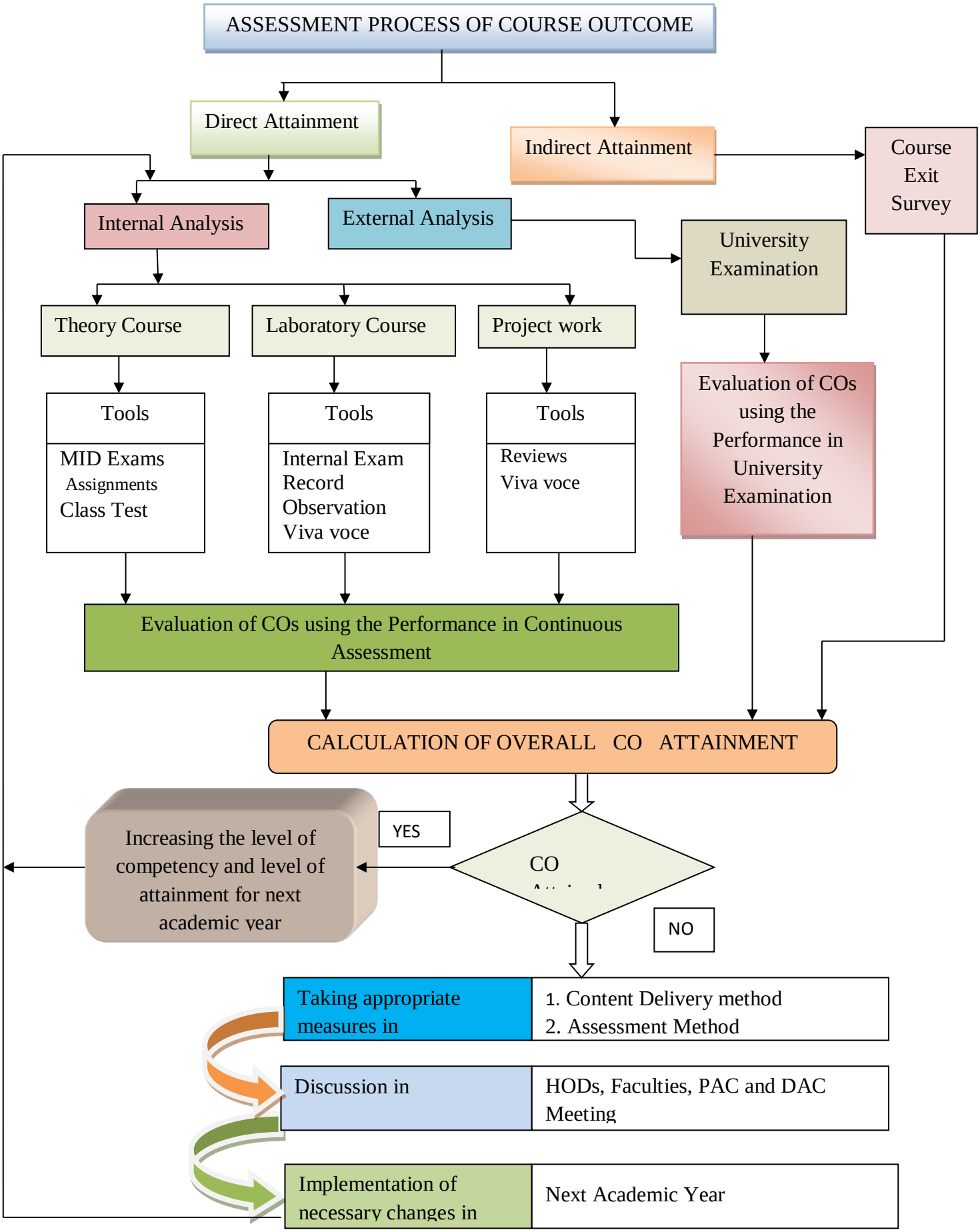
Attainment of Course Outcomes

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



Direct Assessment

Evaluation Methods

Internal

1. **MID Exam**

   Two MID Exam are conducted per semester to evaluate the attainment of course outcomes. Each question is mapped with COs and blooms level.
2. **Assignments**

   The Assignments are given to the students based on the subject nature. Assignment sheets are prepared by the faculty member with COs and bloom levels.
3. **Class Test**

   Four class Test are conducted per semester to evaluate the attainment of course outcome. Each test having five questions which is mapped with Cos and blooms level.
4. **Laboratory Course (Continuous Assessment)**

   The evaluation criteria for each experiment are based on performance (observation), viva-voce and record mark. The attainment of COs is calculated through continuous assessment and MID practical performance.
5. **Project Works**

   Two reviews are conducted periodically to monitor and evaluate the progress of the project using project rubrics. Viva-Voce is also conducted as per University norms.

External

1. **University Examination**

   At the end of each semester, final examination is conducted for Theory and Laboratory courses by JNTUH, in which question paper covers the entire syllabus and all the COs are covered in the question papers.

CO-ATTAINMENT LEVEL: 60 %

CO ATTAINMENT LEVEL	SET TARGET
Level -1	60% of Students ≥ 60 Marks
Level -2	70% of Students ≥ 60 Marks
Level -3	80% of Students ≥ 60 Marks

Tools		Overall Weightage in COs	
Direct	Internal	60%	70%
	External	40%	
Indirect			30%

The course outcomes for all the courses are calculated in terms of percentage using the formula.

$$COx\ in\ \% = \frac{Marks\ obtained\ by\ the\ student\ in\ COx}{Maximum\ marks\ alloted\ in\ COx} X\ 100$$

Where, $x = [1\ to\ N]$, N= Number of COs.

Each course outcome is calculated for all the students based on marks obtained by the students.

$$COx\ Attainment\ in\ \% = \frac{no.of\ Students\ scored\ more\ than\ or\ equal\ to\ 60\%\ of\ Marks\ in\ COx}{no.of\ Student} X\ 100$$

Where, x= [1 to N], N= Number of Course Outcomes

Overall CO Attainment: The Overall Attainment for a course is sum of 60% of Internal Assessment Attainment Level and 40% of University Attainment Level.

After calculating each course outcomes in terms of percentage, the attainment level of the course is shown below table

COs	Level	Statement
CO1	1	60% of Students scored more than or equal to 60 Marks
CO2	2	70% of Students scored more than or equal to 60 Marks
CO3	2	70% of Students scored more than or equal to 60 Marks
CO4	3	80% of Students scored more than or equal to 60 Marks
CO5	2	70% of Students scored more than or equal to 60 Marks

Internal Attainment is calculated as follows:

$$Internal\ Attainment\ level = \frac{CO1 + CO2 + CO3 + CO4 + CO5}{5}$$

$$Internal\ Attainment\ level = \frac{1 + 2 + 2 + 3 + 2}{5} = 2$$

University Attainment is calculated as follows

University Attainment level	1	60% of Students scored more than or equal to 50 Marks
	2	70% of Students scored more than or equal to 50 Marks
	3	80% of Students scored more than or equal to 50 Marks

In this case assume a subject 90% of the students scored more than or equal to 50% of the mark in university examination, so the University Attainment Level is 3

The Overall Attainment for the course in direct methods is calculated as follows

$$\text{Overall CO Attainment} = \left(\frac{\sum_{i=1}^{n} CO_i}{n} X\ 0.6\right) + (UA\ X\ 0.4)$$

Where n=number of course outcome

Overall CO Attainment (Direct method) = (0.6 × 2) + (0.4×3**) = 2.4**

Indirect Assessment

1. **Course Exit Survey (Theory & Practical):**

   The course exit survey is process of collecting reviews on each course from the students at the end of each semester. It helps to improve the overall aspect of the course in future semesters.

   Feedbacks are collected from at least 70% - 75% of the students on the course outcomes. This is to know how far the students are aware of the outcomes and gained the knowledge regarding these outcomes. The average of all these outcomes results in indirect attainment.

   The average of all these outcomes is 2 (from Course Exit Survey)

Overall CO Attainment of both Direct method and Indirect method

Course attainment = 70% of direct attainment + 30% of indirect attainment

$$\textbf{Overall CO Attainment} = \text{70\% of DA} + \text{30\% of IDA}$$

Hear

$$\textbf{Overall CO Attainment} = (\textbf{70\%X2.4}) + (\textbf{30\%X2})$$

=2.28

Similar procedure is followed for all the courses and is displayed in the next section.

