	5 th	Introduction, choice of feed, choice of cutting speed, tool life for minimum cost and minimum production time	
45	02/05/2019	2 nd	Introduction, choice of feed, choice of cutting speed, tool life for minimum cost and minimum production time	
46	05/05/2019	4 th	Problems on tool wear	
47	06/05/2019	6 th	Problems on tool wear	
48	08/05/2019	5 th	Problems on tool wear	
49	09/05/2019	2 nd	Problems on tool wear	
50	10/05/2019	4 th	Problems on tool wear	



COURSE EVALUATION AND ASSESSMENT SCHEME-2018-19

	What		To Whom	When/ Where (Frequency in the course)	Max Marks	Evidence Collected
Direct Assessment Methods	CIE	Continuous Internal Evaluation	Students	Thrice(Average of the best two will be computed)	15	Blue Books
		Assignment		One(During Semester)	05	Assignment Books
		Practical Assessment		Once	20	Practical evaluation
	SEE	Semester Final Examination		End of Course (Answering One of two questions from five Modules)	80	Result sheet
		Practical Examination		One question from lot	80	Result sheet
Indirect Assessment Methods	Students Feedback		Students	End of the course	-	Questionnaire
	Course Exit Survey					

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy)



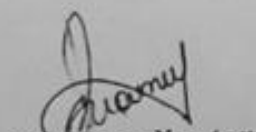
CONTINUOUS INTERNAL EVALUATION-I (2018-19 EVEN Sem)

Course: M.T.O	Course Code: 18ME45B	Sem: 4 th /B
Date: 12/03/2019	Time: 10.30-12.00 AM	Max marks: 30
Course offered by : B G Chandru		

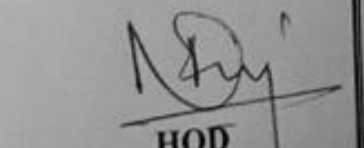
NOTE : Answer five questions, each carrying 6 marks

Q No	QUESTIONS	BTL	CO	PO
1	With neat sketch explain constructional features of a drilling machine OR	L2	18C213.1	1,2,8,12
2	With neat sketch explain constructional features of a Boring machine	L2	18C213.1	1,2,8,12
3	Explain the classification of grinding machine OR	L2	18C213.1	1,2,8,12
4	Explain the classification milling of machine	L2	18C213.1	1,2,8,12
5	With neat sketch explain specifications of lathe OR	L2	18C213.1	1,2,8,12
6	Write on types of motions in machining	L2	18C213.2	1,2,8,12
7	With a neat sketch explain relative motions in facing and thread cutting OR	L2	18C213.2	1,2,8,12
8	With a neat sketch explain relative motions in cylindrical grinding	L2	18C213.2	1,2,8,12
9	Explain cutting parameters of broaching OR	L2	18C213.2	1,2,8,12
10	Explain cutting parameters of shaper	L2	18C213.2	1,2,8,12


Staff


QP Coordinator


Course Coordinator


HOD
Head of the Department
Mechanical Engineering
R.Y.M. Engineering College
Ballari




SCHEME OF EVALUATION FOR CIE-I (2018-19 EVEN Sem)

Course: M.T.O	Course Code: 18ME45B	Sem: 4 th /B
Date 12/03/2019	Time: 10.30-12.00 AM	Max marks: 30
Course offered by : B G Chandru		


Q No	QUESTIONS	BTL	CO	PO
1	Sketch 3M + Expl;n 3M	L2	18C213.1	1,2,8,12
2	Sketch 3M + Expl;n 3M	L2	18C213.1	1,2,8,12
3	Classification of grinding machine with brief explanation 6M	L2	18C213.1	1,2,8,12
4	Classification of grinding machine with brief explanation 6M	L2	18C213.1	1,2,8,12
5	Sketch 3M + Expl;n 3M	L2	18C213.1	1,2,8,12
6	3 types motions in machining, 2 x 3M	L2	18C213.2	1,2,8,12
7	Sketch 3M + Expl;n 3M	L2	18C213.2	1,2,8,12
8	Sketch 3M + Expl;n 3M	L2	18C213.2	1,2,8,12
9	Any 6 cutting parameters of broaching-6M	L2	18C213.2	1,2,8,12
10	Any 6 cutting parameters of shaper-6M	L2	18C213.2	1,2,8,12

Note: BTL (Blooms Taxonomy Level) CO (Course Outcome)


Staff


QP Coordinator


Course Coordinator

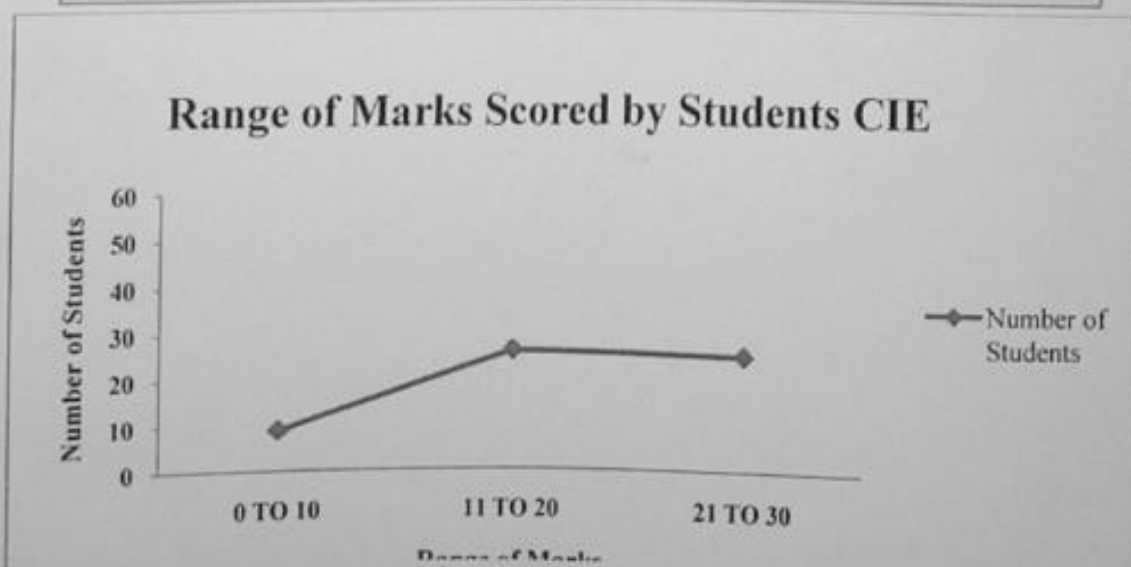
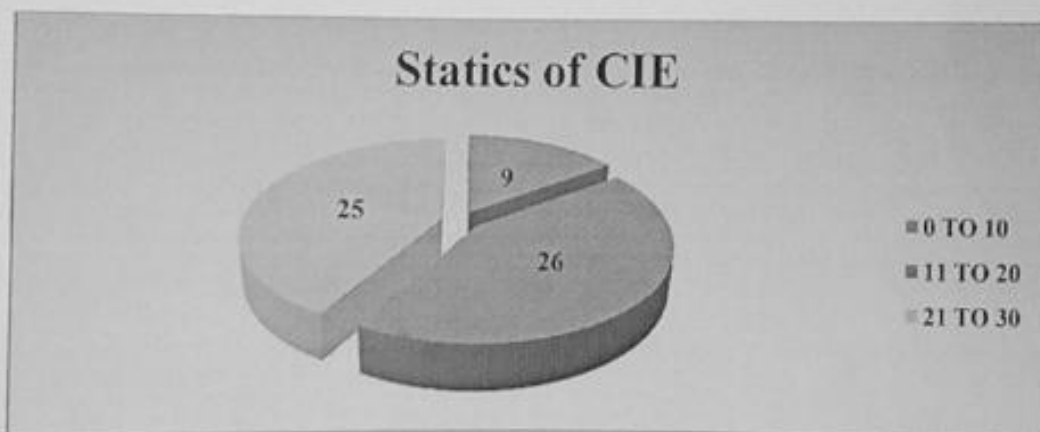

