2.6.2 *Attainment of CO, PO and PSO*

Attainment of Course Outcomes

Attainment of Course Outcomes

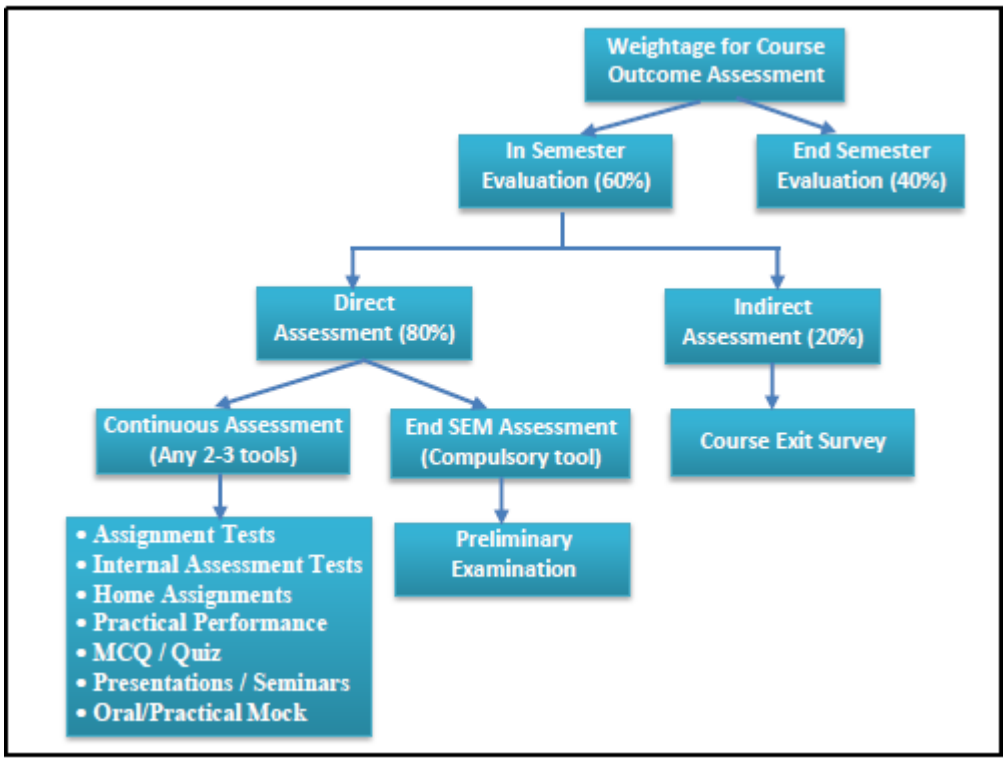
The process for finding the attainment of Course outcomes uses various tools/methods. These methods are classified into two types: In-semester tools (60%) and End-semester tools (40%).

A. In-semester Tools (60%): In-semester evaluations are measured from direct evaluation and indirect evaluation which has a weightage of 80% and 20% respectively.

- Direct Evaluation (80%) display the student's knowledge and skills from their performance. The direct evaluations includes the Continuous Internal Evaluations (CIE) such as class/assignment test, internal assessment tests, assignments, seminars, laboratory assignments/practicals, mini projects, preliminary examination etc. These methods provide a sampling of what students know and/or can do and provide strong evidence of student learning.
- Indirect Evaluations *(*20%*)* includes course exit survey which is taken upon completion of the course.

B. End-semester Evaluation (40%): The external evaluations includes End Semester Examination(ESE) conducted by the University.

The weightages given for various assessment tools used for the attainment of Course Outcomes are shown in the figure.



The list of various internal tools are listed below

Table: List of Course Assessment tools

		Tools	Frequency
In-semester	**Direct Evaluations**	Assignment tests	Twice in a semester
		Internal assessment	Twice in a semester
		Home Assignments	Selected Topic
		Practical	Weekly
		MOCK Practicals	Once in a semester
		MCQ	
		Seminar/Presentations	
		Mini Projects	
		Preliminary Examination	Once in a semester
	Indirect Evaluations	Course Exit Survey	
End-semester	--	End Semester Examination	

The course attainment for sample course CSC602 (System Programming and Compiler Construction) for academic year 2018-2019 is shown below;

Course Outcomes

Co No	Course Outcome
CPC602.1	Demonstrate the concept of various system programs.
CPC602.2	Illustrate the various data structures and passes of assembler design.
CPC602.3	Demonstrate different features and designing of macros.
CPC602.4	Demonstrate the concept of loaders and linkers.
CPC602.5	Illustrate and design analysis phase of a compiler for subset of C language
CPC602.6	Apply code optimization techniques to illustrate synthesis phase of compiler.

CO-PO and CO-PSO correlation

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CPC602.1	3	--	--	--	--	--	--	--	--	--	--	2	--	--
CPC602.2	2	3	--	--	--	--	--	--	--	--	--	--	--	--
CPC602.3	3	2	--	--	--	--	--	--	--	--	--	--	2	--
CPC602.4	3	2	--	--	--	--	--	--	--	--	--	--	2	--
CPC602.5	2	2	3	--	--	--	--	--	--	--	--	2	2	2
CPC602.6	2	3	2	--	--	--	--	--	--	--	--	3	2	2
Average	**3**	**2**	**3**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**2**	**2**	**--**

The attainment of the course outcomes of the courses are evaluated through the following steps:

a. Goal Set

b. Assignment of tools

c. Entry of Marks

d. Attainment calculation

a. Goal Set effective from Second Half of 2015

Course Outcome Attainment level is set based on previous three years' average performance levels in the university examination in that course. Process is given below:

1. Find out the average marks scored in each course in the last three years.
2. Find the number of students scoring above the average marks
3. This is set as middle level of goal setting [Level-2]
4. Depending on the trend of the result the lower level [Level-1] can be set by reducing 5% of the students score than the middle level.
5. The upper level [Level-3] can be set by increasing 5% of the students score than the middle level.

YEAR	FH-2013 (SPCC)	FH-2014 (SPCC)	FH-2015 (SPCC)	AVG of FH-2013, FH-2014, FH-2015
Total Students	66	76	76	73
Total Marks	2004	2602	2762	2456
Class Average Marks (Total Marks/Total Students)	30	34	36	34
% Class Average Marks	38	43	45	42
Number of students achieved the Average Marks	42	37	43	41
% of the Number of students achieved the Average Marks	58	49	57	56

Attainment Goal for SPCC (VI SEM)		
% of the student	% of marks	Level
61%	42%	*3*
56%	42%	*2*
51%	42%	*1*

* As Attainment Level 3 is less than 50%, Revised Goal Set is

Attainment Goal for SPCC (VI SEM)		
% of the student	% of marks	Level
61%	50%	*3*
56%	50%	*2*
51%	50%	*1*

b. Assignment of tools

Each course outcome is evaluated based on minimum two assessment tools selected by faculty at the beginning of the semester.