Example

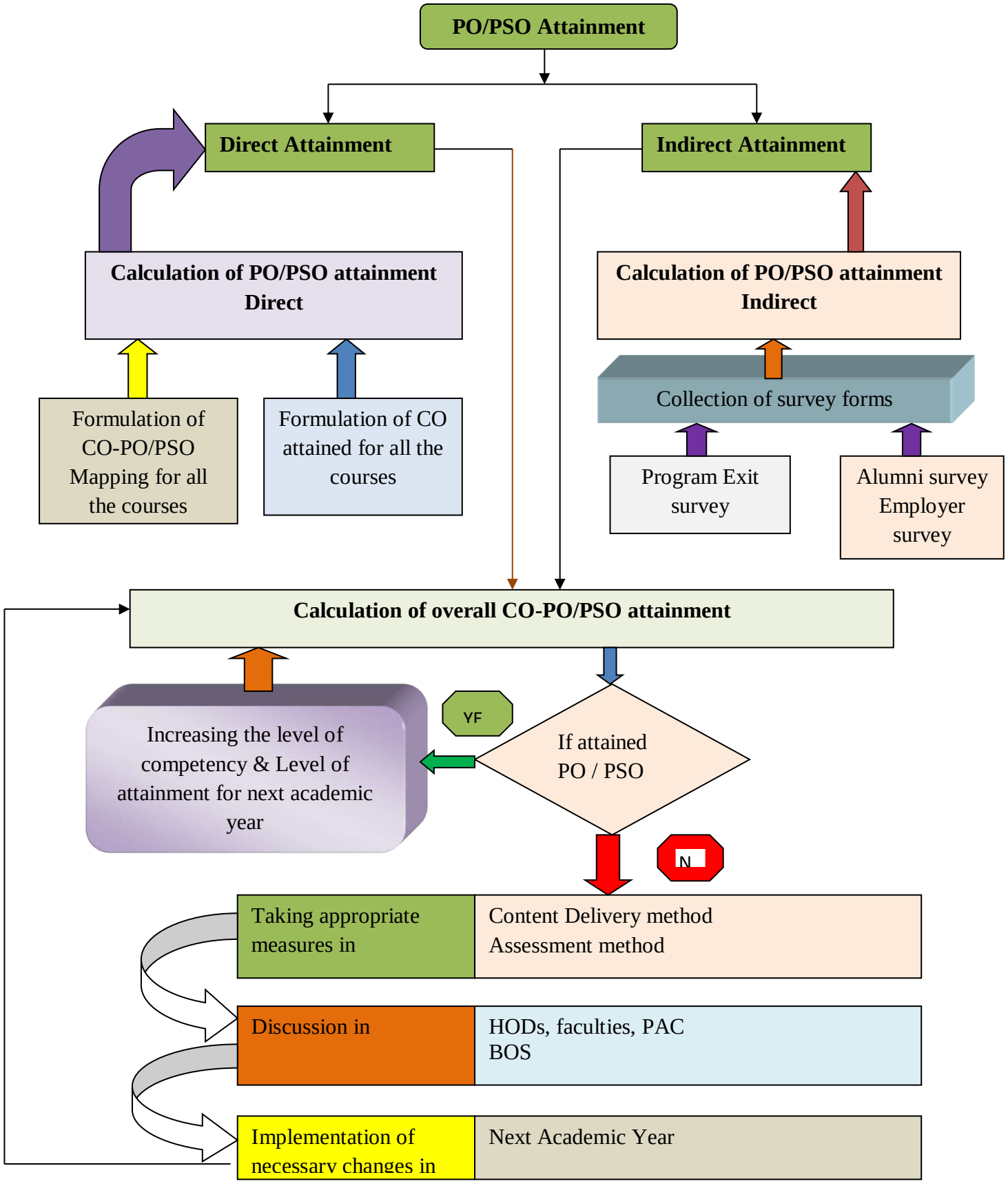
		INTERNAL					EXT	COURSE END SURVEY				
		CO1	CO2	CO3	CO4	CO5	UV	CO1	CO2	CO3	CO4	CO5
Number of Students scored above the set level		112	113	110	120	93	49	34	90	61	80	80
% of students scored above the set level		89	90	87	95	74	39	27	71	48	63	63
Obtained CO value over a scale of "3"		3	3	3	3	3	1	1	1	1	1	1

From the table overall CO attainment is 2.20 and % of attainment is 73.33%, so the respective subject is not attained the course outcome.

Similar procedure is followed for all the courses and is displayed in the next section

Course Outcomes	CO Attainment			Level 1 : 60% of Students scored more than or equal to 60 Marks						**60**
				Level 2: 70% of Students scored more than or equal to 60 Marks						**70**
				Level 3: 80% of Students scored more than or equal to 60 Marks						**80**
	CO level	%	Attainment	**Direct**					**Indirect**	
				Internal	**60%**	**External**	**40%**	**70%**	**Course End Survey**	**30%**
C301.CO1	**1.84**	**61.33**	**YES**	3.00	1.80	1.00	0.40	1.54	1.00	0.30
C301.CO2	**2.44**	**81.33**	**YES**	3.00	1.80	1.00	0.40	1.54	1.00	0.30
C301.CO3	**1.84**	**61.33**	**YES**	3.00	1.80	1.00	0.40	1.54	1.00	0.30
C301.CO4	**2.44**	**81.33**	**YES**	3.00	1.80	1.00	0.40	1.54	1.00	0.30
C301.CO5	**2.44**	**81.33**	**YES**	3.00	1.80	1.00	0.40	1.54	1.00	0.30
Average	**2.20**	**73.33**	**YES**							

Describe Assessment Tools and Processes Used for Measuring the Attainment of each of the Program Outcomes and Program Specific Outcomes



PO/PSO Assessment Tools:

Evaluation of attainment of POs and PSOs is based on direct and indirect assessment tools. Direct assessment of POs and PSOs is based on students' performance in Continuous Assessments and University Examination. Indirect assessment is based on Program Exit Survey, Alumni Survey, Course Exit Survey and employer feedback (Theory and Practical).

Direct Assessment

Using Program Outcomes prescribed by NBA, the faculty member evaluates the Program Outcomes and Program Specific Outcomes through MID-1, MID-2 exam, Assignments and class test. PO will be evaluated by the CO-PO Mapping with the attainment value for each course. For each course, every faculty member decides the competency level and attainment level. The following table 3 shows the tools and process for direct PO attainment.

PO Attainment	Tools	Process
Direct (CO Attainment)	MID Exam, Assignments, University Examination, Class Test	Assignments are given periodically for the entire course to attain the specific POs Two MID Exams are conducted per semester to evaluate the student performance Four Class Test are conducted per semester to evaluate the student performance University Examination is conducted once in a semester as per JNTUH Schedule
	Record, Viva Voce, Observation	Student Contribution in laboratory is evaluated based on the performance, Viva Voce, Presentation(observation) and Record Work Lab Internal examination is conducted for 100 marks for duration of 3 hours. University Examination is conducted once in a semester as per JNTUH Schedule
	Project Reviews	Students are divided into batches. Each batch consists of three to four students. Supervisors are allotted for each group. Zeroth reviews are conducted for the students to identify the area of project. Three reviews are conducted periodically to monitor and evaluate the progress of the project. Viva-Voce is conducted at the end of the semester

Course level PO & PSO Attainment Calculation

The PO & PSO attainment for the course is calculated using the following formula

$$CO\ Attainment\ Ratio\ of\ Course(x) = \frac{CO\ Attainment\ of\ Course(x)}{3(Maximum\ attainment\ Value)}$$

Where, x= [1 to N], N= Number of Courses.

$$POm\ Attainment\ of\ course(x) = CO\ Attainment\ Ratio\ of\ Course(x)\ X\ POm\ Mapping\ Value\ of\ Course(x)$$

Where, m= [1 to 12]

$$PSOm\ Attainment\ of\ course(x) = CO\ Attainment\ Ratio\ of\ Course(x)\ X\ PSOm\ Mapping\ Value\ of\ Course(x)$$

Where, m= [1 to M], M= Number of Program Specific Outcomes.

Program level PO & PSO Direct Attainment Calculation:

The PO & PSO attainment for Program is calculated using the following formula

$$\text{POm Direct Attainmen} = \frac{\sum_{i=1}^{x} \text{POm Attainment of course(i)}}{x}$$

Where, m=Program Outcomes varies from 1 to 12

x=Number of Courses mapped with Pom

$$\text{PSOm Direct Attainmen} = \frac{\sum_{i=1}^{x} \text{PSOm Attainment of course(i)}}{x}$$

Where, m=Program Specific Outcomes varies from 1 to 2

x=Number of Courses mapped with PSOm

Indirect Assessment:

The following tools are used to assess the indirect assessment of attainment of COs, POs and PSOs. The assessment tools listed in table are used for both CO, PO – PSO attainment calculation.

PO Attainment	Tools	Process
Indirect	Program Exit Survey	On completion of program, a feedback is obtained from each student about the entire program experience.
	Alumni Survey	During the alumni meet, graduation day the alumni survey are collected from the graduates based on the various parameters.

	Employer survey	It is collected by the placement officer while visiting the industries in order to understand the industry needs.

PO attainment calculation:

1. For the final PO attainment values, 70% of the direct attainment value and 30% of indirect attainment value are considered.

2. The similar procedure is followed for the calculation of PSO attainment.

Co-PO & PSO Articulation Matrix

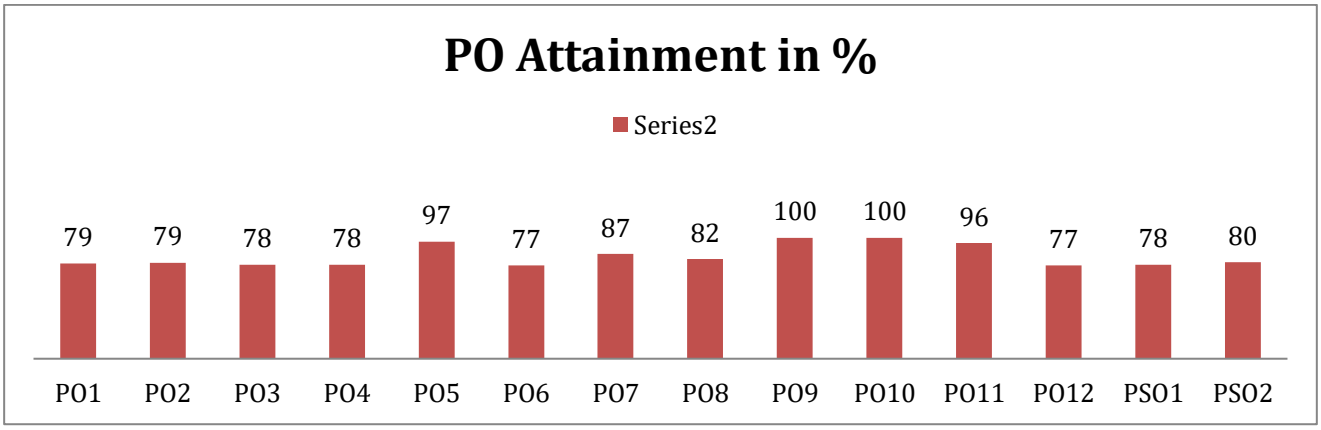
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C303.CO1	2	1	2	2	2	2	1							
C303.CO2	2	2	2	2	2	2	1							
C303.CO3	2	2	2	2	2	2	1							
C303.CO4	2	2	2	2	2	2	1							
C303.CO5	1	2	3	2	2	2	1							
Average	1.80	1.80	2.20	2.00	2.00	2.00	1.00							

PO ATTAINMENT SET LEVEL	**90%**

Actual Attainment of POS & PSOs

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO 11	PO 12	PS O1	PSO2
C303.CO1	1.60	0.80	1.60	1.60	1.60	1.60	0.80							
C303.CO2	2.00	2.00	2.00	2.00	2.00	2.00	1.00							
C303.CO3	1.60	1.60	1.60	1.60	1.60	1.60	0.80							
C303.CO4	1.80	1.80	1.80	1.80	1.80	1.80	0.90							
C303.CO5	1.00	2.00	3.00	2.00	2.00	2.00	1.00							
C303-"AVERAGE	**1.60**	**1.64**	**2.00**	**1.80**	**1.80**	**1.80**	**0.90**							
EXPECTED LEVEL	1.62	1.62	1.98	1.80	1.80	1.80	0.90							
ATTAINED	NO	YES	YES	YES	YES	YES	YES	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE

Direct Attainment	1.76	1.78	1.74	1.73	2.3	1.71	2	1.87	2.4	2.4	2.27	1.71	1.73	1.8
Indirect Attainment	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
TOTAL	**2.36**	**2.38**	**2.34**	**2.33**	**2.9**	**2.31**	**2.6**	**2.47**	**3**	**3**	**2.87**	**2.31**	**2.33**	**2.4**
% of PO attainment	79	79	78	78	97	77	87	82	100	100	96	77	78	80



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

R18(JNTUH)(2020-2024)STUDENTS

OVERALL PO ATTAINMENT

PROGRAM NAME: B. Tech-COMPUTER SCIENCE AND ENGINEERING

PROGRAM OUTCOME-ATTAINMENT (DIRECT+INDIRECT METHOD)

(Direct Attainment of PO=Average of AttainmentS of all CO contributing to the specific PO. Overall attainment of PO=80% attainment through the direct method+20% of PO attainment through indirect method. Overall attainment of PO=80%POdir+20%POindir)

S. No.	Method	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
1	DIRECT	2.5	2.3	2.3	2.1	1.9	1.8	1.9	2.1	1.8	1.75	1.72	1.89	2.14	2.12
	80%	2	1.8	1.8	1.7	1.6	1.4	1.5	1.7	1.5	1.4	1.37	1.51	1.71	1.69
2	INDIRECT	2.7	2.6	2	1.9	1.7	1.6	1.7	1.9	1.6	1.58	1.55	1.7	1.92	1.91
	20%	0.6	0.5	0.4	0.4	0.4	0.3	0.3	0.4	0.3	0.32	0.31	0.34	0.38	0.38
	TOTAL	2.5	2.3	2.2	2.1	1.9	1.7	1.9	2.1	1.8	1.72	1.68	1.85	2.09	2.07
	% of PO & PSO attainment	84	77	73	69	63	58	62	69	59	57.3	56.1	61.6	69.8	69.2

PROGRAM COORDINATOR

Head of the Department
Computer Science and Engineering
Jyothishmathi Institute of Technology & Science
Nustulapur, Dist: Karimnagar-505 481.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

R18(JNTUH)(2020-2024)STUDENTS

OVERALL PO ATTAINMENT

PROGRAM NAME: B. Tech -COMPUTER SCIENCE AND ENGINEERING

PROGRAM OUTCOME-ATTAINMENT (DIRECT METHOD)

SUBJECT	COURSE CODE	SUBJECT CODE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
Mathematics - I	C101	MA101BS	1.84	1.39	1.39	1.73	0.98	0.64						1.47		
Engineering Chemistry	C102	CH102BS	2.12	2.10	1.34			0.96	1.92			0.96		1.92		
Basic Electrical Engineering	C103	EE103ES	2.94	2.94	2.54	2.36	1.93	2.00						1.96		
Engineering Workshop	C104	ME105ES	2.00	1.82	2.22	2.76	1.26	1.50						1.48		
English	C105	EN105HS									2.60	2.60		2.80		2.80
Engineering Chemistry Lab	C106	CH106BS	2.00	1.40		1.80		2.60			3.00	1.00		1.00		
English Language and Communication Skills Lab	C107	EN107HS									2.60	2.60	2.00	2.40		
Basic Electrical Engineering Lab	C108	EE108ES	2.94	2.94	2.74	2.94	2.94	1.96			2.94		0.98	1.96		
Mathematics - II	C109	MA201BS	1.82	1.82	1.82	1.71	1.32							1.82		
Applied Physics	C110	AP202BS	2.88	2.12	2.30		1.34		1.23			1.92		1.56		
Programming for Problem Solving	C111	CS203ES	1.77	1.77	1.66	1.18	0.59	0.59			0.75	0.59	1.14	0.86	1.12	1.18
Engineering Graphics	C112	ME204ES	2.80	2.30	2.20	2.30	2.50	3.00			2.00	2.00		3.00		1.00
Applied Physics Lab	C113	AP205BS	2.00	1.40	1.00	1.80	1.50		2.00		2.00	1.40		1.40		

Programming for Problem Solving Lab	C114	CS206ES	3.00	2.60	2.80	1.60	2.60				2.20	1.60	1.00	2.00	3.00	2.60
Environmental Science	C115	MC109ES						2.00	3.00	2.00						1.00
Analog and Digital Electronics	C201	CS301ES	2.34	2.52	2.24	2.24	1.81	1.59	1.59					1.81	1.81	1.68
Data Structures	C202	CS302PC	2.10	1.93	1.93	1.64	1.78	0.94	0.75		1.04	0.75	0.89	0.75	1.93	2.07
Computer Oriented Statistical Methods	C203	MA303BS	1.69	1.37	1.58	1.23	0.62							1.23		
Computer Organization and Architecture	C204	CS304PC	2.00	1.80	1.60	1.67								2.00	1.60	2.00
Object Oriented Programming using C++	C205	CS305PC	2.09	1.97	2.09	2.09	1.59	0.63			0.72	0.77	1.15	1.31	2.09	1.60
Analog and Digital Electronics Lab	C206	CS306ES	2.57	2.86	2.68	2.68	2.00	1.93	1.93					2.00	1.90	1.93
Data Structures Lab	C207	CS307PC	2.80	2.80	2.42	2.62	2.24	1.31			1.51		1.68	1.28	2.26	2.22
IT Workshop Lab	C208	CS308PC	2.60	1.80	1.75	1.75	2.25				1.25	1.40	1.00	2.00	2.60	2.20
C++ Programming Lab	C209	CS309PC	3.00	2.80	2.80	1.20	1.25				1.00	2.00		2.80	1.20	1.20
Gender Sensitization Lab	C210	MC309	2.00	1.80	2.80	2.00		2.00		2.60				2.00	1.60	2.00
Discrete Mathematics	C211	CS401PC	2.28	1.95	1.63	1.30	0.98							1.79		
Business Economics & Financial Analysis	C212	SM402MS							0.66		1.63	0.81	0.47			
Operating Systems	C213	CS403PC	2.10	1.96	2.10	1.50	1.04							1.50	2.24	2.10
Database Management Systems	C214	CS404PC	2.32	2.12	1.77	1.53	0.72							1.47	2.35	2.50
Java Programming	C215	CS405PC	1.68	1.58	1.36		1.40							1.23	1.44	1.23
Operating Systems Lab	C216	CS406PC	2.88	2.88	2.88	2.10	1.52							1.92	2.88	2.88
Database Management Systems Lab	C217	CS407PC	2.80	2.62	2.80	2.24	1.86							1.86	2.62	2.80

Java Programming Lab	C218	CS408PC	2.80	2.42	2.42		1.86							1.86	2.80	2.80
Constitution of India	C219	MC409						1.00	2.00	2.67	1.00	1.19		0.40		
Formal Languages & Automata Theory	C301	CS501PC	2.13	2.01	1.55	1.55	1.25								2.13	1.67
Software Engineering	C302	CS502PC	2.22	2.09	1.75	1.57	1.57	1.25	0.63	1.53	1.10	2.04	1.38	1.38	1.13	1.13
Computer Networks	C303	CS503PC	2.20	2.20	2.00	2.00	2.00							2.80	2.40	2.00
Web Technologies	C304	CS504PC	2.38	2.22	2.38	1.91	2.05	1.71		1.59	1.59	2.22	1.58	1.91	1.89	2.07
Data Analytics	C305	CS513PE	2.60	2.80	2.48	2.50	3.00	2.00				2.50	2.00		1.92	1.92
Advanced Operating Systems	C306	CS522PE	1.96	1.69	2.10	2.01							2.16		1.44	1.44
Software Engineering Lab	C307	CS505PC	2.86	2.58	2.57	3.00	2.85	2.70				1.62	3.00		2.08	2.08
Computer Networks & Web Technologies Lab	C308	CS506PC	2.66	2.28	2.85	2.60	2.48	2.85							2.48	2.28
Advanced Communication Skills Lab	C309	EN508HS								1.80	2.36	2.94		2.36		
Intellectual Property Rights	C310	MC510						2.00	3.00	3.00			0.27	0.27		
Machine Learning	C311	CS601PC	2.77	2.77	2.72	2.72	2.77							1.85	1.45	2.25
Compiler Design	C312	CS602PC	2.33	2.33	2.33	1.98	2.44								2.33	1.84
Design and Analysis of Algorithms	C313	CS603PC	2.35	2.35	2.35	2.35	1.57								1.57	2.08
Software Testing Methodologies	C314	CS615PE	2.16	2.16	1.44	1.44	1.44	1.58	1.58	1.58	1.44	2.16	1.44	2.16	1.73	2.16
Internet of Things	C315	EC600OE	3.00	2.40	2.60	2.50	2.00	2.00					2.00	2.40	2.20	2.40
Machine Learning Lab	C316	CS604PC	2.92	2.34	3.00	2.50	3.00				3.00		3.00	2.00	2.34	2.72
Compiler Design Lab	C317	CS605PC	2.94	2.76	2.94	2.76	2.74								2.94	2.88
Software Testing Methodologies Lab	C318	CS625PE	2.60	2.80	2.60	2.40	2.80			2.00			2.00		2.40	2.40