HOD
Head of the Department
Mechanical Engineering Dept



CIE-I PERFORMANCE ANALYSIS

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
CO mapping	1	1	1	1	1	2	2	2	2	2
Max Marks /Question	6	6	6	6	6	6	6	6	6	6
Total marks of class /question	148	6	19	55	55	54	24	10	6	43
No. of students attended	31	3	12	21	21	14	14	7	5	18
No of students scored > 60% of marks/Question	23	1	1	9	8	9	2	0	0	8
Percentage of students scored > 60% of marks/Question	74.2	33.3	8.3	42.86	38.1	64.3	14.3	0	0	44.4

Mark range	0-10	11-20	21-30
No. Of Students	06	28	26





ASSIGNMENT-II (2018-19)

Q No	QUESTIONS
1	List and explain desirable properties of cutting tool materials
2	List and explain desirable properties of cutting fluids
3	List and explain purpose of using cutting fluids
4	List and explain purpose types of cutting fluids
5	Define orthogonal and oblique cutting with sketch
6	Differentiate between orthogonal and oblique cutting
7	Explain methods of application of cutting fluids
8	Define surface finish and explain effect of machining parameters on it
9	List and explain characteristics of cutting tool materials
10	With sketch explain types of chips in metal cutting and state conditions favouring in formation
11	State the assumptions made in Merchant's analysis
12	With a neat sketch show different forces forming Merchant's circle
13	. Derive equation $2\Phi + \beta - \alpha = \pi/2$
14	Problem 3 rd and 4 th module
15	With sketch explain angles of single point cutting tool



CONTINUOUS INTERNAL EVALUATION- II (2018-19 EVEN Sem)

Course: M.T.O	Course Code: 18ME45B	Sem: 4 th B
Date: 16/04/2019	Time: 10.00-11.30 AM	Max marks: 30
Course offered by : B G Chandru		

NOTE: Answer any FIVE questions from the following carrying 6 marks each

Q No	QUESTIONS	BTL	CO	PO
1	List and explain desirable properties of cutting tool materials OR A workpiece of 60mm dia and 160mm length is turned in 3 passes. If approach is 20mm, over travel 14mm, speed 30 mpm and feed 0.8mm/rev, calculate machining time	L2	3	1,2,8,12
2		L2	3	1,2,8,12
3	Write on types of cutting fluids OR	L2	3	1,2,8,12
4	Explain methods of application of cutting fluids	L2	3	1,2,8,12
5	Define surface finish and explain effect of work and tool material on it. OR With sketch explain continuous chips and state conditions favouring in Formation	L2	3	1,2,8,12
6		L3	4	1,2,8,12
7	Define orthogonal and oblique cutting with sketch OR	L2	4	1,2,8,12
8	Derive equation $2\Phi + \beta - \alpha = \pi/2$	L2	4	1,2,8,12
9	Differentiate between orthogonal and oblique cutting OR During an orthogonal machining on mild steel the following results are obtained,	L2	4	1,2,8,12
10	Uncut chip thickness 0.25mm, avg chip thickness 0.75mm, width of chip 2.5mm, rake angle 0° , Cutting force component 950N and Thrust component 475N, Evaluate coefficient of friction and Shear stress of work material	L2	4	1,2,8,12

Note: BTL (Blooms Taxonomy Level) CO (Course Outcome)

Staff

QP Coordinator

Course Coordinator

HOD

Head of the Department,
Mechanical Engineering Department



Scheme of Evaluation-IA II (2018-19)

Course: M.T.O	Course Code: 18ME45B	Sem: 4 th B
Date: 16/04/2019	Time: 10.00-11.30 AM	Max marks: 30
Course offered by : B G Chandru		

Q No	QUESTIONS	BTL	CO	PO
1	List 2 + Expl'n 4	L2	18C213.3	1,2,8,12
2	Problem solving-6M	L2	18C213.3	1,2,8,12
3	Types of cutting fluids 2 x 3M	L2	18C213.3	1,2,8,12
4	Methods of application of cutting fluids 2 x 3M	L2	18C213.3	1,2,8,12
5	Definition of surface finish and explain effect of work and tool material 2 + 2 x 2	L2	18C213.3	1,2,8,12
6	Explanation for conditions favouring in Formation Sketch 1 + Expl'n 4 + Conditions 1M	L3	18C213.4	1,2,8,12
7	Explanation for orthogonal and oblique cutting with sketch Sketch 2 + Definition 2 x 3M	L2	18C213.4	1,2,8,12
8	Derivation of $2\Phi + \beta - \alpha = \pi/2$ eq-06M	L2	18C213.4	1,2,8,12
9	Differences between orthogonal and oblique cutting 1 x 6M	L2	18C213.4	1,2,8,12
10	Problem solving 3 + 3M	L2	18C213.4	1,2,8,12

Staff

QP Coordinator

Course Coordinator

HOD

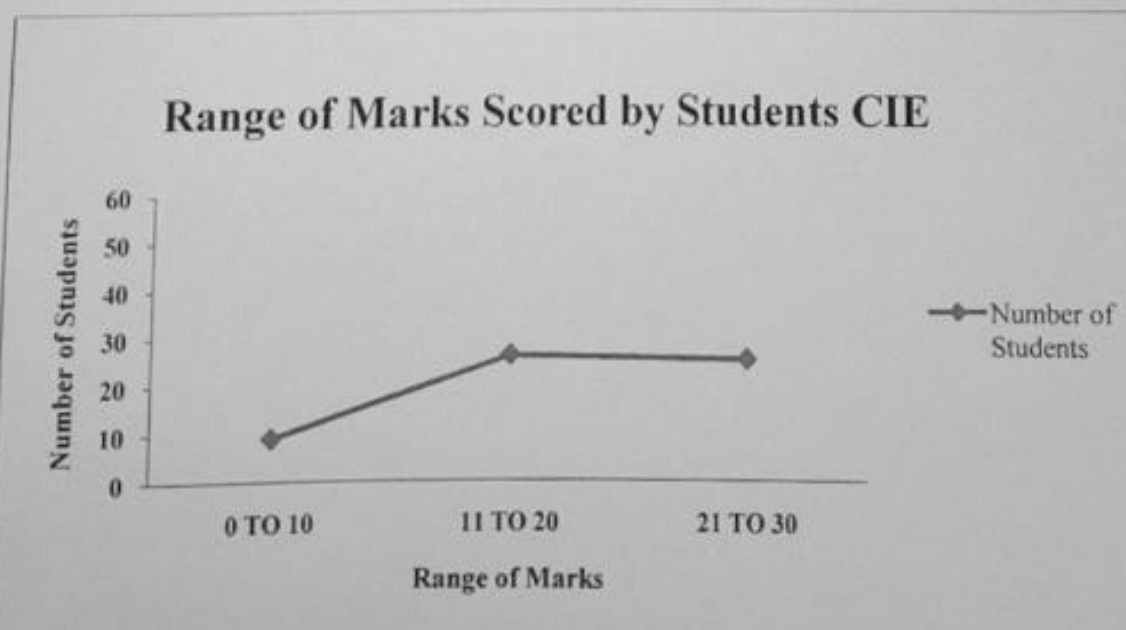
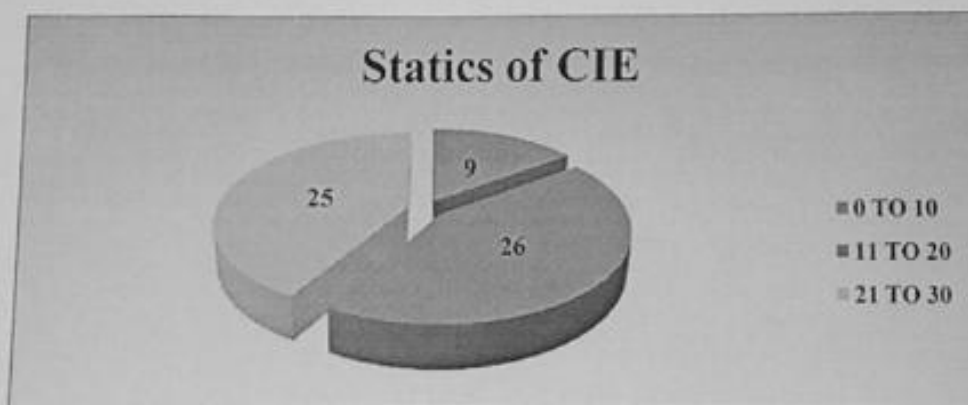
Head of the Department
Mechanical Engineering