CO-ID	CO Statement	Tool1	Tool2	Tool3
CSC602.1	Demonstrate the concept of various system programs.	Assignment Test-1	Internal Assessment-1	MCQ-1
CSC602.2	Illustrate the various data structures and passes of assembler design.	Assignment Test-2	Internal Assessment-2	---
CSC602.3	Demonstrate different features and designing of macros.	Assignment Test-2	Internal Assessment-2	---
CSC602.4	Demonstrate the concept of loaders and linkers.	Class Test-1	MCQ-4	---
CSC602.5	Illustrate and design analysis phase of a compiler for subset of C language	Assignment Test-1	Internal Assessment-1	MCQ-2
CSC602.6	Apply code optimization techniques to illustrate synthesis phase of compiler.	Internal Assessment-1	MCQ-3	---

Some of the tools sample question papers where course outcomes are mentioned as below

Internal Assessment -1 Question Paper

Internal Assessment-1 (FH-2019)		
	Question (CO Number) [Cognitive Level]	**Marks**
Q1	**Answer any five (CO-6) [Remember & Apply]**	**10**
a.	Represent the following example in DAG (a/b)+(a/b)*(c*d)	

b.	Generate three address code for following code
	While(a<b) do
	If(c<d>)then
	x=y+2
	else
	x=y-2	

c.	Apply Dead code elimination techniques on following code
	int count;
	Void foo( )
	{
	int i;
	i=1;
	count=1;
	count=2;
	return ;
	count=3;
	}	

d.	Apply Constant folding and Constant propagation techniques on following code
	int x=12;
	int y=7-x/2;
	return y*(24/x+2);	

e.	Exemplify Basic block.	
f.	Exemplify Quadruples, Triples	
Q2	**Answer any one (CO-5) [Apply]**	**05**
a.	Construct LR(0)/SLR parser table for the following grammar S→aCDe C→Cbc C→b D→d And the parse the string "abbcbcde" . Show the content of stack, input buffer and action taken after each step	
b.	Construct LL(1) parsing table for the following grammar S→aBDh B→cC C→bC |ε D→EF E→g | ε F→f |ε Check whether the string "acbgh" is valid or not	
Q3	**Answer any one (CO-1) [Remember]**	**05**
a.	Define System Programming? State the difference between application program and system program	
b.	State the difference between Compiler and Interpreter	

Internal Assessment-2 Question Paper

Internal Assessment-2 (FH-2019)		
	Question (CO Number) [Cognitive Level]	**Marks**
Q1	**Answer any five**	**10**
a.	Define Macro. Give example	
b.	List the databases required in Macro-processor design along with their formats.	
c.	List out features of macro-processor	
d.	State the reason for assembler to be multi-pass program.	

e.	For the following code what will be symbol table generated by Pass-1 of two pass assembler.
	`JOHN START 0`
	`USING *,15`
	`L 1,FIVE`
	`A 1,FOUR`
	`ST 1,TEMP`
	`FOUR DC F'4'`
	`FIVE DC F'5'`
	`TEMP DS 1F`
	`END`	

f.	Demonstrate macro call within macro (nested macro).	
Q2	**Answer any one (CO-2) [Understand]**	**05**
a.	Exemplify following tables with reference to Assembler (a) MOT (b) POT (c)ST (d) BT	
b.	Draw flowchart for Pass-II of two pass assembler design	
Q3	**Answer any one (CO-3) [Understand]**	**05**
a.	Illustrate following macro features. Conditional macro macro call within macro definition	
b.	Draw flowchart forone-pass macro processor capable of handling macro call within macro definitions.	

c. Entry of Marks against Assessment Tools

Course Outcomes evaluation is done based on the schedule mentioned in the department calendar. Marks for each assessment tools are entered in the Academic Performance Monitoring System (APMS)

Sr. No	Roll Number	Name of Student	Course Outcome '1'								Course Outcome '2'								Course Outcome '3'								Course Outcome '4'								Course Outcome '5'										Course Outcome '6'								Tool1	
			Demonstrate the concept of various system programs.								Illustrate the various data structures and passes of assembler design.								Demonstrate different features and designing of macros.								Demonstrate the concept of loaders and linkers.								Illustrate and design analysis phase of a compiler for subset of C language										Apply code optimization techniques to illustrate synthesis phase of compiler.								ESE	%
			Assignment Test-1		Internal Assessment-1		MCQ-1		Prelim Exam		Assignment Test-2		Internal Assessment-2		Prelim Exam		Assignment Test-2		Internal Assessment-2		Prelim Exam		Class Test-1		MCQ-4		Prelim Exam		Assignment Test-1		Internal Assessment-1		MCQ-2		Prelim Exam		Internal Assessment-1		MCQ-3		Prelim Exam									
			Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%	Marks	%
Maximum Marks			5		5		20		10		10		5		10		10		5		5		5		10		5		15		5		20		10		10		20		10				80	
1	101601	A ANNIE GRACE C ANTHONY	4	80%	5	100%	14	70%	10	100%	5	50%	5	100%	8	80%	10	100%	3	60%	5	100%	5	100%	9	90%	5	100%	9	60%	3	60%	6	30%	9	90%	9	90%	9	45%	2	20%	63	79%
2	101602	AGWEKAR ATHARVA AJIT	4	80%	5	100%	12	60%	10	100%	10	100%	5	100%	10	100%	10	100%	5	100%	5	100%	5	100%	10	100%	5	100%	5	33%	5	100%	14	70%	4	40%	10	100%	13	65%	9	90%	67	84%
3	101603	BANAGAR AMRUTA N.	3	60%	5	100%	12	60%	10	100%	8	80%	5	100%	5	50%	4	40%	5	100%		0%	5	100%	10	100%	5	100%	9	60%	3	60%	7	35%		0%	9	90%	13	65%		0%	62	77%
4	101604	BHILEGAONKAR MADHAVI D.	2	40%	5	100%	12	60%	6	60%	10	100%	5	100%	2	20%	8	80%	5	100%	5	100%	5	100%	10	100%	5	100%	4	27%	2	40%	7	35%	4	40%	9	90%	5	25%	7	70%	54	67%
5	101605	BORHADE VIPUL GULABRAO	0	0%	5	100%	10	50%		0%	8	80%	5	100%	5	50%	10	100%	5	100%	4	80%	5	100%	0	0%	5	100%	7	47%	5	100%	18	90%	9	90%	10	100%	10	50%		0%	64	80%
6	101606	BOTHRAA SIDDHI R.	4	80%	5	100%	10	50%	10	100%	5	50%	2	40%	3	30%	2	20%	5	100%	5	100%	5	100%	9	90%	5	100%	9	60%	5	100%	17	85%	10	100%	8	80%	10	50%	6	60%	52	65%
7	101607	BRITTO CYRUS VALERIAN	4	80%	5	100%	10	50%		0%	5	50%	1	20%		0%	10	100%	2	40%		0%	0	0%	0	0%		0%	5	33%	0	0%	18	90%		0%	4	40%	10	50%		0%	50	62%
8	101608	CHERIAN JOEL MATHEW	3	60%	5	100%	10	50%	6	60%	5	50%	2	40%		0%	2	20%	2	40%	4	80%	2	40%	10	100%	2	40%	0	0%	5	100%	17	85%	2	20%	2	20%	10	50%		0%	62	77%