Environmental Science	C319	MC609						2.00	3.00	2.00						1.00
Cryptography & Network Security	C401	CS701PC	2.79	2.29	2.11	1.61	1.86	1.86		1.86			1.86	1.86	1.86	2.54
Data Mining	C402	CS702PC	2.58	2.38	2.24	2.38	1.66				0.86		2.00	1.86	2.24	2.09
Cloud Computing	C403	CS714PE	2.33	2.01	1.87	1.87	1.24				0.78	1.12	1.55	1.55	2.04	2.01
Software Process & Project Management	C404	CS725PE	2.55	2.19	2.01	2.19	1.70			1.70	1.70	1.70	2.01	2.19	2.37	2.37
Remote Sensing & GIS	C405	CE700OE	1.66	1.58	1.58	2.01	1.86	1.76	2.00		1.58	1.40	1.40	1.46	1.66	1.66
Cryptography & Network Security Lab	C406	CS703PC	2.27	2.23	2.23	2.10	2.27	2.23		2.52				2.70	1.80	2.70
Industrial Oriented Mini Project	C407	CS704PC	2.40	2.60	2.40	2.60	2.00	2.00	2.00	2.00	3.00	2.33	2.50	3.00	2.40	2.60
Seminar	C408	CS705PC	2.86	2.86	2.86	2.86	2.86	1.90			2.00	1.90	1.92	1.90	2.28	2.60
Project Stage-1	C409	CS706PC	3.00	3.00	3.00	3.00	3.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00
Organizational Behaviour	C410	SM801MS						1.00		2.00	1.58	1.43	1.58	1.39		0.86
Cyber Forensics	C411	CS815PE	2.90	2.65	2.65	2.18	1.93	1.93	2.00	2.50				1.93	2.68	2.43
Envirnoental Impact Assessment	C412	CE800OPE	1.58	1.32	2.18	1.78	1.72	2.66	2.66	2.66	1.18	1.18	1.00	1.78	2.16	
Project Stage-II	C413	CS802PC	3.00	3.00	3.00	3.00	3.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00
Cyber Security			2.00	2.60	2.25	2.00	2.75	2.00	2.00	2.00				3.00	2.60	3.00
Fundamental of AI			3.00	2.60	2.80	2.60	2.60	1.75	2.00	2.00	1.60	2.20	1.80	3.00	2.40	3.00
AVERAGE			**2.43**	**2.25**	**2.24**	**2.11**	**1.93**	**1.78**	**1.90**	**2.10**	**1.81**	**1.75**	**1.70**	**1.89**	**2.14**	**2.12**
PERCENTAGE			**80.9**	**75.1**	**74.5**	**70.3**	**64.4**	**59.3**	**63.4**	**69.9**	**60.2**	**58.4**	**56.7**	**62.9**	**71.2**	**70.6**

PROGRAM COORDINATOR

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

R18(JNTUH)(2020-2024)STUDENTS

OVERALL PO ATTAINMENT

PROGRAM NAME: B. Tech -COMPUTER SCIENCE AND ENGINEERING

PROGRAM OUTCOME-ATTAINMENT (INDIRECT METHOD)

S. No.	Method	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	PSO 1	PSO 2
1	Program Exit Survey	3	2.7	2.7	2.4	2.6	2.6	3	2	2.4	2.4	2.3	2.6	2.6	2.87
2	Employer Survey (Industry Survey)	2.6	2.4	2.6	2.9	2.5	2.2	2.6	2.2	2.2	2.2	2.5	2.5	2.7	2.4
3	Alumni Survey	2.6	2.7	2.6	2.7	3	2	2.4	2.7	2.8	2.4	2.6	2.3	2.5	3

PROGRAM COORDINATOR

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JYOTHISHMATHI INSTITUTE OF TECHNOLOGY AND SCIENCE

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

R-18 (JNTUH) (2020-2024) students
OVERALL PO ATTAINMENT

PROGRAM NAME: B.Tech --ELECTRONICS AND COMMUNICATION ENGINEERING

PROGRAM OUTCOME- ATTAINMENT (DIRECT+INDIRECT METHOD)

(Direct Attainment of PO = Average of attainments of all CO contributing to the specific PO. Overall attainment of PO = 80% attainment through the direct method + 20% of POattainment through indirect method.Overall attainment of PO = 80% POdir + 20 % POindir)

S. No.	Method	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	DIRECT	2.19	1.97	1.91	1.83	1.76	1.64	1.69	1.97	1.87	1.67	1.57	1.67	1.82	1.68
	80%	1.76	1.58	1.53	1.47	1.41	1.31	1.35	1.57	1.49	1.34	1.26	1.33	1.46	1.35
2	INDIRECT	2.73	2.72	2.63	2.67	2.71	2.27	2.67	2.30	2.48	2.33	2.47	2.47	2.60	2.89
	20%	0.55	0.54	0.53	0.53	0.54	0.45	0.53	0.46	0.50	0.47	0.49	0.49	0.52	0.58
	TOTAL	2.30	2.12	2.05	2.00	1.95	1.76	1.89	2.03	1.99	1.81	1.75	1.83	1.98	1.93
	% of PO & PSO attainment	76.7	70.7	68.4	66.7	65.0	58.8	62.9	67.8	66.3	60.2	58.4	60.9	65.9	64.2

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

R-18 (JNTUH) (2020-24) Admitted students

PROGRAM NAME: B.Tech -ELECTRONICS AND COMMUNICATION ENGINEERING

PROGRAM OUTCOME- ATTAINMENT (DIRECT METHOD)

SUBJECT	SUBJECT CODE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
Mathematics - I	MA101BS	1.90	1.47	1.47	1.77	1.08	0.67						1.45	1.35	1.35
Applied Physics	AP102BS	2.76	2.04	2.22		1.30		1.18			1.84		1.50		
Programming for Problem Solving	CS103ES	2.09	2.09	2.09	2.09	1.39	0.70			0.86	0.70	0.97	0.70	1.99	
Engineering Graphics	ME104ES	1.96	1.58	1.67	1.56	1.84	1.84			1.43	1.39		1.96		0.61
Applied Physics Lab	AP105BS	1.96	1.36	0.97	1.76	1.48		1.80		1.96	1.38		1.36		
Programming for Problem Solving Lab	CS106ES	2.92	2.52	2.74	1.57	2.54	2.54			2.14	1.57	1.00	1.94	2.92	2.54
Environmental Science	MC109ES						2.00	3.00	2.00						1.00
Mathematics - II	MA201BS	2.09	2.09	2.09	2.09	1.54							2.09	1.39	1.54
Chemistry	CH202BS	1.31	1.33	0.87			0.61	1.21			0.61		1.21		
Basic Electrical Engineering	EE203ES	2.32	2.32	1.99	1.87	1.49	1.53						1.55	1.24	1.35
Engineering Workshop	ME205ES	1.65	1.71	2.11	2.59	1.44	1.44						1.42		
English	EN205HS									2.32	2.28		2.48		2.48
Engineering Chemistry Lab	CH206BS	1.92	1.34		1.74		2.50			2.88	0.96		0.96		
English Language and Communication S	EN207HS									2.60	2.60	2.00	2.40		
Basic Electrical Engineering Lab	EE208ES	2.94	2.94	2.76	2.94	2.94	1.98			2.94		0.98	1.96	1.96	1.96
Electronic Devices and Circuits	EC301PC	2.20	2.20	2.20	1.47	1.47						1.53	1.47	1.89	1.53
Network Analysis and Transmission Lir	EC302PC	1.79	1.81	1.73	1.88	2.14	0.61	0.61					0.71	1.02	0.75
Digital System Design	EC303PC	1.76	1.76	1.63	1.68	1.63							1.15	1.73	1.88
Signals and Systems	EC304PC	1.52	1.25	0.87	0.95	1.01								1.01	1.33

Probability Theory and Stochastic Proce	EC305ES	1.78	1.39	1.07	1.23	1.23							1.02	1.23	1.23
Electronic Devices and Circuits Lab	EC306PC	2.74	2.74	2.00										1.82	1.82
Digital System Design Lab	EC307PC	2.86	2.86	1.90	1.90	1.90								1.90	1.90
Basic Simulation Lab	EC308ES	2.36	2.44	2.56	2.36	2.56							1.84	2.40	2.56
Constitution of India	MC309						0.83	1.80	2.33	0.90	1.14		0.67		
Laplace Transforms, Numerical Method	MA401BS	1.51	1.39	1.02	1.07	1.00							1.12	0.61	1.23
Electromagnetic Fields and Waves	EC402PC	2.02	2.02	1.59	0.67		0.67							1.59	1.23
Analog and Digital Communications	EC403PC	2.02	1.77	1.74	1.73		2.44					1.74	1.38	1.33	1.33
Linear IC Applications	EC404PC	2.20	2.07	1.66	1.61								1.68	2.07	1.66
Electronic Circuit Analysis	EC405PC	1.59	1.47	1.59	0.95	0.95							1.15	1.59	0.95
Analog and Digital Communications La	EC406PC	2.62	2.44	2.24	1.95	1.90	1.87						1.80	1.60	1.80
IC Applications Lab	EC407PC	2.48	2.12	2.68	2.12	2.72	2.12					1.72	2.12	2.48	2.12
Electronic Circuit Analysis Lab	EC408PC	2.94	1.95	1.96	2.36									2.16	1.95
Gender Sensitization Lab	MC409	2.00	1.80	2.80	2.00		2.00		2.60				2.00	1.60	2.00
Microprocessors & Microcontrollers	EC501PC	1.60	0.80	1.25	1.61	1.61								*1.47*	1.47
Data Communications and Networks	EC502PC	2.20	2.18	2.18	2.18	1.99					2.72	2.18	2.72	2.54	2.54
Control Systems	EC503PC	1.45	1.66	1.69	1.04	1.31	1.31			1.96	1.31			1.31	1.16
Business Economics & Financial Analy	SM504MS	1.51	1.04	0.71	0.94	0.74	0.92	1.04	0.81	1.17	0.92	0.78	0.76		
Electronic Measurements & Instrumenta	EC513PE	1.80	1.78	1.96	1.33	1.78					1.43	1.43		1.23	1.61
Microprocessors & Microcontrollers La	EC505PC	2.86	1.90	1.90	1.90	1.90							0.95	2.10	1.15
Data Communications and Networks La	EC506PC	1.91	1.95	2.09	2.09	0.96							1.79	1.58	1.59
Advanced Communication Skills Lab	EN508HS								2.00	2.40	3.00		2.20		
Intellectual Property Rights	MC510						2.00	3.00	3.00			0.90	0.90		
Cyber Security		2.00	2.60	2.20	2.00	2.60	2.00	2.00	2.00				3.00	2.60	3.00
Antennas and Propagation	EC601PC	2.15	2.15	1.88	1.92	1.31	1.43						1.43	*1.88*	1.15
Digital Signal Processing	EC602PC	1.62	1.62	1.27	1.78	1.00						1.00	1.66	1.41	1.33
VLSI Design	EC603PC	1.98	1.73	1.45	1.82	1.98	1.32						1.63	1.63	1.49
Embedded System Design	EC613PE	2.13	1.54	1.65	1.65	2.12						1.87	1.43	1.61	1.50