CIE-II PERFORMANCE ANALYSIS

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
CO mapping	4	4	4	4	5	5	5	5	5	5
Max Marks /Question	6	6	6	6	6	6	6	6	6	6
Total marks of class /question	195	97	78	76	64	91	80	33	140	29
No. of students attended	44	22	30	24	25	29	37	7	52	10
No of students scored > 60% of marks/Question	32	14	8	15	3	12	7	5	14	3
Percentage of students scored > 60% of marks/Question	73	64	27	63	12	41	19	71	27	30

Mark range	0-10	11-20	21-30
No. Of Students	10	25	25





ASSIGNMENT -III (2018-19 EVEN Sem

Q No	QUESTIONS
1	Explain types of chips
2	Solve an expression for chip flow angle in turning
3	Solve an expression for effective rake angle in turning
4	Differentiate between Up milling and down milling
5	Explain merchants model for orthogonal cutting
6	Explain merchants model for Oblique cutting
7	Numerical Problems
8	Define tool wear and explain types
9	Define tool failure and explain two failure criteria
10	Write on effect of rake angle, nose radius and cutting speed on tool life
11	With a neat sketch explain different cost components in machining
12	Solve an expression for tool life for minimum production cost
13	Explain tool wear mechanism
14	Solve an expression for tool life for machining at maximum efficiency
15	Numerical Problems



CONTINUOUS INTERNAL EVALUATION-III (2018-19 EVEN Sem)


Course: M.T.O	Course Code: 18ME45B	Sem: 4 th B
Date: 18/05/2019	Time: 03.00-04.30 PM	Max marks: 30
Course offered by : B G Chandru		

NOTE: Answer any FIVE questions from the following


Q No	QUESTIONS	BTL	CO	PO
1	Solve an expression for chip flow angle in turning OR Solve an expression for effective rake angle in turning	L3	4	1,2,8,12
2		L3	4	1,2,8,12
3	Differentiate between Up milling and down milling OR In a turning experiment a 50mm bar is turned at a cutting speed of 30 m/min.	L2	4	1,2,8,12
4	The feed and depth of cut are 0.24 and 1.8 respectively. Evaluate Specific cutting resistance and unit power. Consider $F_c=800N$	L3	4	1,2,8,12
5	Define tool wear and explain types OR Define tool failure and explain two failure criteria	L2	5	1,2,8,12
6		L2	5	1,2,8,12
7	A cutting tool cutting at 25 m/min gave a life of 1 Hr between regrinds for roughening cut. Evaluate possible life when engaged in finishing cuts. OR Write on effect of rake angle, nose radius and cutting speed on tool life	L3	5	1,2,8,12
8		L2	5	1,2,8,12
9	With a neat sketch explain different cost components in machining. OR Solve an expression for tool life for minimum production cost	L2	5	1,2,8,12
10		L3	5	1,2,8,12

Note: BTL (Blooms Taxonomy Level) CO (Course Outcome)


Staff


QP Coordinator


Course Coordinator


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Head of the Department
Mechanical Engineering



SCHEME OF EVALUATION FOR CIE-III (2018-19 EVEN Sem)

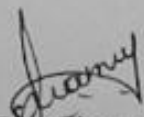
Course: M.T.O	Course Code: 18ME45B	Sem: 4 th B
Date: 18/05/2019	Time: 03.00-04.30 PM	Max marks: 30
Course offered by : B G Chandru		

NOTE: Answer any FIVE questions from the following

Q No	QUESTIONS	BTL	CO	PO
1	Derivation for chip flow angle in turning 6M	L3	4	1,2,8,12
2	Derivation for effective rake angle in turning 6M	L3	4	1,2,8,12
3	Differences between Up milling and down milling 1 x 6M	L2	4	1,2,8,12
4	Problem solving 3 + 3M	L3	4	1,2,8,12
5	Definition tool wear and types 2 + 2 x 2M	L2	5	1,2,8,12
6	Definition for tool failure and failure criteria 2 + 2 x 2M	L2	5	1,2,8,12
7	Problem solving 3 + 3M	L3	5	1,2,8,12
8	Definitions of rake angle, nose radius and cutting speed on tool life 2+2+2	L2	5	1,2,8,12
9	With neat Sketch different cost components in machining. 6M	L2	5	1,2,8,12
10	Derivation for tool life for minimum production cost 6M	L3	5	1,2,8,12

Note: BTL (Blooms Taxonomy Level) CO (Course Outcome)


Staff


QP Coordinator


Course Coordinator

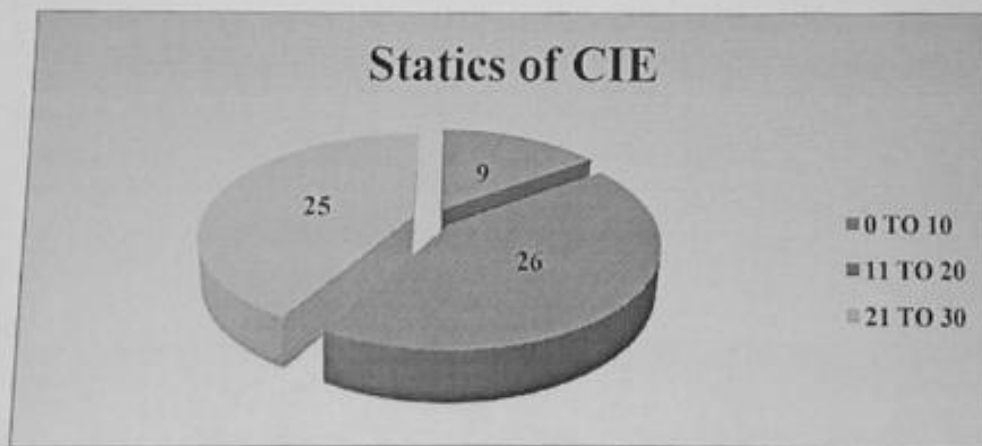

HOD



CIE-III PERFORMANCE ANALYSIS

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
CO mapping	4	4	4	4	5	5	5	5	5	5
Max Marks /Question	6	6	6	6	6	6	6	6	6	6
Total marks of class /question	76	57	240	45	160	50	29	69	47	121
No. of students attended	15	15	54	11	42	14	10	20	16	26
No of students scored > 60% of marks/Question	14	9	40	7	23	9	3	10	7	19
Percentage of students scored >60% of marks/Question	93	60	74	64	55	64	30	50	44	73