9	101609	CLARENCE JOHNSON	0	0%	5	100%	12	60%		0%	8	80%	2	40%		0%	4	40%	3	60%		0%	0	0%	4	40%		0%	2	13%	2	40%	8	40%		0%	2	20%	11	55%		0%	32	40%
10	101610	DALVI ANUJ SHRIKRISHN A	4	80%	4	80%	8	40%	8	80%	0	0%	4	80%	5	50%	0	0%	2	40%	5	100%	1	20%	10	100%	1	20%	5	33%	5	100%	15	75%	6	60%	9	90%	9	45%	7	70%	49	61%
11	101611	DANDONA RAVEENA RAJEEV	3	60%	5	100%	12	60%	10	100%	0	0%	5	100%	7	70%	5	50%	1	20%	5	100%	5	100%	10	100%	5	100%	0	0%	5	100%	14	70%	1	10%	8	80%	12	60%	7	70%	53	66%
12	101612	DESHPANDE SIDDHESH S	4	80%	5	100%	6	30%	10	100%	0	0%	5	100%	5	50%	0	0%	3	60%	5	100%	5	100%	0	0%	5	100%	5	33%	5	100%	13	65%	3	30%	10	100%	13	65%		0%	59	74%
13	101613	DSOUZA ADITYA SANJAY	0	0%	5	100%	14	70%	10	100%	0	0%	3	60%	6	60%	10	100%	4	80%	5	100%	4	80%	10	100%	4	80%	4	27%	5	100%	16	80%	10	100%	10	100%	15	75%		0%	67	84%
14	101614	DUTTA PIYA	4	80%	5	100%	0	0%	10	100%	0	0%	5	100%		0%	0	0%	4	80%	5	100%	5	100%	10	100%	5	100%	8	53%	5	100%	0	0%		0%	10	100%	0	0%	4	40%	60	75%
15	101615	FERNANDEZ AHAN NELSON	4	80%	5	100%	12	60%	10	100%	3	30%	5	100%	5	50%	6	60%	0	0%	5	100%	5	100%	10	100%	5	100%	3	20%	5	100%	16	80%	5	50%	7	70%	13	65%		0%	56	70%
16	101616	FREDDY POLY	3	60%	5	100%	20	100%	10	100%	0	0%	4	80%	8	80%	6	60%	4	80%	5	100%	5	100%	9	90%	5	100%	1	7%	5	100%	13	65%	1	10%	4	40%	14	70%		0%	65	81%
17	101617	GAVIN HENRY LEWIS	4	80%	5	100%	8	40%	9	90%	4	40%	5	100%	9	90%	9	90%	5	100%		0%	5	100%	0	0%	5	100%	7	47%	5	100%	13	65%	1	10%	10	100%	11	55%		0%	63	79%
18	101618	JACKSON JONATHAN BOB	4	80%	5	100%	0	0%	4	40%	0	0%	4	80%		0%	0	0%	1	20%		0%	0	0%	10	100%		0%	1	7%	2	40%	0	0%		0%	1	10%	0	0%		0%	25	31%
19	101619	JADHAV TEJESH PRAKASH	0	0%	5	100%	18	90%		0%	3	30%	5	100%		0%	10	100%	4	80%	5	100%	1	20%	0	0%	1	20%	0	0%	3	60%	14	70%		0%	10	100%	13	65%		0%	56	70%
20	101620	JITHIN K THOMAS	3	60%	5	100%	12	60%		0%	1	10%	3	60%	6	60%	5	50%	0	0%	5	100%	0	0%	9	90%		0%	2	13%	3	60%	13	65%	2	20%	5	50%	8	40%		0%	40	50%
21	101621	JOSEPH BLESSINGH ISRAEL	4	80%	5	100%	6	30%	10	100%	3	30%	5	100%	9	90%	5	50%	5	100%	5	100%	0	0%	9	90%		0%	9	60%	5	100%	13	65%	4	40%	10	100%	8	40%	8	80%	62	77%
22	101622	KANATT SHRUTI RAJU	4	80%	5	100%	12	60%	10	100%	6	60%	5	100%	10	100%	6	60%	2	40%	3	60%	5	100%	10	100%	5	100%	9	60%	2	40%	16	80%	6	60%	10	100%	14	70%		0%	59	74%
23	101623	KANKARIYA AKASH SUNIL	4	80%	5	100%	20	100%	10	100%	6	60%	4	80%	9	90%	10	100%	2	40%	5	100%	2	40%	9	90%	2	40%	8	53%	5	100%	18	90%	5	50%	9	90%	14	70%		0%	63	79%
24	101624	KESARWANI SAUMYA	4	80%	5	100%	7	35%	8	80%	4	40%	4	80%	8	80%	10	100%	5	100%	5	100%	5	100%	10	100%	5	100%	2	13%	5	100%	17	85%		0%	9	90%	13	65%	7	70%	65	81%
25	101625	KHATTAR RAJSHANKA R S	0	0%	5	100%	5	25%	10	100%	9	90%	5	100%	10	100%	10	100%	5	100%	1	20%	5	100%	0	0%	5	100%	9	60%	5	100%	18	90%	9	90%	9	90%	10	50%	9	90%	70	87%
26	101626	KOCHARA ABISHAI	2	40%	5	100%	10	50%	7	70%	2	20%	2	40%	5	50%	4	40%	1	20%	5	100%	0	0%	9	90%		0%	4	27%	1	20%	14	70%	2	20%	8	80%	10	50%	6	60%	38	47%
27	101627	KULKARNI ARYA DEEPAK	2	40%	5	100%	16	80%	9	90%	9	90%	5	100%	10	100%	8	80%	4	80%	5	100%	5	100%	10	100%	5	100%	8	53%	5	100%	13	65%	10	100%	10	100%	6	30%		0%	64	80%
28	101628	MAGDUM KAUSTUBH ASHOK	4	80%	5	100%	6	30%	7	70%	7	70%	4	80%	5	50%	7	70%	0	0%	5	100%	5	100%	10	100%	5	100%	2	13%	5	100%	15	75%	1	10%	10	100%	7	35%		0%	68	85%