Non-Conventional Sources of Energy	ME800OE	1.77	1.94	1.78	1.57			0.83					1.15	1.31	1.15
Digital Signal Processing Lab	EC604PC	2.66	2.10	2.32	2.28	2.30							1.93	1.93	1.15
e – CAD Lab	EC605PC	2.68	2.88	2.68	2.30	2.88							1.92	2.50	1.93
Scripting Languages Lab	EC606PC	2.32	2.50	2.12	2.50	2.50						2.32	2.88	2.32	1.92
Environmental Science	MC609						2.00	3.00	2.00						1.00
Fundamentals of AI		3.00	2.60	2.80	2.60	2.60	1.75	2.00	2.00	1.60	2.20	1.80	3.00	2.40	3.00
Microwave and Optical Communication	EC701PC	2.88	1.92	2.00	1.40	1.00	1.93						1.87	1.87	2.00
Digital Image Processing	EC713PE	2.54	1.51	2.09	1.68	1.69	1.66						1.68	1.66	1.66
Database Management Systems	EC722PE	2.94	2.54	2.33	2.00	1.00							1.70	2.74	2.94
Python Programming	CS702OE	1.73	1.38	1.26	2.22	2.57							2.14	1.68	0.84
Professional Practice, Law & Ethics	SM702MS						2.88	2.00	1.48	1.00	0.98	1.40		0.90	1.40
Microwave and Optical Communication	EC703PC	2.66	2.28	1.13	2.08	1.84	1.22							2.70	2.25
Industrial Oriented Mini Project Summe	EC704PC	2.48	2.32	2.12	2.32	1.76		0.96	0.96	1.92	1.92	0.95	1.36	2.48	2.32
Seminar	EC705PC	2.50	2.12	2.68	2.12	1.36					2.88	1.92	1.16	2.32	2.50
Project Stage - I	EC706PC	2.82	2.46	2.28	2.10	2.28	2.50	1.93	2.70	2.70	1.30	2.70	2.04	2.60	2.40
Radar Systems	EC812PE	2.12	1.92	2.08	1.65		1.72						1.93	1.92	1.30
Low Power VLSI Design	EC823PE	2.36	2.18	2.18	2.00	1.61							1.61	1.51	1.66
Total Quality Mangement	MT802OE						1.20	1.00	1.80	1.00	1.00	1.50			1.12
Project Stage - II	EC801PC	2.22	2.40	2.55	2.05	2.38	1.85	1.40	1.85	1.80	2.70	2.33	2.38	1.84	2.02
	Attainment	**2.19**	**1.97**	**1.91**	**1.83**	**1.76**	**1.64**	**1.69**	**1.97**	**1.87**	**1.67**	**1.57**	**1.67**	**1.82**	**1.68**

PROGRAM COORDINATOR

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

R-18 (JNTUH) (2020-24) students

PROGRAM NAME: B.Tech -ELECTRONICS AND COMMUNICATION ENGINEERING

PROGRAM OUTCOME- ATTAINMENT (INDIRECT METHOD)

S. No.	Method	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	Program Exit Survey	3.00	2.70	2.70	2.40	2.63	2.60	3.00	2.00	2.43	2.40	2.30	2.60	2.60	2.87
2	Employer Survey (Industry Survey)	2.60	2.76	2.60	2.90	2.50	2.20	2.60	2.20	2.20	2.20	2.50	2.50	2.70	2.80
3	Alumni Survey	2.60	2.70	2.60	2.70	3.00	2.00	2.40	2.70	2.80	2.40	2.60	2.30	2.50	3.00
	Average	2.73	2.72	2.63	2.67	2.71	2.27	2.67	2.30	2.48	2.33	2.47	2.47	2.60	2.89

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

R-18 (JNTUH) 2020 Admitted students

OVERALL PO ATTAINMENT- (2020-24)

PROGRAM NAME: B.Tech -ELECTRICAL AND ELECTRONICS ENGINEERING

PROGRAM OUTCOME- ATTAINMENT (DIRECT+INDIRECT METHOD)

(Direct Attainment of PO = Average of attainments of all CO contributing to the specific PO. Overall attainment of PO = 80% attainment through the direct method + 20% of POattainment through indirect method.Overall attainment of PO = 80% POdir + 20 % POindir)

S. No.	Method	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	DIRECT	2.14	2.06	2.11	2.04	2.06	2.00	1.59	1.64	1.80	1.65	1.80	1.93	2.07	2.06
	80%	1.71	1.65	1.69	1.63	1.65	1.60	1.27	1.31	1.44	1.32	1.44	1.55	1.66	1.65
2	INDIRECT	1.69	1.98	2.13	2.06	1.88	1.82	1.92	1.64	2.04	1.89	2.03	2.32	1.90	2.60
	20%	0.34	0.40	0.43	0.41	0.38	0.36	0.38	0.33	0.41	0.38	0.41	0.46	0.38	0.52
	TOTAL	2.05	2.04	2.11	2.04	2.03	1.96	1.66	1.64	1.85	1.70	1.85	2.01	2.04	2.17
	% of PO & PSO attainment	68.3	68.1	70.4	68.2	67.5	65.4	55.2	54.7	61.7	56.5	61.5	67.0	67.9	72.2

HOD.EEE

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(Approved by AICTE, New Delhi & Affiliated to JNTUH)

2020-24 Passed Out Batch: Attainment

R18 REGULATION

S. NO	Code	Subject	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	C101	Mathematics-I	1.4	1.6	1.4	1.4								1.6	1.8	
2	C102	CHEMISTRY	2	1.4				1.2	1.4	1.2	1.6			1.4		
3	C103	Basic Electrical Engineering	2	2	2	2	2	1.8			1			2	1.87	2
4	C104	Engineering Workshop	1.78	1.72	2.12	2.64	1.24	1.4		1.4		1.22		1.6		
5	C105	English						1.42		1.44	2.2		1.76	2.14		
6	C106	Engineering Chemistry Lab	1.4	1.28		1.6		2.38		1.42	1.6	0.9				
7	C107	English Language and Communication Skills Lab						1.47			1.4	2.3		1.98		
8	C108	Basic Electrical Engineering Lab	2	1.8	2.2	2.4	2.2	2.4	0.89		2.2	0.9	2.4	2.68	2.3	2.5
9	C109	Mathematics – II	2	2.1		2								1.35	1.71	1.5
10	C110	Applied Physics	1.75	1.87	2.14		1.08		1.63	1.22		1.51		1.18	2.44	
11	C111	Programming for Problem Solving	1.87	1.6	1.5	1.8	1.6	2.14	1.43	1.43	1.43	1.43	1.43	1.33	1.48	
12	C112	Engineering Graphics	2.5	2.44	2.12	2.62	2.42	2.72			1.81	1.77		2.5		
13	C113	Applied Physics Lab	2.9	1.9		1.9				1.3	1.1	1.3			2.5	2.7
14	C114	Programming for Problem Solving Lab	1.84	1.72	1.84	1.59	1.64	1.84	1.23	1.23	1.23	1.23	1.23	1.35	1.35	1.84
15	C115	Environmental Science						2.23	1.92	1.54	1.36	1.92		1.8		
16	C201	Engineering Mechanics	1.63	1.83	2.17									2.11	1.95	
17	C202	Electrical Circuit Analysis	1.75	1.87	2.14	1.76	2.44	1.76	1.43	1.43	1.02	1.36	0.81	2.14	1.88	1.97
18	C203	Analog Electronics	1.12		2.17	1.78	1.63								2.05	
19	C204	Electrical Machines-I	0.93	2.80	2.62	1.69					1.50		1.50	2.22	2.62	2.24
20	C205	Electromagnetic Fields	2.2	1.87		1.78		2.44		0.75			1.47	1.34	1.75	1.59
21	C206	Electrical Machines Lab - I	0.98	2.94	2.74	1.94					1.96		1.76	2.56	2.54	2.16
22	C207	Analog Electronics Lab														
23	C208	Electrical Circuits Lab	2.18	2.52	2.85	2.00	2.70	2.43	1.30	1.40	1.80	1.93	0.80	2.85	2.15	2.33
24	C209	Gender Sensitization Lab														
25	C210	Laplace Transforms, Numerical	1.73	1.33	1.81	1.19									2.06	1.77
26	C211	Electrical Machines – II	2.48	1.79	2.12	2.02	2.50	2.14	1.26	1.38	1.66	1.92	1.87	1.82	1.92	2.14

27	C212	Digital Electronics	2.2	1.68	1.45	2.05	2.70								1.72			
28	C213	Control Systems	2.03	1.87	2.03	1.76	1.64				1.19		1.64	1.70	1.60	1.19		
29	C214	Power Systems - I	1.81	2.27	2.27	2.04	2.27	2.49	1.36	1.59	1.81	2.04	1.81	2.04	2.18			
30	C215	Digital Electronics Lab																
31	C216	Electrical Machines Lab - II	2.94	2.36	2.94	2.54	2.16	2.48	1.73	1.67	1.95	2.20	2.45	2.45	2.43	2.45		
32	C217	Control Systems Lab	2.94	2.74	2.94	2.27	2.36				1.96		2.54	2.27	2.14	1.76		
33	C218	Constitution of India				2.00		2.13	2.66	2.66	1.77	1.22		1.60				
34	C301	Power Electronics	2.7	2.70	2.38	2.15	2.32				1.80		2.38	2.32	1.78	1.58		
35	C302	Power Systems - II	1.73	1.83	1.78	1.61	1.59	1.34			1.49		2.20	1.91	1.65	1.32		
36	C303	Measurements and Instrumentation	1.99	1.99	2.03	1.87	1.87						1.10	1.55	1.55	1.55		
37	C304	High Voltage Engineering	2.76	2.18					1.48			2.00		1.84	1.48	1.66		
38	C305	Business Economics and Financial							1.22		2.00	0.95	0.97					
39	C306	Power System Simulation Lab	2.08	2.28	2.28	2.38	2.02	1.62			1.84		2.76	2.22	2.02	1.86		
40	C307	Power Electronics Lab	2.82	2.82	2.46	2.40	2.42				1.88		2.46	2.42	2.08	1.70		
41	C308	Measurements and Instrumentation Lab	2.12	1.72	1.52	2.48		1.16	0.96	1.92	1.92			1.92	1.92	1.92		
42	C309	Advanced Communication Skills Lab																
43	C310	Intellectual Property Rights	2.13	2.65	3.00		2.30	3.00		2.01				2.00				
44	C311	Non conventional energy sources	1.65		2.48				2.18						1.96	1.99		
45	C312	power semiconductor drive	3.00	2.40	2.40		2.60				2.00		1.40	2.60	2.60	2.60		
46	C313	Signals and Systems	2.29	2.29	1.02		1.03				1.36			1.69	1.53	2.29		
47	C314	Microprocessors & Microcontrollers																
48	C315	Power System Protection	1.06	1.18	2.26	2.26	1.97	1.47	1.34	1.18	1.51	0.92	1.97	2.26	2.10	1.97		
49	C316	Power System Operation and Control	1.95	1.95	1.97	1.83	1.81						1.08	1.51	1.51	1.51		
50	C317	Power System Lab																
51	C318	Microprocessors & Microcontrollers Lab	1.2	1.64	1.79	1.87	1.29	1.38	1.20	1.14	1.62	1.01	1.72	1.62	1.32	1.72		
52	C319	Signals and Systems Lab																
53	C320	Environmental Science												2.60	2.60	2.28		
54	C401	Electronic Sensors (OE-II)	2.6	2.60	1.91	2.60	2.60											
55	C402	Electrical and Hybrid Vehicles(PE-III)	2.48	2.00	1.47	1.98	2.48	1.96			2.42		1.35	1.63	2.18	2.14		
56	C403	HVDC Transmission (PE-IV)	2.94	3.00	2.00	3.00					3.00		2.36	2.50	2.36	2.54		