Mark range	0-10	11-20	21-30
No. Of Students	09	26	25





FINAL CIE AND SEE MARKS

Roll No	USN	Name of the Student	CIE	SEE	Roll No	USN	Name of the Student	CIE	SEE
B-1	3VC14ME014	ASHOK	23	67	B-31	3VC16ME064	PRAVEEN M	22	66
B-2	3VC14ME023	FAISAL	22	66	B-32	3VC16ME073	RAMESH BABU G R	22	70
B-3	3VC15ME007	ANGADI SHRIDHAR	22	76	B-33	3VC16ME080	S BASAVARAJA	25	54
B-4	3VC15ME011	P BHEEMRAJ	25	66	B-34	3VC16ME084	SAI THEJA S L	22	65
B-5	3VC15ME012	CHAKRISH B	22	70	B-35	3VC16ME085	SAI VENKATESHA M	26	45
B-6	3VC15ME015	DASHARATH S	26	54	B-36	3VC16ME097	SHREESHA	27	78
B-7	3VC15ME021	GAGAN M	27	65	B-37	3VC16ME104	SRIRANGANATH DESAI	23	74
B-8	3VC15ME061	NASIR AHMED K	26	45	B-38	3VC16ME105	SUGURESHWARA S	22	66
B-9	3VC15ME067	N MEHER BABA	23	78	B-39	3VC16ME109	SUNIL T	22	76
B-10	3VC15ME068	PANDURANGA V	22	74	B-40	3VC16ME111	SHANKARNARAYA	25	66
B-11	3VC15ME073	POOJARI SHIDDALINGA LAXMAN	22	66	B-41	3VC16ME112	THIPPESHA V	22	70
B-12	3VC15ME078	PREMKUMAR G T	25	76	B-42	3VC16ME113	TIRUMALA JOSHI	26	54
B-13	3VC15ME100	SOHAIL K	22	66	B-43	3VC16ME117	VIJAYA KUMAR N	27	65
B-14	3VC15ME113	U O KARTHIK	26	70	B-44	3VC16ME119	VINAYAKA P	23	45
B-15	3VC15ME122	VISHAL S NAVALE	27	54	B-45	3VC16ME122	SHIVA KUMAR B	22	78
B-16	3VC16ME006	ABHISHEK PARAPPA M	23	65	B-46	3VC16ME409	DODDANAGOWDA G	22	74
B-17	3VC16ME009	A MALLIKARJUNA REDDY	22	45	B-47	3VC16ME416	KIRAN KUMAR R M	25	66
B-18	3VC16ME011	ANAND M	22	78	B-48	3VC16ME417	MD RAFIQ K	22	76
B-19	3VC16ME012	ANIL KUMAR	25	74	B-49	3VC17ME402	ASHWINI KURABARA	26	66
B-20	3VC16ME015	B MAHIDHAR REDDY	22	66	B-50	3VC17ME403	BR SHARANABASAVA	27	70
B-21	3VC16ME016	B VIJAY KUMAR	26	76	B-51	3VC17ME405	S DEEPAK	23	54
B-22	3VC16ME037	KADIMETLA SREENIVASULU	27	66	B-52	3VC17ME407	C DHANALAKSHMI	22	65
B-23	3VC16ME040	KARTHIK M	23	70	B-53	3VC17ME411	GOVINDA G	22	45
B-24	3VC16ME044	M SAI CHAITHANYA	22	54	B-54	3VC17ME417	KARTHIK K	25	74
B-25	3VC16ME046	MANJUNATHA P	22	65	B-55	3VC17ME420	M SRIHARI	22	54
B-26	3VC16ME055	NAFEESA BEGUM	23	45	B-56	3VC17ME421	MANJESH V R	26	65



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Department of Mechanical Engineering



B-27	3VC16ME057	NAGARAJGOUR PATIL	22	78	B-57	3VC17ME422	MANJUNATHA BETAGERI	27	45
B-28	3VC16ME059	NAVEENKUMAR G P	26	74	B-58	3VC17ME424	MARUTHI REDDY K	23	78
B-29	3VC16ME062	PRAMOD S H	27	66	B-59	3VC17ME426	MD IRFAN	22	74
B-30	3VC16ME063	PRASHANTHAGOWDA	23	76	B-60	3VC17ME432	N SAI DURGA	22	66

Staff

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HOD

Head of the Department,
Mechanical Engineering Department
R.Y.M. Engineering College,
Cantonment. BELLARY-583 700.



COURSE EXIT SURVEY

Staff Name: B G Chandru	Semester: 4 th	Sec: B
Course Name: M.T.O	Course Code: 18ME45B	Total contact hours: 50
Max marks:80	Prerequisites: EME	
Academic year: 2018-19		

Course Code: 18ME45B	Course Title: M.T.O
Student Name: PREMKUMAR G T	USN: 3VC15ME078

Dear Student

In your opinion, how will you grade yourself in the attainment of the following Course Outcomes (Please tick (✓) in the appropriate column).

Excellent - 5, Very Good - 4, Good - 3, Average - 2, Below Average - 1

Course Outcome		5	4	3	2	1
At the end of the course, students will be able to						
18C213.1	Discuss the operations of various machine tools machines	✓ ---				
18C213.2	Describe various machining processes, parameters & relative quantities		✓ ---			
18C213.3	Explain different cutting tool materials, Geometry & surface finish	✓ ---				
18C213.4	Apply mechanics of machining process to machine tool operations		✓ ---			
18C213.5	Analyze tool wear mechanisms and equations to enhance tool life and minimize machining cost.	✓ ---				

Signature of Student

RLNo.	USN	Name of the Student	CO1	CO2	CO3	CO4	CO5	Sign of the Student
1	3VC14ME014	ASHOK	5	4	3	4	4	
2	3VC14ME023	FAISAL	5	4	4	3	4	



RAO BAHADUR Y. MAHABALESWARAPPA ENGINEERING COLLEGE, BALLARI
Department of Mechanical Engineering



3.	3VC15ME007	ANGADI SHRIDHAR	5	4	3	4	4
4.	3VC15ME011	P BHEEMRAJ	5	4	4	3	4
5.	3VC15ME012	CHAKRISH B	5	4	4	4	3
6.	3VC15ME015	DASHARATH S	5	4	4	4	4
7.	3VC15ME021	GAGAN M	5	4	3	4	4
8.	3VC15ME061	NASIR AHMED K	5	4	4	3	4
9.	3VC15ME067	N MEHER BABA	5	4	4	3	4
10.	3VC15ME068	PANDURANGA V	5	4	4	4	4
11.	3VC15ME073	POOJARI SHIDDALINGA LAXMAN	5	4	3	4	3
12.	3VC15ME078	PREMKUMAR G T	5	4	4	4	4
13.	3VC15ME100	SOHAIL K	5	4	4	4	4
14.	3VC15ME113	U O KARTHIK	5	4	4	4	3
15.	3VC15ME122	VISHAL S NAVALE	5	4	4	4	4
16.	3VC16ME006	ABHISHEK PARAPPA M	5	4	3	4	4
17.	3VC16ME009	A MALLIKARJUNA REDDY	5	4	4	3	4
18.	3VC16ME011	ANAND M	5	4	3	4	4
19.	3VC16ME012	ANIL KUMAR	5	4	4	4	4
20.	3VC16ME015	B MAHIDHAR REDDY	5	4	4	3	4
21.	3VC16ME016	B VIJAY KUMAR	5	4	4	4	4
22.	3VC16ME037	KADIMETLA SREENIVASULU	5	3	4	3	4
23.	3VC16ME040	KARTHIK M	5	4	4	4	4
24.	3VC16ME044	M SAI CHAITHANYA	5	4	4	4	4
25.	3VC16ME046	MANJUNATHA P	5	33	4	4	4
26.	3VC16ME055	NAFEESA BEGUM	5	4	4	4	4
27.	3VC16ME057	NAGARAJGOUD PATIL	5	4	4	4	4
28.	3VC16ME059	NAVEENKUMAR G P	5	4	4	4	4
29.	3VC16ME062	PRAMOD S H	5	4	4	4	4
30.	3VC16ME063	PRASHANTHAGOWDA	5	4	4	4	4
31.	3VC16ME064	PRAVEEN M	5	4	4	4	4
32.	3VC16ME073	RAMESH BABU G R	5	4	4	4	4
33.	3VC16ME080	S BASAVARAJA	5	4	4	4	4
34.	3VC16ME084	SAI THEJA S L	5	4	4	4	4
35.	3VC16ME085	SAI VENKATESHA M	5	4	4	4	4
36.	3VC16ME097	SHREESHA	5	4	4	4	4
37.	3VC16ME104	SRIRANGANATH DESAI	5	4	4	4	4
38.	3VC16ME105	SUGURESHWARA S	5	4	4	4	4
39.	3VC16ME109	SUNIL T	5	4	4	4	4
40.	3VC16ME111	SHANKARNARAYA	5	4	4	4	4
41.	3VC16ME112	THIPPESHA V	5	4	4	4	4
42.	3VC16ME113	TIRUMALA JOSHI	5	4	5	4	4
43.	3VC16ME117	VJAYA KUMAR N	5	4	4	4	4
44.	3VC16ME119	VINAYAKA P	5	4	4	4	4
45.	3VC16ME122	SHIVA KUMAR B	5	4	4	4	4
46.	3VC16ME409	DODDANAGOWDA G	5	4	4	4	4
47.	3VC16ME416	KIRAN KUMAR R M	5	4	4	4	4
48.	3VC16ME417	MD RAFIQ K	5	4	4	4	4
49.	3VC17ME402	ASHWINI KURABARA	5	4	4	4	4
50.	3VC17ME403	BR SHARANABASAVA	5	4	4	4	4
51.	3VC17ME405	S DEEPAK	5	4	4	4	4
52.	3VC17ME407	C DHANALAKSHMI	5	4	4	4	4
53.	3VC17ME411	GOVINDA G	5	4	4	4	4
54.	3VC17ME417	KARTHIK K	5	4	4	4	4
55.	3VC17ME420	M SRIHARI	5	4	4	4	4