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29	101629	MAKASARE GAURAV R	1	20%	5	100%	12	60%	8	80%	9	90%	5	100%	10	100%	9	90%	3	60%	5	100%	5	100%	10	100%	5	100%	6	40%	4	80%	16	80%	7	70%	10	100%	14	70%	9	90%	66	82%
30	101630	MATHIAS JOVIN VINCENT	2	40%	5	100%	8	40%	10	100%	3	30%	5	100%	6	60%	6	60%	5	100%	5	100%	5	100%	10	100%	5	100%	7	47%	5	100%	15	75%	7	70%	5	50%	8	40%	2	20%	65	81%
31	101631	MATHIAS SANDESH SUNNY	2	40%	5	100%	18	90%	10	100%	0	0%	5	100%		0%	0	0%	2	40%	5	100%	0	0%	6	60%		0%	2	13%	0	0%	15	75%	4	40%	7	70%	13	65%		0%	48	60%
32	101632	MENDES EDELQUINN PHILIP	1	20%	5	100%	10	50%	7	70%	5	50%	5	100%		0%	10	100%	4	80%	5	100%	5	100%	10	100%	5	100%	9	60%	5	100%	12	60%	8	80%	10	100%	16	80%		0%	67	84%
33	101633	NAIR SHRUTHI VIJU	3	60%	5	100%	12	60%	10	100%	5	50%	5	100%	10	100%	4	40%	5	100%	5	100%	5	100%	8	80%	5	100%	9	60%	5	100%	15	75%	10	100%	5	50%	13	65%	9	90%	70	87%
34	101634	NIMMY AUGUSTINE	0	0%	5	100%	8	40%	10	100%	0	0%	5	100%	4	40%	0	0%	5	100%	5	100%	5	100%	9	90%	5	100%	4	27%	5	100%	16	80%	4	40%	9	90%	11	55%		0%	63	79%
35	101635	NIRMAL BABU	3	60%	5	100%	0	0%	7	70%	5	50%	2	40%		0%	10	100%	2	40%	1	20%	0	0%	0	0%		0%	2	13%	2	40%	0	0%	2	20%	7	70%	0	0%		0%	51	64%
36	101636	NORONHA RYAN SUNIL	4	80%	5	100%	14	70%	10	100%	0	0%	5	100%		0%	8	80%	5	100%	5	100%	5	100%	10	100%	5	100%	8	53%	2	40%	19	95%	10	100%	7	70%	14	70%	9	90%	61	76%
37	101637	PAI SHREYA RAJENDRA	3	60%	5	100%	12	60%	10	100%	10	100%	5	100%	5	50%	10	100%	4	80%	5	100%	2	40%	10	100%	2	40%	9	60%	5	100%	16	80%	10	100%	5	50%	12	60%		0%	64	80%
38	101638	PALANI SALOME NELSON	4	80%	5	100%	10	50%		0%	10	100%	5	100%	10	100%	10	100%	5	100%	5	100%	0	0%	7	70%		0%	6	40%	5	100%	15	75%		0%	8	80%	15	75%	9	90%	70	87%
39	101639	PARAB OMKAR TULSIDAS	3	60%	5	100%	12	60%		0%	5	50%	5	100%		0%	7	70%	5	100%		0%	0	0%	0	0%		0%	1	7%	3	60%	16	80%		0%	9	90%	14	70%		0%	66	82%
40	101640	PATEL NAEEM	4	80%	5	100%	10	50%	10	100%	0	0%	5	100%	4	40%	10	100%	5	100%	5	100%	1	20%	10	100%	1	20%	7	47%	5	100%	13	65%	4	40%	8	80%	12	60%		0%	70	87%
41	101641	PATEL SRUJAN	2	40%	5	100%	12	60%	10	100%	1	10%	5	100%	10	100%	10	100%	5	100%	5	100%	5	100%	0	0%	5	100%	3	20%	3	60%	16	80%	8	80%	10	100%	14	70%	3	30%	68	85%
42	101642	PATIL ANUJA DILIP	3	60%	5	100%	10	50%	8	80%	6	60%	5	100%	10	100%	10	100%	5	100%	5	100%	3	60%	10	100%	3	60%	7	47%	5	100%	10	50%	2	20%	10	100%	8	40%	3	30%	68	85%
43	101643	PATIL VAIBHAV PRAKASH	0	0%	5	100%	12	60%	4	40%	0	0%	5	100%		0%	0	0%	0	0%		0%	0	0%	0	0%		0%	2	13%	5	100%	14	70%	4	40%	9	90%	15	75%		0%	66	82%
44	101644	PEREIRA TERRELL RUSSEL	2	40%	5	100%	14	70%	10	100%	5	50%	5	100%		0%	10	100%	5	100%	5	100%	0	0%	9	90%		0%	8	53%	5	100%	19	95%	8	80%	8	80%	14	70%		0%	61	76%
45	101645	PHILIP PRASUN ALEXANDER	3	60%	5	100%	12	60%	8	80%	3	30%	5	100%	8	80%	10	100%	5	100%	5	100%	5	100%	10	100%	5	100%	8	53%	3	60%	14	70%	10	100%	8	80%	12	60%	5	50%	58	72%
46	101646	PUSHKARNA HIMANSHU	0	0%	5	100%	10	50%	10	100%	0	0%	4	80%	2	20%	0	0%	3	60%	5	100%	5	100%	10	100%	5	100%	3	20%	1	20%	15	75%	2	20%	7	70%	14	70%		0%	55	69%
47	101647	REDDY C SAI V.	3	60%	5	100%	10	50%	10	100%	0	0%	4	80%	5	50%	0	0%	3	60%	5	100%	5	100%	0	0%	5	100%	1	7%	5	100%	16	80%	3	30%	9	90%	15	75%		0%	59	74%
48	101648	ROSELYN LORSON	0	0%	0	0%	0	0%	8	80%	0	0%	5	100%		0%	0	0%	4	80%	3	60%	5	100%	9	90%	5	100%	0	0%	4	80%	0	0%		0%	4	40%	0	0%		0%	43	54%

49	101649	SHETTY SHUBHAM	4	80%	5	100%	0	0%		0%	0	0%	5	100%	5	50%	0	0%	0	0%		0%	0	0%	0	0%		0%	5	33%	1	20%	0	0%	4	40%	8	80%	0	0%		0%	55	69%
50	101650	SHINDE ANKITA VIJAY	1	20%	5	100%	14	70%	10	100%	5	50%	5	100%	10	100%	10	100%	5	100%	5	100%	5	100%	0	0%	5	100%	9	60%	5	100%	14	70%	7	70%	10	100%	15	75%	9	90%	69	86%
51	101651	SHINDE SHANTANU S	0	0%	4	80%	10	50%	10	100%	0	0%	5	100%		0%	7	70%	2	40%	5	100%	0	0%	0	0%		0%	5	33%	2	40%	15	75%	8	80%	9	90%	15	75%		0%	67	84%
52	101652	SHINGATE KRANTI BHAU	4	80%	5	100%	16	80%	10	100%	4	40%	5	100%	7	70%	10	100%	3	60%	5	100%	0	0%	9	90%		0%	3	20%	2	40%	17	85%	9	90%	10	100%	12	60%	4	40%	63	79%
53	101653	SINGH SIDDARTH SATBIR	0	0%	3	60%	18	90%	5	50%	4	40%	4	80%		0%	10	100%	2	40%	2	40%	0	0%	9	90%		0%	0	0%	0	0%	18	90%	4	40%	6	60%	11	55%		0%	39	49%
54	101654	SOHI YASHVEER SINGH	0	0%	5	100%	18	90%	10	100%	2	20%	5	100%	6	60%	0	0%	4	80%	4	80%	3	60%	0	0%	3	60%	1	7%	5	100%	18	90%	2	20%	9	90%	10	50%		0%	65	81%
55	101655	SRIVASTAVA ANIMESH N	3	60%	5	100%	14	70%	10	100%	0	0%	5	100%	5	50%	6	60%	4	80%	5	100%	5	100%	10	100%	5	100%	0	0%	5	100%	15	75%	8	80%	5	50%	14	70%	8	80%	60	75%
56	101656	TANYA SERAH JACOB	4	80%	5	100%	14	70%	10	100%	4	40%	5	100%		0%	4	40%	4	80%	5	100%	5	100%	8	80%	5	100%	3	20%	3	60%	14	70%	2	20%	6	60%	7	35%		0%	58	72%
57	101657	TELANG SHRUTI VIKAS	4	80%	5	100%	12	60%	9	90%	5	50%	5	100%	9	90%	10	100%	4	80%	5	100%	5	100%	0	0%	5	100%	7	47%	5	100%	8	40%	6	60%	6	60%	11	55%	6	60%	62	77%
58	101658	TIWARI DIPAK KAMLESH	0	0%	4	80%	10	50%	7	70%	9	90%	4	80%	5	50%	6	60%	2	40%	5	100%	5	100%	10	100%	5	100%	0	0%	5	100%	14	70%	9	90%	0	0%	12	60%		0%	56	70%
59	101659	VARGHESE JACOB	3	60%	5	100%	14	70%	10	100%	3	30%	4	80%	9	90%	4	40%	2	40%	5	100%	5	100%	10	100%	5	100%	1	7%	3	60%	13	65%	10	100%	9	90%	13	65%		0%	50	62%
60	101660	VELLIKKARA HARUN JOE	4	80%	4	80%	4	20%	7	70%	2	20%	4	80%	9	90%	3	30%	3	60%	5	100%	5	100%	10	100%	5	100%	8	53%	5	100%	17	85%		0%	9	90%	13	65%	8	80%	65	81%
61	101661	VERMA PRAGYA SURENDRA	0	0%	5	100%	8	40%	9	90%	10	100%	5	100%		0%	10	100%	5	100%	5	100%	0	0%	0	0%		0%	4	27%	1	20%	18	90%	6	60%	9	90%	4	20%	5	50%	64	80%
62	101662	WAGHMARE ASHRIEL S.	3	60%	5	100%	20	100%	10	100%	5	50%	5	100%	10	100%	5	50%	3	60%	5	100%	5	100%	9	90%	5	100%	2	13%	5	100%	10	50%	10	100%	9	90%	8	40%		0%	68	85%
63	101663	WAGHULADE MITHILESH	4	80%	5	100%	0	0%	6	60%	0	0%	0	0%		0%	0	0%	2	40%	5	100%	0	0%	0	0%		0%	9	60%	1	20%	0	0%	2	20%	4	40%	0	0%		0%	34	42%
64	101665	JADHAV AMEY	3	60%	5	100%	0	0%	9	90%	0	0%	5	100%		0%	0	0%	4	80%	4	80%	5	100%	0	0%	5	100%	5	33%	5	100%	0	0%	4	40%	9	90%	0	0%		0%	62	77%
65	101667	DIAS YOHANN	3	60%	5	100%	7	35%	6	60%	0	0%	2	40%	2	20%	3	30%	1	20%	5	100%	5	100%	9	90%	5	100%	5	33%	3	60%	14	70%	4	40%	6	60%	13	65%		0%	40	50%
66	101668	GAIKWAD ANKESH	3	60%	5	100%	6	30%	5	50%	5	50%	5	100%	9	90%	10	100%	3	60%	5	100%	5	100%	6	60%	5	100%	4	27%	5	100%	16	80%	6	60%	7	70%	3	15%	6	60%	72	90%
67	101669	JAGDALE KOMAL	3	60%	5	100%	6	30%	10	100%	5	50%	5	100%	10	100%	5	50%	4	80%	5	100%	5	100%	9	90%	5	100%	9	60%	1	20%	16	80%	7	70%	6	60%	14	70%		0%	68	85%
68	101670	MONTERIO SWAPNIL	3	60%	5	100%	12	60%	10	100%	5	50%	5	100%	5	50%	6	60%	1	20%		0%	2	40%	5	50%	2	40%	3	20%	1	20%	11	55%	4	40%	7	70%	11	55%		0%	51	64%