57	C404	Fundamentals of Management for							0.90	1.00	1.40	0.90	1.40	0.90		
58	C405	Electrical & Electronics Design Lab														
59	C406	Industrial Oriented Mini Project/	3	3.00	2.40	3.00	3.00			2.00	3.00	2.60	2.40	1.75	3.00	3.00
60	C407	Seminar	2.57					3.00	3.00	2.10	2.00	2.70			2.24	2.42
61	C408	Project Stage - I	2.82	2.10	2.24	1.53	2.55	2.05	2.26	2.64	2.82	2.46	2.46	1.90	2.82	2.82
62	C409	MEASURING INSTRUMENTS (OE-	2.82	1.88						2.00				1.84	1.52	1.72
63	C410	Power Quality & FACTS (PE-V)	2.14	1.16	1.16	2.34			2.16	2.50					2.94	
64	C411	Electrical Distribution Systems(PE-VI)	2.76	1.84			0.90	2.00	0.90						2.76	2.60
65	C412	Project Stage - II	2.88	2.17	2.30	1.60	2.70	2.13	2.32	2.70	2.88	2.50	2.50	1.93	2.88	2.88
Average			2.14	2.06	2.11	2.04	2.06	2.00	1.59	1.64	1.80	1.65	1.80	1.93	2.07	2.06
% VALUE			71.23	68.57	70.26	68.06	68.72	66.64	53.00	54.63	60.08	54.92	59.98	64.43	69.07	68.66

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

R-18(JNTUH) 2020 Admitted students

PROGRAM NAME: B.Tech -ELECTRICAL AND ELECTRONICS ENGINEERING

PROGRAM OUTCOME- ATTAINMENT (INDIRECT METHOD)

S. No.	Method	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	Exit Survey	1.78	1.63	1.97	1.73	1.81	1.95	1.97	1.97	2.17	1.90	1.95	2.29	2.17	2.85
2	Employer Survey (Industry Survey)	1.8	1.8	2.1	2.4	1.8	1.5	1.6	1.4	2.2	2.2	2.1	2.6	1.6	2.1
3	Alumni Survey	1.48	2.52	2.333	2.04	2.04	2	2.2	1.56	1.76	1.56	2.04	2.08	1.92	2.84
	Average	1.69	1.98	2.13	2.06	1.88	1.82	1.92	1.64	2.04	1.89	2.03	2.32	1.90	2.60

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DEPARTMENT OFMECHANICAL ENGINEERING

PROGRAM NAME: B.Tech -MECHANICAL ENGINEERING

PROGRAM OUTCOME- ATTAINMENT (INDIRECT METHOD)

20 series

S. No.	Method	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	Program Exit Survey	2.56	2.67	2.50	2.61	2.61	2.56	2.56	2.39	2.56	2.44	2.67	2.61	2.50	2.67
2	Employer Survey (Industry Survey)	2.63	2.63	2.75	2.25	2.63	2.63	2.25	2.63	2.88	2.25	2.88	2.50	2.63	2.75
3	Alumni Survey	2.70	2.60	2.50	2.30	2.50	2.50	2.60	2.40	2.50	2.40	2.60	2.70	2.70	2.70
	Average	**2.63**	**2.63**	**2.58**	**2.39**	**2.58**	**2.56**	**2.47**	**2.47**	**2.64**	**2.36**	**2.71**	**2.60**	**2.61**	**2.71**

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DEPARTMENT OF MECHANICAL ENGINEERING

R-18 (JNTUH) 2020Admitted students
OVERALL PO ATTAINMENT

PROGRAM NAME: B.Tech -MECHANICAL ENGINEERING

PROGRAM OUTCOME- ATTAINMENT (DIRECT+INDIRECT METHOD)

(Direct Attainment of PO = Average of attainments of all CO contributing to the specific PO. Overall attainment of PO = 80% attainment through the direct method + 20% of POattainment through indirect method.Overall attainment of PO = 80% POdir + 20 % POindir)															
S. No.	Method	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	DIRECT	2.39	2.14	2.08	1.91	2.30	1.78	2.68	1.70	1.84	1.62	1.90	2.04	2.04	1.93
	80%	1.91	1.71	1.66	1.53	1.84	1.42	2.15	1.36	1.47	1.30	1.52	1.63	1.63	1.54
2	INDIRECT	2.63	2.63	2.58	2.39	2.58	2.56	2.47	2.47	2.64	2.36	2.71	2.60	2.61	2.71
	20%	0.53	0.53	0.52	0.48	0.52	0.51	0.49	0.49	0.53	0.47	0.54	0.52	0.52	0.54
	TOTAL	2.44	2.24	2.18	2.01	2.36	1.94	2.64	1.85	2.00	1.77	2.06	2.15	2.15	2.08
	% of PO & PSO attainment	81.2	74.7	72.7	66.9	78.6	64.5	88.0	61.8	66.7	59.1	68.8	71.8	71.8	69.5

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DEPARTMENT OF MECHANICAL ENGINEERING

R-18 (JNTUH) 2020Admitted students

PROGRAM NAME: B.Tech -MECHANICAL ENGINEERING

PROGRAM OUTCOME- ATTAINMENT (DIRECT METHOD)

SL. NO	SUBJECT	SUBJECT CODE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	Probability and Statistics & Complex	MA301BS	0.78	0.75	1.02	1.32	0.71	0.78	1.53	0.79	0.71	0.71		0.79		
2	Mechanics of Solids	ME302PC	2.66	2.66	2.66	2.5	2.34				1.77	1.77	1.77	2.66	2.5	2.66
3	Material Science and Metallurgy	ME303PC	2.94	2.56	1.96	1.78	1								1.56	1.76
4	Production Technology	ME304PC	1.56	1.36	1.5	1.18									1.56	1.76
5	Thermodynamics	ME305PC	2.38	1.63	1.63				0.71					0.76	0.81	2.44
6	Production Technology Lab	ME306PC	2.08	1.45	1.8		2.4			1.8					1.54	1.68
7	Machine Drawing Practice	ME307PC	2.82	2.08	2.82	1.88	2.82				1.88	1.88	1.88	2.82	2.82	1.88
8	Material Science and Mechanics of	ME308PC	2.88	2.5	2.3	1.94	1.4								0.96	2.88
9	Constitution of India	ME308PC				1.8		2	2.38	2.4	1.59	1.14		2.16		
10	Basic Electrical and Electronics	EE401ES	2.38	2.38	2.07	1.89	1.63	1.63						1.59		
11	Kinematics of Machinery	ME402PC	2.38	1.59	2.38	1.59							1.63		0.79	
12	Thermal Engineering - I	ME403PC	1.44	1.1	1.59	1.42	1.4	1.56	1.63	0.78	0.96	1.53	1.44	0.71	1.32	1.59
13	Fluid Mechanics and Hydraulic	ME404PC	2.38	1.59	1.28	0.81		0.81							1.17	0.79
14	Instrumentation and Control Systems	ME405PC	2.66	1.59	0.79	0.79	1.77	0.96	0.79	0.79	1.1	1.28	1.1	1.59	0.94	1.44
15	Basic Electrical and Electronics	EE409ES	2.44	2.44	2.28	2.44	2.44	1.63			2.44		0.81	1.63		

16	Fluid Mechanics and Hydraulic	ME407PC	0.81		1.63						1.63	0.51				0.81
17	Instrumentation and Control Systems	ME408PC	2.94	2.94	2.94	2.94	2.94	2.56	20.98		2.54	0.9	2.94	2.94	2.54	2.74
18	Gender Sensitization Lab	MC409	1.6	1.44	2.24	1.6	1.6		2.08					1.6	1.28	0.8
19	Dynamics of Machinery	ME501PC	2.94	1.96	0.98	0.98						0.98				0.98
20	Design of Machine Members-I	ME502PC	2.94	2.74	2.36	2.36	2.36	2.74	2.16	2.56	2.36	2.36	2.36	2.36	2.94	2.94
21	Metrology & Machine Tools	ME503PC	2.94	2.54	2.94	2.54	2.94				1.96	1.96	1.96	2.94	2.94	2.94
22	Business Economics & Financial	SM504MS							1.38		1.8	1	0.97			
23	Thermal Engineering-II	ME505PC	2.94	2.94	2.94	2.94	2.94	1.96	1.96			1.96	1.96	2.94	1.56	1.76
24	Operations Research	ME506PC	2.93	1.95	1.95			0.98		0.98		0.98	0.98		0.98	0.98
25	Thermal Engineering Lab	ME507PC	2.44	2.28	2.28	2.28	2.28	1.46	1.46		1.36	1.63	1.14	1.63	2.44	2.44
26	Metrology & Machine Tools Lab	ME508PC	3	2.4	3	2.4	3				2	2	2	3	3	3
27	Kinematics & Dynamics Lab	ME509PC	0.81		0.81	2.44					1.63	0.81				0.81
28	IntellectualPropertyRights	*MC510						1.8	1.8	1.6			0.4	0.36		
29	Design of Machine Members-II	ME601PC	2.94	2.74	2.36	2.36	2.74	2.16	2.56	2.36	2.36	2.36	2.36	2.36	2.36	2.36
30	Heat Transfer	ME602PC	2.58	1.72	0.86	0.86										0.86
31	CAD & CAM	ME603PC	2	2	3	1										1
32	Unconventional Machining	ME611PE	1.26	0.52	1.5	1.52	1.1	1								0.9
33	Fundamentals of management for engi	CS601OE	2.44	2.03	1.22	2.44		1.63		2.44	2.44	2.44	2.44	1.63		
34	Finite Element Methods	ME604PC	3	3	2.8	2.8	3	2	2.4	1.2	1.2	2.2	2.2	3	3	3
35	Heat Transfer Lab	ME605PC	2.75	2.55	2.55	2.75	2.75	1.63	1.63					1.83	2.75	2.75
36	CAD & CAM Lab	ME606PC	0.92	2.75	2.75	2.75									1.83	0.92
37	Advanced Communication Skills lab	EN608HS	3	3	3	3	3	2.6	1		2.6	1	3	3	2.6	2.8
38	Environmental Science	*MC609						2	2.8	2.2	2	2	2.4			
39	Refrigeration & Air Conditioning	ME701PC	1.59	1.59	0.79	0.79										0.79
40	Additive Manufacturing(PE – II)	ME711PE	1.56	1.36	1.5	1.18									1.56	1.76