COURSE SELF ASSESSMENT REPORT

Staff Name: B G Chandru	Semester: 4 th	Sec: B
Course Name: M.T.O	Course Code: 18ME45B	Total contact hours: 50
Max marks:80	Prerequisites: EME	
Academic year: 2018-19		

Sl. No.	Questionnaires	Ratings				
		Excellent (5)	Very Good (4)	Good (3)	Fair (2)	Poor (1)
01	Are you able to understand various operations of various machine tools machines	✓				
02	Are you able to Describe various machining processes, parameters & relative quantities		✓			
03	Are you able to understand different cutting tool materials, Geometry & surface finish	✓				
04	Are you able to analyze mechanics of machining process to machine tool operations		✓			
05	Are you able to understand and Analyze tool wear mechanisms and equations to enhance tool life and minimize machining cost.	✓				

Signature of Student



RAO BAHADUR Y. MAHABALESWARAPPA ENGINEERING COLLEGE, BALLARI
Department of Mechanical Engineering



RLNo.	USN	Name of the Student	CO1	CO2	CO3	CO4	CO5	Sign of the Student
1	3VC14ME014	ASHOK	5	4	3	4	4	
2	3VC14ME023	FAISAL	5	4	3	4	4	
3	3VC15ME007	ANGADI SHRIDHAR	5	4	4	3	4	
4	3VC15ME011	P BHEEMRAJ	5	4	3	4	4	
5	3VC15ME012	CHAKRISH B	5	4	4	3	4	
6	3VC15ME015	DASHARATH S	5	4	4	4	3	
7	3VC15ME021	GAGAN M	5	4	4	4	4	
8	3VC15ME061	NASIR AHMED K	5	4	3	4	4	
9	3VC15ME067	N MEHER BABA	5	4	4	3	4	
10	3VC15ME068	PANDURANGA V	5	4	4	3	4	
11	3VC15ME073	POOJARI SHIDDALINGA LAXMAN	5	4	4	4	4	
12	3VC15ME078	PREMKUMAR G T	5	4	3	4	3	
13	3VC15ME100	SOHAIL K	5	4	4	4	4	
14	3VC15ME113	U O KARTHIK	5	4	4	4	4	
15	3VC15ME122	VISHAL S NAVALE	5	4	4	4	3	
16	3VC16ME006	ABHISHEK PARAPPA M	5	4	4	4	4	
17	3VC16ME009	A MALLIKARJUNA REDDY	5	4	3	4	4	
18	3VC16ME011	ANAND M	5	4	4	3	4	
19	3VC16ME012	ANIL KUMAR	5	4	3	4	4	
20	3VC16ME015	B MAHIDHAR REDDY	5	4	4	4	4	
21	3VC16ME016	B VIJAY KUMAR	5	4	4	3	4	
22	3VC16ME037	KADIMETLA SREENIVASULU	5	4	4	4	4	
23	3VC16ME040	KARTHIK M	5	3	4	3	4	
24	3VC16ME044	M SAI CHAITHANYA	5	4	4	4	4	
25	3VC16ME046	MANJUNATHA P	5	4	4	4	4	
26	3VC16ME055	NAFEESA BEGUM	5	33	4	4	4	
27	3VC16ME057	NAGARAJGOUND PATIL	5	4	4	4	4	
28	3VC16ME059	NAVEENKUMAR G P	5	4	4	4	4	
29	3VC16ME062	PRAMOD S H	5	4	4	4	4	
30	3VC16ME063	PRASHANTHAGOWDA	5	4	4	4	4	
31	3VC16ME064	PRAVEEN M	5	4	4	4	4	
32	3VC16ME073	RAMESH BABU G R	5	4	4	4	4	
33	3VC16ME080	S BASAVARAJA	5	4	4	4	4	
34	3VC16ME084	SAI THEJA S L	5	4	4	4	4	
35	3VC16ME085	SAI VENKATESHA M	5	4	4	4	4	
36	3VC16ME097	SHREESHA	5	4	4	4	4	
37	3VC16ME104	SRIRANGANATH DESAI	5	4	4	4	4	
38	3VC16ME105	SUGURESHWARA S	5	4	4	4	4	
39	3VC16ME109	SUNIL T	5	4	4	4	4	
40	3VC16ME111	SHANKARNARAYA	5	4	4	4	4	
41	3VC16ME112	THIPPESHA V	5	4	4	4	4	
42	3VC16ME113	TIRUMALA JOSHI	5	4	4	4	4	
43	3VC16ME117	VIJAYA KUMAR N	5	4	5	4	4	
44	3VC16ME119	VINAYAKA P	5	4	4	4	4	
45	3VC16ME122	SHIVA KUMAR B	5	4	4	4	4	
46	3VC16ME409	DODDANAGOWDA G	5	4	4	4	4	
47	3VC16ME416	KIRAN KUMAR R M	5	4	4	4	4	
48	3VC16ME417	MD RAFIQ K	5	4	4	4	4	
49	3VC17ME402	ASHWINI KURABARA	5	4	4	4	4	
50	3VC17ME403	BR SHARANABASAVA	5	4	4	4	4	
51	3VC17ME405	S DEEPAK	5	4	4	4	4	

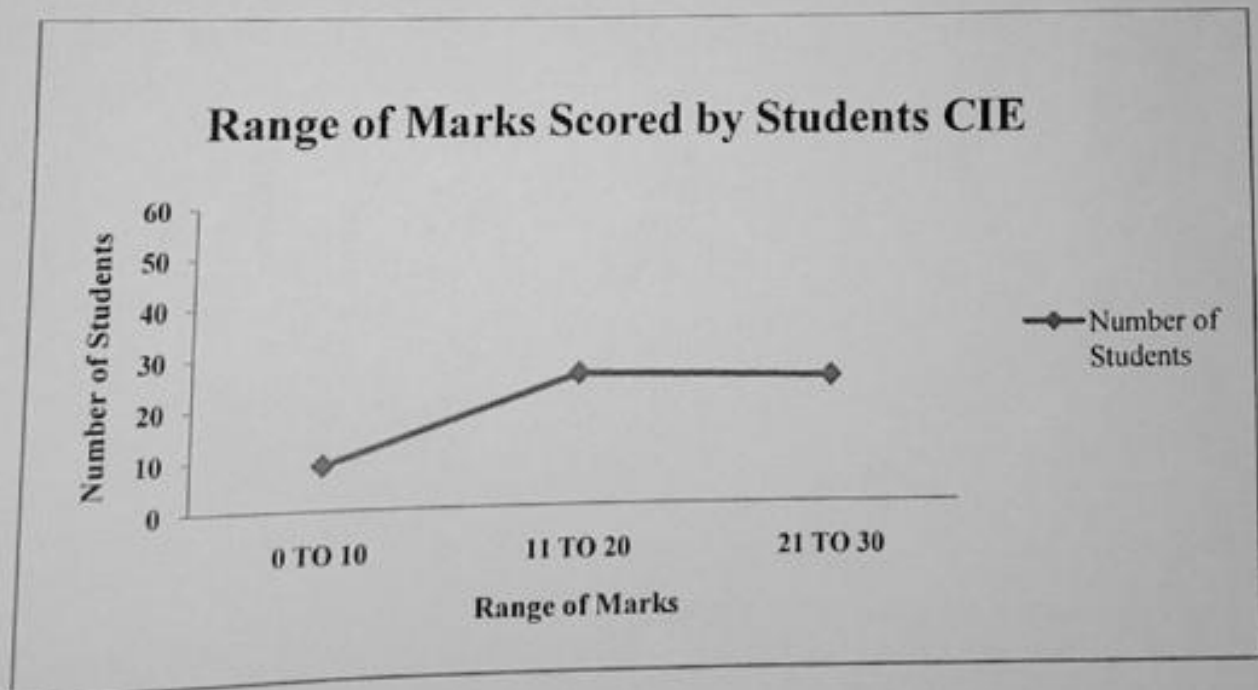
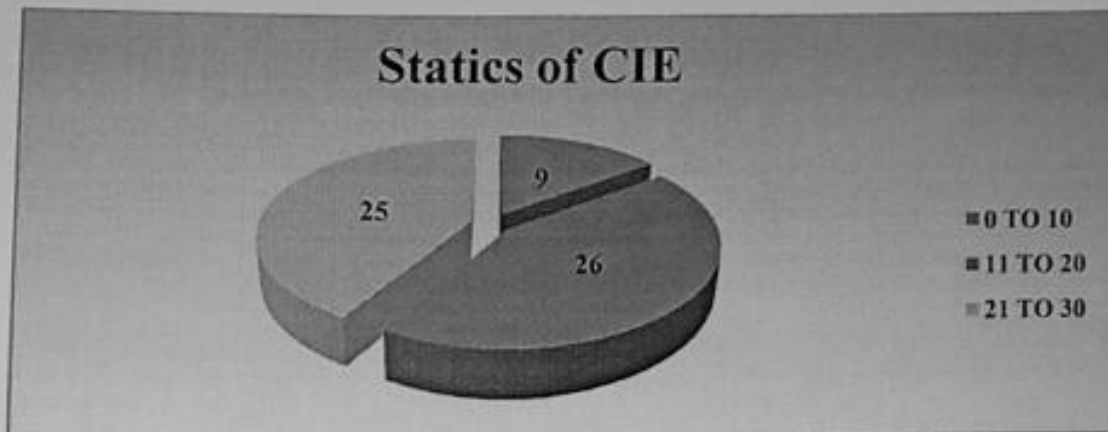