69	101671	PHADKE ATHARVA	4	80%	5	100%	8	40%	10	100%	0	0%	3	60%		0%	7	70%	3	60%	5	100%	5	100%	3	30%	5	100%	6	40%	1	20%	10	50%	3	30%	6	60%	10	50%		0%	51	64%
70	101674	SANDBHOR ANIKET	0	0%	5	100%	6	30%	10	100%	0	0%	4	80%		0%	10	100%	5	100%	4	80%	5	100%	4	40%	5	100%	0	0%	5	100%	13	65%	2	20%	7	70%	14	70%		0%	63	79%
71	101675	SHAIKH SABIYA	3	60%	5	100%	14	70%	6	60%	2	20%	5	100%		0%	2	20%	2	40%	5	100%	3	60%	9	90%	3	60%	7	47%	1	20%	14	70%		0%	7	70%	11	55%		0%	47	59%
72	101676	TALWAR PRACHI	4	80%	5	100%	0	0%	10	100%	0	0%	4	80%	10	100%	0	0%	2	40%	5	100%	5	100%	10	100%	5	100%	5	33%	5	100%	0	0%		0%	2	20%	0	0%		0%	57	71%
73	101678	ZAWARE JAYESH	4	80%	5	100%	16	80%	10	100%	5	50%	5	100%	10	100%	4	40%	3	60%	5	100%	0	0%	0	0%		0%	2	13%	4	80%	14	70%	4	40%	3	30%	16	80%		0%	45	56%
74	101520	KADAM RIGVED	3	60%	5	100%	6	30%		0%	1	10%	4	80%		0%	4	40%	1	20%		0%	0	0%	7	70%		0%	6	40%	0	0%	7	35%		0%	2	20%	10	50%		0%	44	55%
Total Student Present in semester 6			Course Outcome '1'								Course Outcome '2'						Course Outcome '3'						Course Outcome '4'						Course Outcome '5'								Course Outcome '6'						Tool1	
			Demonstrate the concept of various system programs.								Illustrate the various data structures and passes of assembler design.						Demonstrate different features and designing of macros.						Demonstrate the concept of loaders and linkers.						Illustrate and design analysis phase of a compiler for subset of C language								Apply code optimization techniques to illustrate synthesis phase of compiler.						End Semester Exam	
			Assignment Test-1		Internal Assessment-1		MCQ-1		Prelim Exam		Assignment Test-2		Internal Assessment-2		Prelim Exam		Assignment Test-2		Internal Assessment-2		Prelim Exam		Class Test-1		MCQ-4		Prelim Exam		Assignment Test-1		Internal Assessment-1		MCQ-2		Prelim Exam		Internal Assessment-1		MCQ-3		Prelim Exam			
			Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal	Total Students achieved Goal	% of Students achieved Goal
74			49	66%	73	99%	49	66%	63/65	97%	32	43%	66	89%	44/50	88%	46	62%	49	66%	61/64	95%	47	64%	51	69%	47/54	87%	19	26%	53	72%	60	81%	30/60	50%	63	85%	53	72%	20/26	77%	69	93%

Course exit survey:

Students give course exit survey for each course through student portal which is integrated to APMS portal. Summary of course exit survey is as follows;

First Half of 2019

Semester VI

Summary Sheet of subject System Programming & Complier Construction

CO-Question No	Course Outcome Question	Rating Percentage										Average Percentage	CO-Question Attainment
		No of students rated '5'	% of students	No of students rated '4'	% of students	No of students rated '3'	% of students	No of students rated '2'	% of students	No of students rated '1'	% of students		
		Total number of students given Course Exit Survey							'74'				
1	Rate your understanding of the concept of various system programs.	23	31%	28	38%	22	30%	0	0%	1	1%	79%	3
2	Rate your understanding of the various data structures and passes of assembler design.	22	30%	29	39%	22	30%	1	1%	0	0%	79%	3
3	Rate your understanding of different features and designing of macros.	25	34%	24	32%	23	31%	1	1%	1	1%	79%	3
4	Rate your understanding of loaders and linkers and their contribution in developing efficient user applications.	21	28%	23	31%	27	36%	1	1%	2	3%	76%	3
5	Rate your understanding of analysis phase of a compiler to generate lexemes and design various parsers for any programming language.	23	31%	27	36%	21	28%	2	3%	1	1%	79%	3
6	Rate your understanding of synthesis phase by applying code optimization techniques to produce optimized object code in terms of high execution speed and less memory usage	18	24%	32	43%	23	31%	1	1%	0	0%	78%	3

d. Attainment calculations

Based on the weightages mentioned, calculations are made by the APMS software.