41	Power Plant Engineering(PE – III)	ME721PE	2.94	2.56	2.76	2.76	2.94	2.16	2.36	1.18	1.18	2.16	2.18	2.94	2.94	2.56
42	Fluid Power Systems(PE – IV)	ME733PE	2.94	2.36	2.56	2.36	2.94	2.16	2.74	1.18	1.18	2.16	2.18	2.94	2.74	2.56
43	REMOTE SENSING & GIS(OE – II)	CE700OE	2.94	2.74	2.36	2.34	2.94	1.96	2.36	1.18	1.36	2.34	2.14	2.94	2.54	2.16
44	IndustrialOrientedMiniProject/	ME702PC	2.88	2.2	2.28	1.6	3	2.12	2.68	2.68	2.88	2.48	2.48	2.1	2.88	2.88
45	Seminar	ME703PC	3	3	3	1					1.8	1	1.8	1	1.8	1.8
46	ProjectStage-I	ME704PC	2.88	2.52	1.76	1.96	2.12	1.56	1.72	1.88	1.8	0.96	1.72	0.96	1.72	1.72
47	Industrial Robotics (PE – V)	ME811PE	2.38	1.91	2.24	2.17	2.38	1.63	1.63			1.63	1.63	2.24	2.38	2.38
48	Industrial Management (PE– VI)	ME821PE	2.94	2.76	2.94	1.98	2.38	1.96	1.98	1.56	2.14	1.76	2.74	1.96	1.78	2.56
49	Basics of power plant engineering (OE– III)	EE800OE	1.96	1.96	0.98	1.18										1.38
50	ProjectStage-II	ME801PC	2.88	2.13	2.32	1.67	1.8	2.4	2.36	2.72	2.88	2.48	2.48	1.9	2.88	2.88
		Attainment	**2.39**	**2.14**	**2.08**	**1.91**	**2.30**	**1.78**	**2.68**	**1.70**	**1.84**	**1.62**	**1.90**	**2.04**	**2.04**	**1.93**

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DEPARTMENT OF MECHANICAL ENGINEERING

R-18 (JNTUH) 2020Admitted students

PROGRAM NAME: B.Tech -MECHANICAL ENGINEERING

PROGRAM OUTCOME- SET LEVEL (DIRECT METHOD)

SL.NO	SUBJECT	SUBJECT CODE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	Probability and Statistics & Complex Variables	MA301BS	1	1	1.3	1.6	1		2	1	1	1		1		
2	Mechanics of Solids	ME302PC	3	3	3	2.8	2.6				2	2	2	3	2.8	3
3	Material Science and Metallurgy	ME303PC	3	2.6	2	1.8	1								1.6	1.8
4	Production Technology	ME304PC	1.6	1.4	1.5	1.2									1.6	1.8
5	Thermodynamics	ME305PC	3	2	2				1					1	1	3
6	Production Technology Lab	ME306PC	2.2	1.5	2		2.67				2	1.75	2		1.6	1.8
7	Machine Drawing Practice	ME307PC	3	2.2	3	2	3				2	2	2	3	3	2
8	Material Science and Mechanics of Solids Lab	ME308PC	3	2.6	2.4	2	1.5								1	3
9	Constitution of India	ME308PC						1	2	2.6	1	1.25		1		
10	Basic Electrical and Electronics Engineering	EE401ES	3	3	2.6	2.4	2	2						2		

11	Kinematics of Machinery	ME402PC	3	2	3	2							2		1		
12	Thermal Engineering - I	ME403PC	3	3	2.8	2.8	2.8	2	2.6			2	2	3	3	3	
13	Fluid Mechanics and Hydraulic Machines	ME404PC	3	2	1.6	1									1.5	1	
14	Instrumentation and Control Systems	ME405PC	3	2	1	1	2.2	1.2	1	1	1.4	1.6	1.4	2	1.2	1.8	
15	Basic Electrical and Electronics Engineering Lab	EE409ES	3	3	2.8	3	3	2			3		1	2			
16	Fluid Mechanics and Hydraulic Machines Lab	ME407PC	2		2						2	1				1	
17	Instrumentation and Control Systems Lab	ME408PC	1	1.8	1	1	1		1		2	1.8	1.4	2	1.6	1	
18	Gender Sensitization Lab	MC409	2	1.8	2.8	2		2		2.6				2	1.6	2	
19	Dynamics of Machinery	ME501PC	3	2	1	1						1				1	
20	Design of Machine Members-I	ME502PC	3	2.8	3	2.4	2.8	2.2	2.6	2.4	2.4	2.4	2.4	2.4	3	2.4	
21	Metrology & Machine Tools	ME503PC	3	2.6	3	2.6	3				2	2	2	3	3	3	
22	Business Economics & Financial Analysis	SM504MS							1		2		1				
23	Thermal Engineering-II	ME505PC	3	3	3	3	3		2			2	2	3	1.6	1.8	
24	Operations Research	ME506PC	3	2	2					1		1	1		1	1	
25	Thermal Engineering Lab	ME507PC	3	2.8	2.8	2.8	2.8	1.8	1.8		1.67	2	1.4	2	3	3	
26	Metrology & Machine Tools Lab	ME508PC	3	2.4	3	2.4	3				2	2	2	3	3	3	
27	Kinematics & Dynamics Lab	ME509PC	1		1	3					2	1				1	

28	IntellectualPropertyRights	*MC510						2	3	3			1	1		
29	Design of Machine Members-II	ME601PC	3	2.8	3	2.4	2.8	2.2	2.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4
30	Heat Transfer	ME602PC	3	2	1	1										1
31	CAD & CAM	ME603PC	2	2	3	1										1
32	Unconventional Machining Processes(PE- I)	ME611PE	1.6	1.75	1.75			2		2	1	2	2	2	1.6	1.8
33	Fundamentals of management for engineers (OE-1)	CS601OE	3	2.5	3			2		3	3	3	3	2		
34	Finite Element Methods	ME604PC	3	3	2.8	2.8	3	2	2.4	1.2	1.2	2.2	2.2	3	3	3
35	Heat Transfer Lab	ME605PC	3	2.8	3	3	3	1.8	1.8					2	3	3
36	CAD & CAM Lab	ME606PC	1	3	3	3									2	1
37	Advanced Communication Skills lab	EN608HS									2.6	2.6	2	2.4		
38	Environmental Science	*MC609						2	3	2						1
39	Refrigeration & Air Conditioning	ME701PC	2	2	1	1										1
40	Additive Manufacturing(PE – II)	ME711PE	1.6	1.6	0.6			1			1			1	1.8	1.5
41	Power Plant Engineering(PE – III)	ME721PE	3	2.6	2.8	2.8	3		2.4	1.2	1.2	2.2	2.2	3	3	2.6
42	Fluid Power Systems(PE – IV)	ME733PE	3	2.4	2.6	2.4	3		2.8	1.2	1.2	2.2	2.2	3	2.8	2.6
43	REMOTE SENSING & GIS(OE – II)	CE700OE	3	2.8	2.4	2.4	3		2.4	1.2	1.4	2.4	2.2	3	2.6	2.2
44	IndustrialOrientedMiniProject/ Summer Internship	ME702PC	3	2.33	2.4	1.67	3	2.2	2.8	2.8	3	2.6	2.6	2.25	3	3

45	Seminar	ME703PC	3	3	3	1					1.8	1	1.8	1	1.8	1.8
46	ProjectStage-I	ME704PC	3	2.6	2.6	1.8	2	2.2	1.6	1.8	2	1	1.8	1	1.8	1.8
47	Industrial Robotics (PE – V)	ME811PE	3	2.4	2.8	2.67	3		2			2	2	2.8	3	1.8
48	Industrial Management (PE– VI)	ME821PE	3	2.8	3	2	2.4		2	1.6	2.2	2	2.8	2	1.8	2.6
49	Basics of power plant engineering (OE– III)	EE800OE	2	2	1	1.2										1.4
50	ProjectStage-II	ME801PC	3	2.33	2.4	1.67	2	2.5	2.4	2.8	3	2.6	2.6	1	3	3
		Set level	**2.60**	**2.35**	**2.28**	**2.04**	**2.50**	**1.90**	**2.10**	**1.94**	**1.91**	**1.87**	**1.95**	**2.13**	**2.17**	**2.02**

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(An ISO 9001:2015 Certified Institution)

DEPARTMENT OF CIVIL ENGINEERING

R-18 (JNTUH) 2020 Admitted students

OVERALL PO ATTAINMENT- (2020-24)

PROGRAM NAME: B.Tech -CIVIL ENGINEERING

PROGRAM OUTCOME- ATTAINMENT (DIRECT+INDIRECT METHOD)

(Direct Attainment of PO = Average of attainments of all CO contributing to the specific PO. Overall attainment of PO = 80% attainment through the direct method + 20% of POattainment through indirect method.Overall attainment of PO = 80% POdir + 20 % POindir)

S. No.	Method	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	DIRECT	2.09	1.87	1.90	1.70	1.52	1.47	1.47	1.49	1.38	1.41	1.33	1.51	1.66	1.73
	80%	1.67	1.50	1.52	1.36	1.22	1.18	1.18	1.19	1.10	1.13	1.06	1.21	1.33	1.38
2	INDIRECT	1.59	2.07	2.2	1.98	2.11	1.85	1.94	1.89	2.21	2.1	2.31	2.32	1.81	2.67
	20%	0.32	0.41	0.44	0.40	0.42	0.37	0.39	0.38	0.44	0.42	0.46	0.46	0.36	0.53
	TOTAL	**1.99**	**1.91**	**1.96**	**1.76**	**1.64**	**1.55**	**1.56**	**1.57**	**1.55**	**1.55**	**1.53**	**1.67**	**1.69**	**1.92**
% of PO & PSO attainment		66.33	63.67	65.33	58.53	54.60	51.53	52.13	52.33	51.53	51.60	50.87	55.73	56.33	63.93