FINAL RESULT ANALYSIS

Result analysis has been done w.r.t CIE and SEE for the academic year 2018-19.

STATISTICS OF CONTINUOUS INTERNAL EVALUATION-1

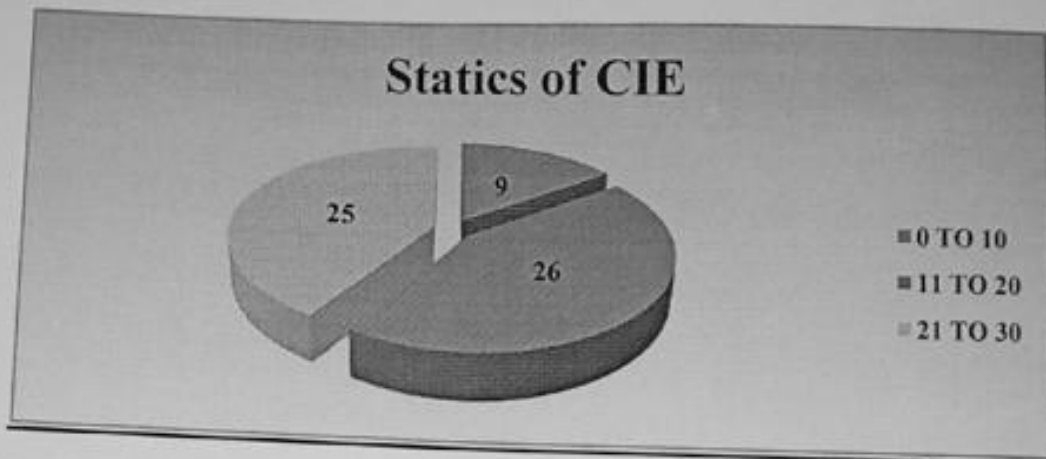
Mark range	0-10	11-20	21-30
No. Of Students	06	28	26



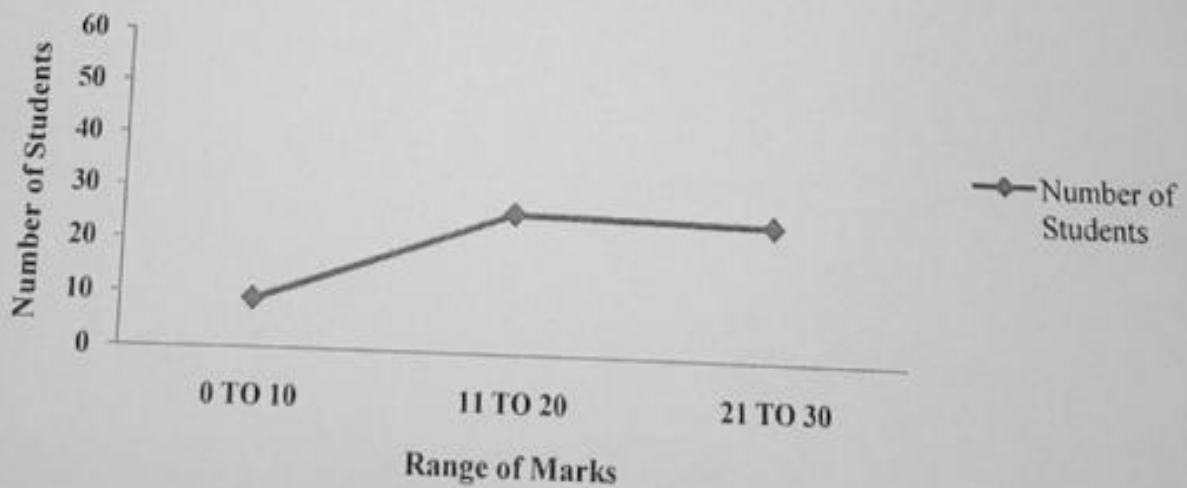


STATISTICS OF CONTINUOUS INTERNAL EVALUATION-2

Mark range	0-10	11-20	21-30
No. Of Students	10	25	25

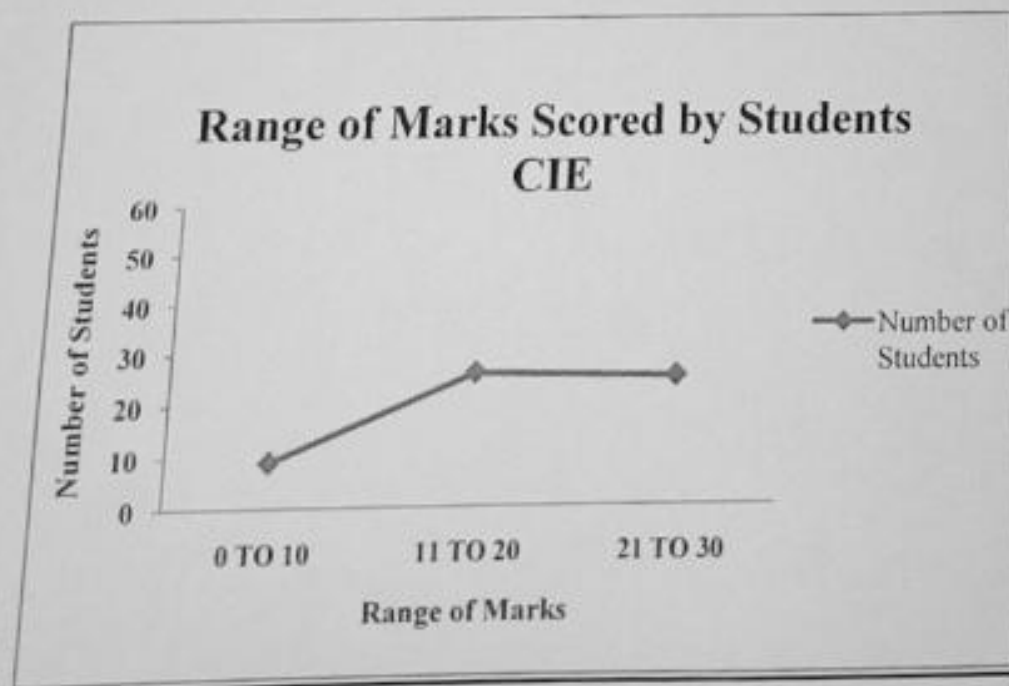
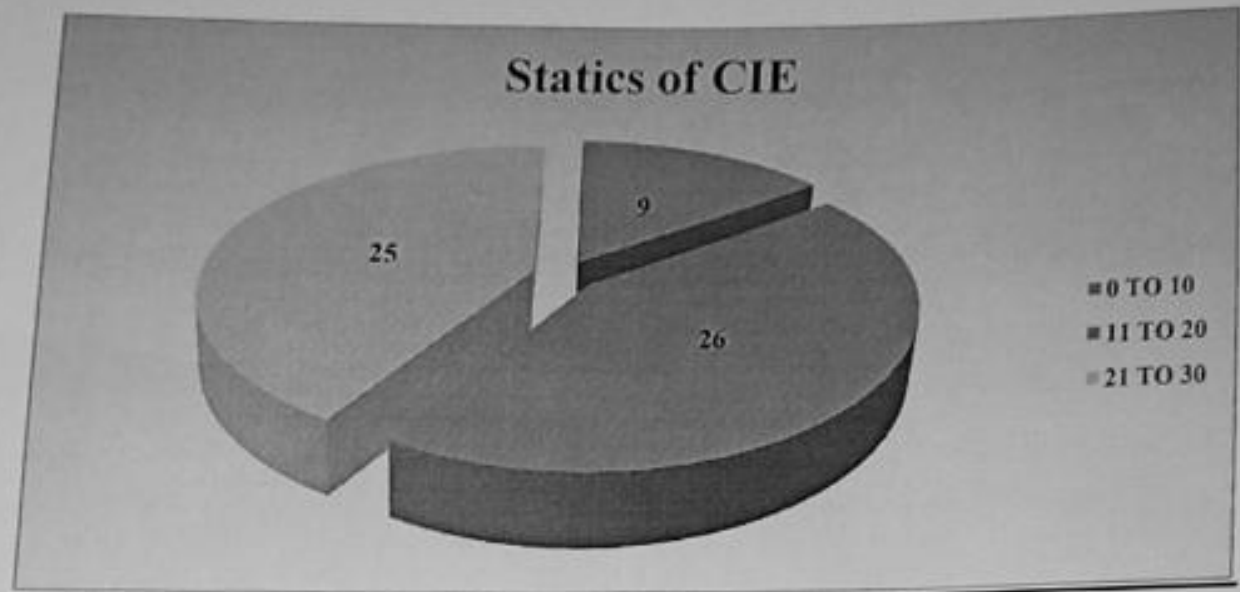