First Half of 2019

Semester VI

Attainment Summary of subject System Programming & Complier Construction

Name of Staff:- Kavita

Goal Set

% of Marks	% of Student	Level of Attainment
50	51	1
50	56	2
50	61	3

CO-ID	Course Outcome	Internal Assessment							External Assessment		Final Attainment Level
		Direct Assessment				Indirect Assessment	Internal Attainment Percentage	Internal Attainment Level	External Attainment Percentage	External Attainment Level	
		Tool1	Tool2	Tool3	Prelim/Home Assignment	Course Exit Survey					
		80% Weigtage				20% Weigtage					
		60% Weigtage							40% Weigtage		
CPC602.1	Demonstrate the concept of various system programs.	*Assignment Test-1*	*Internal Assessment-1*	*MCQ-1*	96.92%	79.46%	87.64	3	93.24%	3	3
		66.22%	98.65%	66.22%							
CPC602.2	Illustrate the various data structures and passes of assembler design.	*Assignment Test-2*	*Internal Assessment-2*	---	88%	79.46%	77.58	3	93.24%	3	3
		43.24%	89.19%	---							
CPC602.3	Demonstrate different features and designing of macros.	*Assignment Test-2*	*Internal Assessment-2*	---	95.31%	79.19%	79.64	3	93.24%	3	3
		62.16%	66.22%	---							
CPC602.4	Demonstrate the concept of loaders and linkers.	*Class Test-1*	*MCQ-4*	---	87.04%	76.22%	76.55	3	93.24%	3	3
		63.51%	68.92%	---							
CPC602.5	Illustrate and design analysis phase of a compiler for subset of C language	*Assignment Test-1*	*Internal Assessment-1*	*MCQ-2*	50%	78.65%	66.27	3	93.24%	3	3
		25.68%	71.62%	81.08%							
CPC602.6	Apply code optimization techniques to illustrate synthesis phase of compiler.	*Internal Assessment-1*	*MCQ-3*	---	76.92%	78.11%	77.74	3	93.24%	3	3
		85.14%	71.62%	---							

PO & PSO Attainment of FH-2019

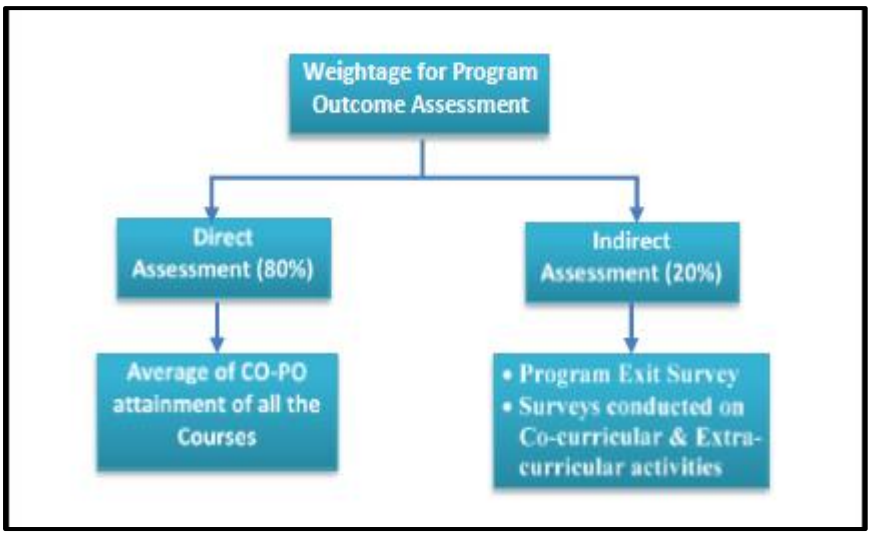
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CPC602.1	3	--	--	--	--	--	--	--	--	--	--	3	--	--
CPC602.2	3	3	--	--	--	--	--	--	--	--	--	--	--	--
CPC602.3	3	3	--	--	--	--	--	--	--	--	--	--	3	--
CPC602.4	3	3	--	--	--	--	--	--	--	--	--	--	3	--
CPC602.5	3	3	3	--	--	--	--	--	--	--	--	3	3	3
CPC602.6	3	3	3	--	--	--	--	--	--	--	--	3	3	3
Average	**3**	**3**	**3**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**3**	**3**	**3**

The average attainment cell for every course is considered in PO attainment.

Attainment of Program Outcomes and Program Specific Outcomes

Attainment of POs and PSOs:

Attainment of each of the Program outcomes are measured by considering **direct assessment** (i.e. Outcome Attainment of all Courses) and **indirect assessment** (i.e. Program Exit survey and Extra-Curricular Activities Survey). **80% weightage** is given for **Direct** Assessment and **20% weightage** is given for **indirect** assessment. In indirect assessment equal weightage is given to Program Exit survey and Extra-Curricular Activities. Weightage for PO attainment calculation is shown in figure



PO attainment along with weightage given to each method.

- **Direct Assessment:**

Attainment of Course Outcome is directly considered in the PO attainment reference cell where the CO-PO mapping was done earlier

- **Indirect Assessment:**

Program Exit Survey and Feedback on extra-curricular activities are considered as tools for indirect assessment. Program exit survey is collected from final year students and feedback on extra-curricular activities is collected from students of all the semesters. A sample copy of program exit survey and feedback on extra-curricular activities are shown in figure

Program Exit Survey

Computer Engineering Department
Program Exit Survey for year 2018-2019

Total number of students given feedback :- 71

Question Number	Question	Program Outcome	Rating Percentage										Average Percentage
			No of students rated '5'	% of students	No of students rated '4'	% of students	No of students rated '3'	% of students	No of students rated '2'	% of students	No of students rated '1'	% of students	
1	The knowledge of computing, mathematics, science and engineering fundamentals studied in the program is adequate to solve the complex engineering problem	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems	28	39%	28	39%	9	13%	2	3%	3	4%	81%
2	The program is effective in developing analytic and problem solving skills.	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.	27	38%	28	39%	12	17%	2	3%	2	3%	81%
3	The program is effective to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.	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.	27	38%	29	41%	10	14%	2	3%	2	3%	81%
4	The program is effective in developing planning abilities along with conducting investigations.	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.	29	41%	28	39%	11	15%	1	1%	2	3%	83%

5	The Program is effective in creating, selecting, and applying appropriate techniques, resources, and modern engineering and software tools.	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.	25	35%	29	41%	14	20%	0	0%	2	3%	80%
6	The contextual knowledge gained through the program is adequate to understand the professional, ethical, and social responsibilities.	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.	27	38%	25	35%	15	21%	2	3%	2	3%	81%
7	The technical knowledge acquired through the program is sufficient to acquire new techniques to remain effective in the carrier as per societal and environmental contexts.	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.	24	34%	28	39%	15	21%	2	3%	2	3%	80%
8	The program provides the adequate knowledge about professional and ethical responsibility.	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.	27	38%	27	38%	14	20%	0	0%	2	3%	81%
9	The program is effective in enhancing individual and team-working abilities.	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.	26	37%	26	37%	15	21%	1	1%	2	3%	80%
10	The program is effective in developing written and oral communication skills.	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.	28	39%	27	38%	11	15%	2	3%	2	3%	81%

Feedback on Co-curricular and Extra-curricular Activities

Computer Engineering Department

Feedback Summary of Co-curricular and Extra-curricular Activities for year 2018-2019

Total number of students given feedback :- 271

Question Number	Question	No of students given feedback	Rating Percentage										Average Percentage
			No of students rated '5'	% of students	No of students rated '4'	% of students	No of students rated '3'	% of students	No of students rated '2'	% of students	No of students rated '1'	% of students	
PO8													
1	Are the events planned by taking feedback from students?	271	81	30%	80	30%	64	24%	23	8%	23	8%	73%
2	Is the student council committee is formed in transparent manner?	266	76	29%	73	27%	63	24%	21	8%	33	12%	70%
3	Is attending assembly playing a role in imbibing punctuality and discipline.	267	75	28%	76	28%	53	20%	18	7%	45	17%	69%
4	Are the criteria for the event execution clearly specified and followed?	263	80	30%	76	29%	67	25%	20	8%	20	8%	73%
Average Percentage			*71%*										
PO9													
5	Rate your capability to lead a team.	267	90	34%	103	39%	61	23%	8	3%	5	2%	80%
6	Rate your capability to work in a team.	264	124	47%	96	36%	33	13%	4	2%	7	3%	85%
7	Rate your capability to work as an individual.	264	118	45%	99	38%	37	14%	5	2%	5	2%	84%
Average Percentage			*83%*										