HOD-CIVIL
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PROGRAM NAME: B.Tech -CIVIL ENGINEERING

PROGRAM OUTCOME : ATTAINMENT (DIRECT METHOD)

S. NO	Code	Subject	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	C101	Mathematics-I	2.22	1.75	1.75	2.05	1.28	0.79						1.73		
2	C102	Engineering Physics	2.86	2.10	2.28		1.33		1.30			1.90		1.50		
3	C103	Programming for Problem Solving	2.11	1.68	2.27	1.51	0.76							0.76	2.11	
4	C104	Engineering Graphics	1.30	1.63	1.61	1.63	1.79					1.10		1.15		0.69
5	C105	Engineering Physics Lab	0.67	0.47	0.33	0.60	0.50		0.67		0.67	0.47		0.47		
6	C106	Programming for Problem Solving Lab	2.28	1.79	2.44	1.63	0.98							0.81	1.14	1.14
7	C107	Environmental Science	0.80	1.60			0.80		2.40			1.60	0.16		0.16	1.28
8	C108	Mathematics – II	1.88	1.88	1.88	1.71	1.36							1.88		
9	C109	Chemistry	1.80	1.20	1.00				1.00					1.00		
10	C110	Engineering Mechanics	2.38	2.38	2.38	2.07	1.91	0.71	1.36	0.81	1.59	1.12	1.59	2.38	2.38	2.38
11	C111	Engineering Workshop	2.28	1.40	1.72	0.90	1.50	1.47	0.90	1.20	1.88	0.93	1.00	1.36	1.00	0.90
12	C112	English									2.60	2.60		2.80		2.80

13	C113	Engineering Chemistry Lab	1.00	1.00	1.00									1.00			
14	C114	English Language and Communication Skills Lab									2.60	2.60	2.00	2.40			
15	C201	Surveying and Geomatics	3.00	2.20	2.40		2.00							2.00	2.00	3.00	
16	C202	Engineering Geology	2.05	2.05	1.91	2.05	1.91	1.75	2.05	1.28	1.59	1.75	1.91	2.05	2.05	2.07	
17	C203	Strength of Materials - I	2.82	2.82	2.64	2.08	1.90	1.50	2.00	2.00	1.70	1.70	1.90	2.08	2.82	2.64	
18	C204	Probability and Statistics	0.90	1.35	0.90	1.35	1.35	0.90		0.90	0.90	0.90					
19	C205	Fluid Mechanics	1.98	2.34	2.16	1.98	1.08	1.13	0.90		0.90	1.08	1.08	1.44	2.16	1.98	
20	C206	Surveying Lab	3.00	3.00	3.00	3.00	3.00	2.33	2.00	2.00	2.00				2.00	3.00	
21	C207	Strength of Materials Lab	1.80	2.00	2.00	1.40					1.50		1.50	1.25	1.80	1.60	
22	C208	Engineering Geology Lab	2.07	2.22	2.07	2.05	2.07	1.75	2.07	1.28	1.59	1.75	1.75	2.07	2.05	2.07	
23	C209	Constitution of India						0.67	1.13	1.87	0.57	0.88	0.26				
24	C210	Basic Electrical and Electronics Engineering	2.06	2.08	2.24	1.91	1.89	2.08						1.55	1.55		
25	C211	Basic Mechanical Engineering for Civil Engineers	1.48	1.00	1.45	2.00	2.00	1.16	1.00							0.98	
26	C212	Building Materials, Construction and Planning	1.70	2.07	1.63	1.68	1.27	1.40	0.90		2.00	1.14	1.30	0.93	1.50	1.48	
27	C213	Strength of Materials - II	2.06	0.95	1.00	1.80	0.95	0.90	0.94		1.00	0.90	1.00		0.90	0.95	
28	C214	Hydraulics and Hydraulic Machinery	2.54	2.54	2.36	2.72	1.81	1.81	0.91	0.91		2.42			1.51	1.51	
29	C215	Structural Analysis - I	1.98	1.80	1.98	1.42	0.87						0.90	0.90	0.90		
30	C216	Computer aided Civil Engineering Drawing	1.80		2.40	1.33	1.67					2.00	1.75	1.50	1.80	1.40	
31	C217	Hydraulics and Hydraulic Machinery Lab	2.88	2.68	2.30	2.30	2.50	1.16	2.12		0.96	0.96	1.34	2.12	1.50	1.72	

32	C218	Basic Electrical and Electronics Engineering Lab	2.40	2.40	2.00	2.00	2.40										1.80
33	C219	Gender Sensitization Lab	1.92	1.76	2.68	1.96		1.92		2.48				2.00	1.60	2.00	
34	C301	Structural Analysis-II	2.20	2.38	2.04	1.84	1.15	1.66			1.10	1.48	1.28	1.66	2.02	2.02	
35	C302	Geotechnical Engineering	1.27	1.27	0.91	1.27	0.91		1.27		1.36	0.91	1.21	1.45	1.63	1.27	
36	C303	Structural Engineering –I (RCC)	2.72	2.60	2.60	0.87					1.57	0.87	1.57	0.87	1.57	1.57	
37	C304	Transportation Engineering	3.00	1.80	2.60	1.00		1.00	1.75	1.00	1.00	1.60		1.20	2.00	2.00	
38	C305	Concrete Technology (Professional Elective-I)	2.88	2.70	2.70	2.88	2.70	1.73	1.56	1.33	1.36	2.32	1.94	2.88	2.88	2.88	
39	C306	Engineering Economics and Accountancy						0.47	0.63	0.47	0.47	0.57	0.47	0.47	0.47	0.47	
40	C307	Highway Engineering & Concrete Technology Lab	3.00	1.50	2.00	1.50	2.00	2.00	2.00			2.00		2.00	1.25	1.20	
41	C308	Geotechnical Engineering Lab	1.60	1.25	2.20	2.33							1.75	1.00	1.60	1.67	
42	C309	Advanced Communication Skills Lab									2.40	3.00		2.20			
43	C310	Intellectual Property Rights						1.60	2.40	2.40			0.36	0.36			
44	C311	Hydrology & Water Resources Engineering	2.06	0.95	1.00	1.80	0.95	0.90	0.94		1.00	0.90	1.00		0.90	0.95	
45	C312	Environmental Engineering	2.40	2.60	2.00			3.00	2.20	2.00				2.50	2.00	3.00	
46	C313	Foundation Engineering	2.32	2.70	1.90							2.50			1.92	1.92	
47	C314	Structural Engineering –II (Steel)	2.16	1.88	2.12	0.95	0.98							0.96	0.96	0.97	
48	C315	Prestressed Concrete (Professional Elective –II)	1.75	2.06	1.47	1.77	1.61	1.04	0.90		1.18	0.88	1.18	1.18	1.61	1.61	
49	C316	Fundamentals of Management for Engineers (Open Elective –I)						1.45	1.16	1.14	1.14	1.71	1.69	2.00	1.41	1.24	
50	C317	Environmental Engineering Lab	0.93	0.87	0.92	0.93	0.80	0.89	0.89	0.78	0.73	0.87	0.78	0.87	0.73	0.87	

51	C318	Computer Aided Design Lab	1.75	1.50	1.67	1.50	1.00				2.00	1.40	1.75	1.33	1.75	1.75
52	C319	Environmental Science						1.88	2.82	1.88						1.00
53	C401	Estimation, Costing and Project Management	2.14	1.54	1.00	1.00	0.95	1.90		1.90	0.90	0.98	1.75	0.95	2.56	2.94
54	C402	Ground Improvement Techniques (Professional Elective –III)	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		2.00	1.00	2.00
55	C403	Irrigation and Hydraulic Structures (Professional Elective –IV)	2.02	0.93	0.90	1.80	0.90	1.00	0.92		0.90	0.90	0.90		0.92	1.00
56	C404	Health & Safety In Mines (Open Elective –II)	1.75	1.75	1.61	1.47	1.75	0.88	1.47	0.88	1.02	1.32	1.18	1.16	1.61	1.77
57	C405	Professional Practice law & Ethics							0.47		0.67	0.33	0.33	0.33		
58	C406	Industrial Oriented Mini Project/ Summer Internship	2.20	1.80	1.60	1.60	1.25		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
59	C407	Seminar	3.00	3.00	3.00	1.00					1.80	1.00	1.80	1.00	1.80	1.80
60	C408	Project Stage - I	2.76	2.40	2.40	1.66	1.86	2.02	1.46	1.64	1.84	0.92	1.64	0.92	1.64	1.64
61	C409	Environmental Impact Assessment (Professional Elective -V)	1.66	1.46	2.22	1.84	1.82	2.76	2.76	2.76	1.28	1.28	0.95	1.84	2.70	
62	C410	Airports, Railways and Waterways (Professional Elective –VI)	2.34	2.34	2.34	2.36	2.38	2.16	2.54	1.76	1.96	2.16	2.74	2.56	2.36	2.56
63	C411	Total Quality Management (Open Elective –III)						1.07		1.43			1.43			0.88
64	C412	Project Stage - II	3.00	2.60	2.60	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.40	3.00	3.00	3.00
Average			**2.09**	**1.87**	**1.90**	**1.70**	**1.52**	**1.47**	**1.47**	**1.49**	**1.38**	**1.41**	**1.33**	**1.51**	**1.66**	**1.73**
% VALUE			**69.71**	**62.28**	**63.26**	**56.52**	**50.83**	**49.16**	**49.11**	**49.75**	**46.09**	**46.89**	**44.33**	**50.21**	**55.23**	**57.71**

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S. No.	Method	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	Exit Survey	1.23	1.46	2.46	1.69	1.96	2.04	2.23	2.04	2.31	2.04	2.23	2.31	1.38	2.96
2	Employer Survey (Industry Survey)	1.75	1.75	2.13	2.25	1.88	1.50	1.38	1.63	2.25	2.25	2.13	2.50	1.75	2.13
3	Alumni Survey	1.79	3.00	2.00	2.00	2.50	2.00	2.21	2.00	2.07	2.00	2.57	2.14	2.29	2.93
	Average	**1.59**	**2.07**	**2.20**	**1.98**	**2.11**	**1.85**	**1.94**	**1.89**	**2.21**	**2.10**	**2.31**	**2.32**	**1.81**	**2.67**

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