Range of Marks Scored by Students CIE



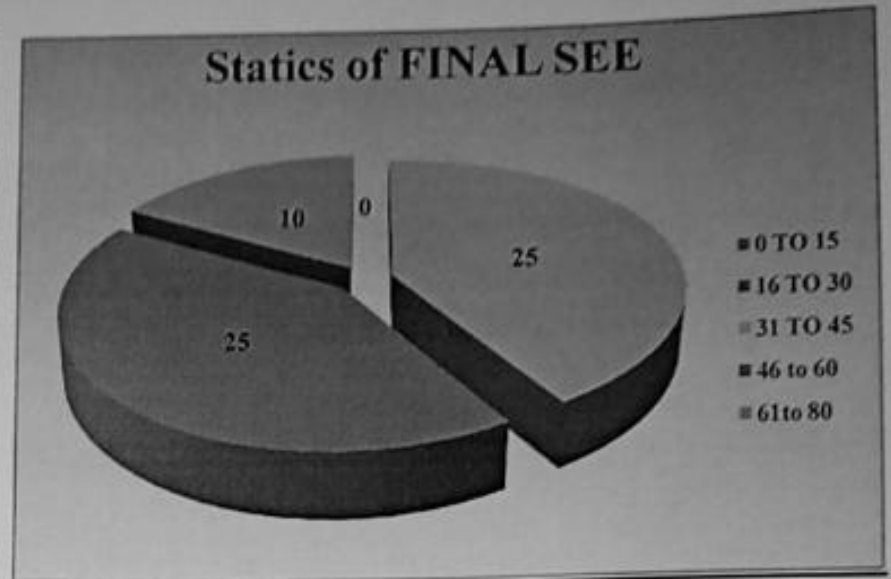


Mark range	0-10	11-20	21-30
No. Of Students	09	26	25

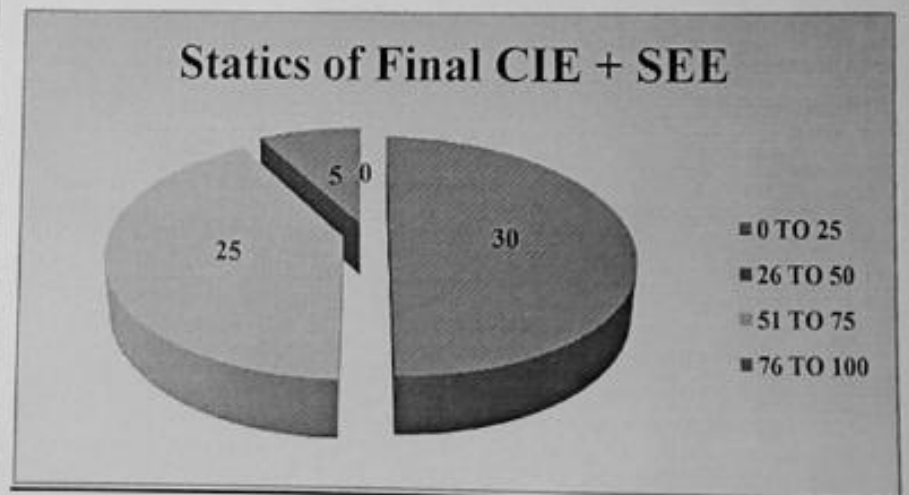




	SEE	No. of Students
Marks Range	0 TO 15	0
	16 TO 30	0
	31 TO 45	25
	46 to 60	25
	61 to 80	10
Total Number of Students		60



	CIE+SEE	No. of Students
Marks Range	0 TO 25	0
	26 to 50	30
	51 to 75	25
	76 to 100	05
Total Number of Students		60



RAO BHADUR Y MAHABALESWARAPPA ENGINEERING COLLEGE, BALLARI DEPARTMENT OF MECHANICAL ENGINEERING

DIRECT AND INDIRECT ATTAINMENT 2017-18

Faculty: B G CHANDRU
 Subject: Machine Tools and Operations
 SEM: IV

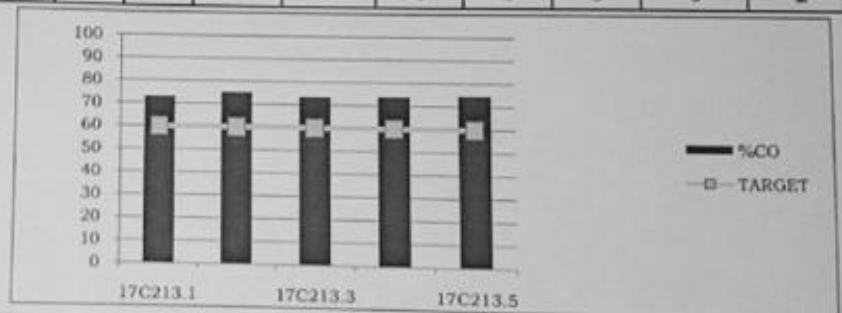
Code: 17ME45B

SEC: A B

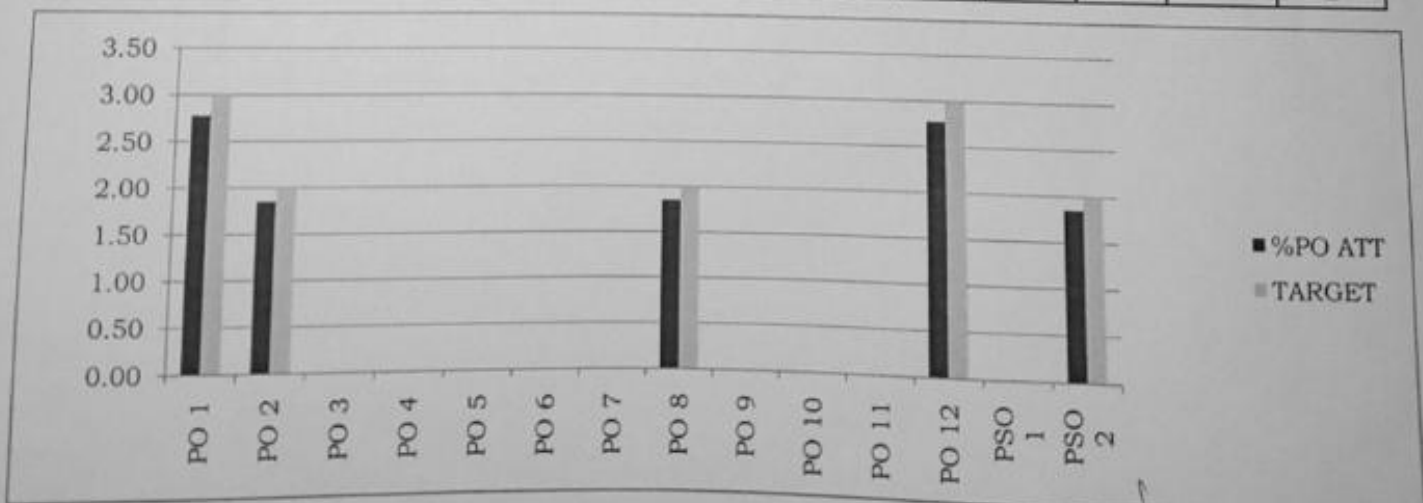
COURSE OUTCOME STATEMENT	
17C213.1	Discuss the operations of various machine tools machines
17C213.2	Describe various machining processes, parameters & relative quantities
17C213.3	Explain different cutting tool materials, Geometry & surface finish
17C213.4	Apply mechanics of machining process to machine tool operations
17C213.5	Analyze tool wear mechanisms and equations to enhance tool life and minimize machining cost.