PO10													
8	Are you getting clear instruction about the event.	37	16	43%	14	38%	2	5%	1	3%	4	11%	80%
9	As an event head/student council are you able to provide clear instruction.	35	19	54%	12	34%	1	3%	2	6%	1	3%	86%
Average Percentage				*83%*									
PO11													
10	Your capability in identifying and planning event	44	19	43%	20	45%	3	7%	1	2%	1	2%	85%
11	Your capability in preparing budget.	43	18	42%	16	37%	7	16%	0	0%	2	5%	82%
12	Your capability in scheduling and execution	44	22	50%	15	34%	4	9%	1	2%	2	5%	85%
Average Percentage				*84%*									
PO12													
13	Your comfort in handling the situation.	58	15	26%	22	38%	17	29%	3	5%	1	2%	76%
14	Your satisfaction level in providing the solution.	56	19	34%	20	36%	15	27%	1	2%	1	2%	80%
15	Rate that situation helped you for self-learning which leads to lifelong learning?	56	24	43%	26	46%	4	7%	1	2%	1	2%	85%
16	How do you rate your confidence level to provide solutions compare to entry level at college?	55	24	44%	18	33%	10	18%	1	2%	2	4%	82%
Average Percentage				*81%*									

PO Attainment of Academic Year of 2018-2019 (computer Engineering Dept.)

Subject Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
FEC101	APPLIED MATHEMATICS-I	3	3	--	--	3	--	--	--	--	--	--	--
FEC102	APPLIED PHYSICS-I	3	3	--	3	--	3	3	--	--	--	--	3
FEC103	APPLIED CHEMISTRY -I	3	--	--	--	--	3	3	--	--	--	--	3
FEC104	ENGINEERING MECHANICS	3	3	--	--	--	--	--	--	--	--	--	3
FEC105	BASIC ELECTRICAL ENGINEERING	2.6	2.6	--	2.6	--	--	--	--	2.6	--	--	--
FEC106	ENVIRONMENTAL STUDIES	3	--	--	--	--	3	3	3	--	--	--	3
FEC201	APPLIED MATHEMATICS-II	2.2	2.2	--	--	2.2	--	--	--	--	--	--	--
FEC202	APPLIED PHYSICS-II	2.5	2.3	--	--	--	3	--	--	--	--	--	--
FEC203	APPLIED CHEMISTRY-II	2.7	--	2.7	3	--	2.4	2.7	3	--	3	--	2.4
FEC204	ENGINEERING DRAWING	2.2	2.2	--	--	2.2	--	--	--	--	--	--	2.2
FEC205	STRUCTURED PROGRAMMING APPROACH	3	3	3	--	--	--	--	--	--	--	--	--
FEC206	COMMUNICATION SKILLS	--	--	--	--	2.3	2.6	--	--	2.6	2.4	2	2.3
CSC301	APPLIED MATHEMATICS -III	3	3	--	--	--	--	--	--	--	--	--	--
CSC302	DIGITAL LOGIC DESIGN AND ANALYSIS	2.6	2.7	3	--	--	--	--	--	--	--	--	2.7
CSC303	DISCRETE STRUCTURES	2.9	2.9	--	--	--	--	--	--	--	--	--	3
CSC304	ELECTRONIC CIRCUITS AND COMMUNICATION FUNDAMENTALS	1.4	1	--	--	--	--	--	--	--	--	--	--
CSC305	DATA STRUCTURES	3	3	--	3	--	--	--	--	--	--	--	3

CSL301	DIGITAL SYSTEM LAB	--	--	--	3	3	--	--	--	--	--	--	3
CSL302	BASIC ELECTRONICS LAB	2.2	2.2	--	--	--	--	--	--	--	--	--	--
CSL303	DATA STRUCTURE LAB	3	3	--	3	--	--	--	--	--	--	--	3
CSL304	OOPM(JAVA) LAB -	3	3	3	3	3	--	--	--	--	--	--	3
CSC401	APPLIED MATHEMATICS-IV	2.3	2.3	--	--	--	--	--	--	--	--	--	--
CSC402	ANALYSIS OF ALGORITHMS	3	3	--	--	--	--	--	--	--	--	--	3
CSC403	COMPUTER ORGANIZATION AND ARCHITECTURE	2.1	2.1	--	--	--	--	--	--	--	--	--	2.2
CSC404	COMPUTER GRAPHICS	2	2	--	2	--	--	--	--	--	--	--	2
CSC405	OPERATING SYSTEM	3	3	--	3	--	--	--	--	--	--	--	3
CSL401	ANALYSIS OF ALGORITHMS LAB	--	--	--	2.6	2.6	--	--	--	--	--	--	2.6
CSL402	COMPUTER GRAPHICS LAB	3	3	3	3	3	--	--	3	3	3	3	3
CSL403	PROCESSOR ARCHITECTURE LAB	2.2	2.2	2.2	2.2	2.2	--	--	--	--	--	--	--
CSL404	OPERATING SYSTEM LAB	--	--	2.6	2.6	2.6	--	--	--	--	--	--	2.6
CSL405	OPEN SOURCE TECH(PYTHON & PERL) LAB	--	3	--	--	3	--	--	--	3	--	--	--
CSC501	MICROPROCESSOR	2.4	2.3	2.1	1.8	--	--	--	--	--	--	--	2.8
CSC502	DATABASE MANAGEMENT SYSTEM	3	3	3	--	--	--	--	--	--	--	--	3
CSC503	COMPUTER NETWORK	2.6	2.6	2.6	--	--	--	--	--	--	--	--	2.6
CSC504	THEORY OF COMPUTER SCIENCE	2.8	2.8	2.6	3	--	--	--	--	--	--	--	2.8
CSDLO5013	ADVANCE ALGORITHM	2.4	2.3	1.8	3	--	--	--	--	--	--	--	2.4

CSL501	MICROPROCESSOR LAB	2.6	2.6	2.6	2.6	2.6	--	--	--	--	--	--	--
CSL502	COMPUTER NETWORK LAB	3	3	3	3	3	--	--	3	--	--	--	3
CSL503	DATABASE & INFO. SYSTEM LAB	3	3	3	3	3	3	--	3	3	3	--	3
CSL504	WEB DESIGN LAB	1.4	1.4	2.1	1.4	2.1	1.4	1.4	1.4	1.4	1.4	1.4	2
CSL505	BUSINESS COMM. & ETHICS	--	--	--	--	--	3	--	3	3	3	3	3
CSC601	SOFTWARE ENGINEERING	2.6	2.6	2.4	3	--	3	3	3	--	--	1.8	2.6
CSC602	SYSTEM PROGRAMMING & COMPLIER CONSTRUCTION	3	3	3	--	--	--	--	--	--	--	--	3
CSC603	DATA WAREHOUSING & MINING(VI)	2.2	2.2	2.2	2.2	--	--	--	--	--	--	--	2.2
CSC604	CRYPTOGRAPHY & SYSTEM SECURITY	3	3	--	--	--	--	--	3	--	--	--	3
CSDLO6021	MACHINE LEARNING	3	3	3	3	--	--	--	--	--	--	--	3
CSDLO6023	ENTERPRISE RESOURCE PLANNING	2.2	2.2	2.2	2.2	2.2	--	--	2.2	--	2.2	--	2.2
CSL601	SOFTWARE ENGINEERING LAB	--	1.6	1.3	1	1.2	2.2	1	2.2	2.2	1.9	1.6	1
CSL602	SYSTEM SOFTWARE LAB	2.2	1.8	--	--	1.8	--	--	--	--	--	--	2.2
CSL603	DATA WAREHOUSING & MINING LAB	--	2.2	2.2	2.2	2.2	--	--	--	--	--	--	--
CSL604	SYSTEM SECURITY LAB	--	3	--	3	3	--	--	--	--	--	--	3
CSP605	MINI-PROJECT	3	3	3	3	3	3	3	3	3	3	3	3
CPC701	DIGITAL SIGNAL PROCESING	3	3	--	--	--	--	--	--	--	--	--	3
CPC702	CRYPTOGRAPHY AND SYSTEM SECURITY	3	3	3	3	3	3	3	3	--	--	--	3
CPC703	ARTIFICIAL INTELLIGENCE	2.1	2	2	1.8	1.8	2.4	2.4	--	--	--	--	1.8

CPE70425	SOFT COMPUTING	3	3	3	3	3	--	--	--	--	--	--	3
CPE70426	ENTERPRISE RESOURCE PLANNING & SUPPLY CHAIN MANAGEMENT	3	3	3	3	3	--	--	--	--	3	--	3
CPP701	PROJECT I	--	3	--	3	3	--	3	--	--	--	--	--
CPL701	NETWORK THREATS AND ATTACKS LABORATORY	--	2.9	--	2.9	2.9	--	--	2.9	--	--	--	2.9
CPC801	DATA WAREHOUSE AND MINING	3	3	3	3	3	--	--	--	--	--	--	3
CPC802	HUMAN MACHINE INTERACTION	2.4	2.2	2.2	2	2.4	3	--	--	--	--	--	2.2
CPC803	PARALLEL AND DISTRIBUTED SYSTEMS	3	3	3	3	3	--	--	--	--	--	3	3
CPE8031	MACHINE LEARNING	1	1.5	1.8	1.5	1.6	--	--	--	--	--	--	1.4
CPE8035	BIG DATA ANALYTICS	2.2	2.2	2.2	--	2.2	--	--	--	2.2	--	--	2.2
CPP802	PROJECT II	--	--	--	--	--	--	3	3	3	3	3	3
CPL801	CLOUD COMPUTING LABORATORY	3	3	3	2.1	2.3	3	--	3	3	3	--	2.5
Direct Attainment (80%)		**2.6**	**2.6**	**2.5**	**2.6**	**2.5**	**2.8**	**2.7**	**2.9**	**2.8**	**2.6**	**2.5**	**2.7**
Indirect Attainment (20%)	**Program Exit Survey (50%)**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
	Extra-Curricular Activities (50%)	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**3**	**3**	**3**	**3**	**3**
Average Attainment		**2.68**	**2.68**	**2.6**	**2.68**	**2.6**	**2.84**	**2.76**	**2.92**	**2.84**	**2.68**	**2.6**	**2.76**

PSO Attainment of Academic Year of 2018-2019 (computer Engineering Dept.)

Subject Code	Subject Name	PSO1	PSO2
FEC101	APPLIED MATHEMATICS-I	3	--
FEC102	APPLIED PHYSICS-I	3	--
FEC103	APPLIED CHEMISTRY -I	3	--
FEC104	ENGINEERING MECHANICS	3	--
FEC105	BASIC ELECTRICAL ENGINEERING	2.5	--
FEC106	ENVIRONMENTAL STUDIES	3	--
FEC201	APPLIED MATHEMATICS-II	2.9	--
FEC202	APPLIED PHYSICS-II	3	--
FEC203	APPLIED CHEMISTRY-II	2.8	--
FEC204	ENGINEERING DRAWING	3	--
FEC205	STRUCTURED PROGRAMMING APPROACH	3	3
FEC206	COMMUNICATION SKILLS	--	3
CSC301	APPLIED MATHEMATICS -III	3	--
CSC302	DIGITAL LOGIC DESIGN AND ANALYSIS	3	3
CSC303	DISCRETE STRUCTURES	3	--
CSC304	ELECTRONIC CIRCUITS AND COMMUNICATION FUNDAMENTALS	--	2.6
CSC305	DATA STRUCTURES	2.7	2.7
CSL301	DIGITAL SYSTEM LAB	3	3
CSL302	BASIC ELECTRONICS LAB	--	2.2
CSL303	DATA STRUCTURE LAB	2.2	2.2
CSL304	OOPM(JAVA) LAB -	2.6	2.6
CSC401	APPLIED MATHEMATICS-IV	2.2	--
CSC402	ANALYSIS OF ALGORITHMS	3	3
CSC403	COMPUTER ORGANIZATION AND ARCHITECTURE	2	--
CSC404	COMPUTER GRAPHICS	3	3
CSC405	OPERATING SYSTEM	1.8	1.8
CSL401	ANALYSIS OF ALGORITHMS LAB	3	3
CSL402	COMPUTER GRAPHICS LAB	3	3
CSL403	PROCESSOR ARCHITECTURE LAB	2.6	--
CSL404	OPERATING SYSTEM LAB	2.6	2.6
CSL405	OPEN SOURCE TECH(PYTHON & PERL) LAB	2.2	2.2
CPC501	MICROPROCESSOR	--	1.6
CPC502	OPERATING SYSTEMS	2.4	2.6
CPC503	STRUCTURED AND OBJECT ORIENTED ANALYSIS AND DESIGN	3	3
CPC504	COMPUTER NETWORKS	3	3
CPL501	WEB TECHNOLOGIES LABORATORY	2.8	1.8
CPL502	BUSINESS COMMUNICATION AND ETHICS	3	3
CPC601	SYSTEM PROGRAMMING AND COMPILER CONSTRUCTION	2.9	2.9
CPC602	SOFTWARE ENGINEERING	--	3

CPC603	DISTRIBUTED DATABASES	2	2
CPC604	MOBILE COMMUNICATION AND COMPUTING	3	3
CPE6011	SOFTWARE PROJECT MANAGEMENT	--	3
CPL601	NETWORK PROGRAMMING LABORATORY	2.8	2.7
CPC701	DIGITAL SIGNAL PROCESING	3	--
CPC702	CRYPTOGRAPHY AND SYSTEM SECURITY	2.2	2.2
CPC703	ARTIFICIAL INTELLIGENCE	2.1	2.1
CPE70425	SOFT COMPUTING	3	3
CPE70426	ENTERPRISE RESOURCE PLANNING & SUPPLY CHAIN MANAGEMENT	3	3
CPP701	PROJECT I	2.7	2.7
CPL701	NETWORK THREATS AND ATTACKS LABORATORY	2.8	2.8
CPC801	DATA WAREHOUSE AND MINING	2.9	3
CPC802	HUMAN MACHINE INTERACTION	3	3
CPC803	PARALLEL AND DISTRIBUTED SYSTEMS	2.2	2.2
CPE8031	MACHINE LEARNING	2.2	2.3
CPE8035	BIG DATA ANALYTICS	2.2	2.2
CPP802	PROJECT II	2.7	2.7
CPL801	CLOUD COMPUTING LABORATORY	3	3
Average		**2.7**	**2.7**