CO-PO/PSO Mapping														
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
17C213.1	3	2	0	0	0	0	0	2	0	0	0	3	0	2
17C213.2	3	2	0	0	0	0	0	2	0	0	0	3	0	2
17C213.3	3	2	0	0	0	0	0	2	0	0	0	3	0	2
17C213.4	3	2	0	0	0	0	0	2	0	0	0	3	0	2
17C213.5	3	2	0	0	0	0	0	2	0	0	0	3	0	2

	%CO	TARGET
17C213.1	73.18	60
17C213.2	75.35	60
17C213.3	73.58	60
17C213.4	73.98	60
17C213.5	74.72	60



	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
%PO ATT	2.78	1.85						1.85				2.78		1.85
TARGET	3	2						2				3		2



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RAO BHADUR Y MAHABALESWARAPPA ENGINEERING COLLEGE, BALLARI DEPARTMENT OF MECHANICAL ENGINEERING

Faculty: B G CHANDRU
Subject: Machine Tools and Operations
SEM: IV

DIRECT ATTAINMENT 2018-19

Code: 17ME45B

SEC: B

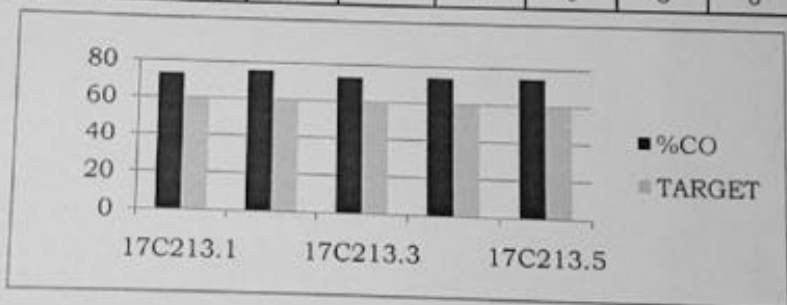
COURSE OUTCOME STATEMENT

17C213.1	Discuss the operations of various machine tools machines
17C213.2	Describe various machining processes, parameters & relative quantities
17C213.3	Explain different cutting tool materials, Geometry & surface finish
17C213.4	Apply mechanics of machining process to machine tool operations
17C213.5	Analyze tool wear mechanisms and equations to enhance tool life and minimize machining cost.

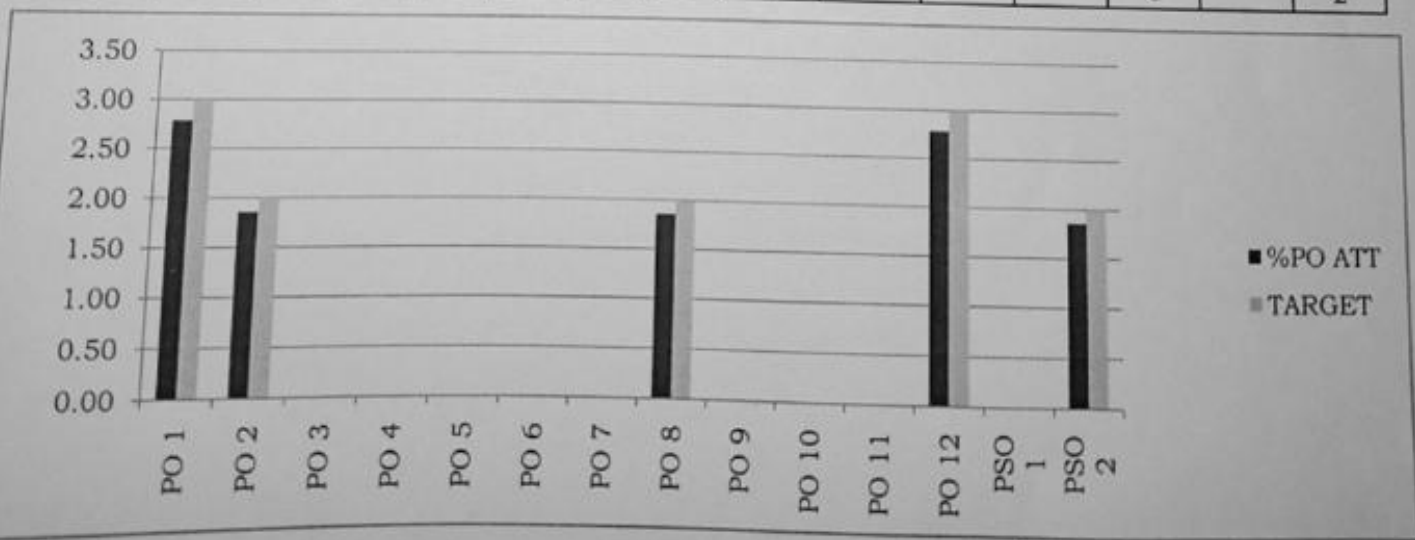
CO-PO/PSO Mapping

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
17C213.1	3	2	0	0	0	0	0	2	0	0	0	3	0	2
17C213.2	3	2	0	0	0	0	0	2	0	0	0	3	0	2
17C213.3	3	2	0	0	0	0	0	2	0	0	0	3	0	2
17C213.4	3	2	0	0	0	0	0	2	0	0	0	3	0	2
17C213.5	3	2	0	0	0	0	0	2	0	0	0	3	0	2

	%CO	TARGET
17C213.1	73.32	60
17C213.2	75.88	60
17C213.3	73.35	60
17C213.4	74.11	60
17C213.5	75.01	60



	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
%PO ATT	2.79	1.86						1.86				2.79		1.86
TARGET	3	2						2				3		2



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Course Outcomes	CO Direct Attainment $=\{0.70(\text{SEE})+0.30(\text{CIE})\} * 100$	CO Target	CO Attainment Gap
18C213.1	73.32	60	Nil
18C213.2	75.88	60	Nil
18C213.3	73.35	60	Nil
18C213.4	74.11	60	Nil
18C213.5	75.01	60	Nil

DIRECT & INDIRECT CO ATTAINMENT GAP ANALYSIS 2018-19

Course Outcomes	CO Direct & Indirect Attainment $=\{0.70(\text{SEE})+0.30(\text{CIE})\} * 100$	CO Target	CO Attainment Gap
18C213.1	73.18	60	Nil
18C213.2	75.35	60	Nil
18C213.3	73.58	60	Nil
18C213.4	73.98	60	Nil
18C213.5	74.72	60	Nil

ACTION REPORT ON GAP ANALYSIS

Course Outcomes	Action proposed to bridge the gap	Modification of target if achieved
18C213.1	Nil	Nil
18C213.2	Nil	Nil
18C213.3	Nil	Nil
18C213.4	Nil	Nil
18C213.5	Nil	Nil

Note:

1. Suitable action to be initiated to fill the gap at the course coordinator level and the same has to be documented.
2. If the targets are achieved then higher targets may be set.
3. If the targets are not achieved then planning must be done with respect to Improvements in teaching /learning process so as to meet the target