









### **Attainment of Course Outcomes**

In the Outcome Based Education (OBE), assessment is done through one or more than one processes, carried out by the department, that identify, collect, and prepare data to evaluate the achievement of course outcomes (CO's).

The process for finding the attainment of Course outcomes uses various tools/methods. These methods are classified into two types: **Direct methods and indirect methods.** 

• Direct methods display the student's knowledge and skills from their performance in the class/assignment test, internal assessment tests, assignments, semester examinations, seminars, laboratory assignments/practicals, mini projects etc. These methods provide a sampling of what students know and/or can do and provide strong evidence of student learning.

• Indirect methods such as course exit survey and examiner feedback to reflect on student's learning. They are used to assess opinions or thoughts about the graduate's knowledge or skills.

Rubrics are used for both formative and summative assessment of students. Same rubric is used for assessing an outcome so that the faculty is able to assess student progress and maintain the record of the same for each student. The rubrics are shared with students before being evaluated so that they are aware of the performance criteria and their weightage.

Following tables show the various methods used in assessment process that periodically documents and demonstrates the degree to which the Course Outcomes are attained. They include information on:

a) Listing and description of the assessment processes used to gather the data, and

b) The frequency with which these assessment processes are carried out.



# Table 1 : Direct Assessment tool used for CO attainment

Sr. No.	Direct Assessment Method	Assessment frequency	Description
1.	Internal Assessment Test	Twice in a Semester	The Internal Assessment marks in a theory paper shall be based on two tests generally conducted at the end of 6 <sup>th</sup> and 11 <sup>th</sup> weeks of each semester. It is a metric used to continuously assess the attainment of course outcomes w.r.t course objectives. Average marks of two tests shall be the Internal Assessment Marks for the relevant course.
2.	Lab Assignments / experiments	Once in a week	Lab Assignment/Experiment is a qualitative performance assessment tool designed to assess students' practical knowledge and problem solving skills. Minimum ten experiments need to be conducted for every lab course.
3	End Semester Examination Practical Semester Examination	Once in a Semester	End Semester examination (theory or practical) are the metric to assess whether all the course outcomes are attained or not framed by the course incharge. End Semester Examination is more focused on attainment of all course outcomes and uses a descriptive questions.
5	Home Assignments	Twice in a Semester	Assignment is a metric used to assess student's analytical and problem solving abilities. Every student is assigned with course related tasks & assessment will be done based on their performance. Grades are assigned depending on their innovation in solving/deriving the problems.



6	Class /	Twice in a	It is a metric used to continuously assess the
0		I WICE III a	
	Assignment	Semester	student's understanding capabilities.
	Test		
7	Preliminary	Once in a	Preliminary examination is the metric to assess
	Examination	semester	whether all the course outcomes are attained or not
			by asking descriptive questions.
8	Presentations	As per the	Presentation is the metric used to assess student's
		requirement	communication and presentation skills along with
			depth of the subject knowledge. Seminars topics are
			given to the students that cover topics of current
			interest or provide in-depth coverage of selected
			topics from the core courses.

# Table 2: Indirect Assessment tool used for CO attainment

Sr.	Indirect	Assessment	Method Description
No.	Assessment	frequency	
	Method		
1	Course Exit Survey	End of Semester	Collect variety of information about course outcomes from the students after learning entire
			course.

The weightages given for various assessment tools used for the attainment of Course Outcomes are shown in the following figure 1 and table 3







			Tools	Frequency		Weighta	age
			Assignment tests	Twice in a semester			
			assessment	semester			
Assessment	Divert	Internal	Home	Selected	80		
Tools	Direct	Tools	Assignments	Торіс	%	60%	80%
			Practical	Weekly			
			MOCK Practicals				
				Once in a			
			мсо	semester			
			Seminar/Present				
			ations				

#### Table 3: List of Course Assessment tools



		Mini Projects Preliminary	Once in a	20		
		Examination	semester	%		
	External Tools	End Semester Examination	Once in a semester		40%	
Indirect		Course Exit Survey/ Examiners feedback	Once in a Sem	ester		20%

# Process to set Goal for course (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.



### (Eg: Course Name: CSC305 Year of study 2017-2018)

	SH-			AVG of SH-
YEAR	2012(OL	SH-2013	SH-2014	2012,SH-
	D)			2013,SH-2014
Total Students	73	75	75	74
Total Marks	3133	3649	2676	3153
Class Average Marks (Total Marks/Total Students)	43	49	36	42
% Class Average Marks	54	61	45	53
Number of students achieved the Average Marks	48	50	49	38
% of the Number of students achieved the Average Marks	64	66	65	65

Goal Set for DS (III SEM)							
% of the student	% of marks	Level					
60%	53%	3					
65%	53%	2					
70%	53%	1					

### Change of goal setting:

The Set level will be changed if all Course Outcomes of the subject are attained the Level-3. This change in the goal can be done in two ways, either increase the average marks obtained by the students or increase the percentage of students securing more than the average marks. Since we have to bring maximum students to level-3 category, the change of average marks will set only after 90% students securing more than previous average marks. Once it is achieved increase the goal set by 2 - 5%



# Course Outcomes

CO-ID	CO-Statement
C305.1	Demonstrate the concept of linear, nonlinear data structure
C305.2	Design an algorithm to implement stack, queue data structures and apply the concept for an application
C305.3	Design an algorithm to implement linked list data structures and apply the concept for an application
C305.4	Demonstrate the concept of tree and apply to solve the problems
C305.5	Demonstrate the concept of graph and apply to solve the problems
C305.6	Design an algorithm to implement sort and search operations

# CO-PO and CO-PSO Correlation

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CSC305.1	3	2		1									3	1
CSC305.2	2	3	3	3							2	3	3	2
CSC305.3	2	2	3	3							2	3	3	2
CSC305.4	3		2	2								3	3	1
CSC305.5	3		2	2								2	3	1
CSC305.6	2	3	3								2	3	3	2
Average	3	3	3	2							2	3	3	2



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# Tools used for CO attainment

CO-ID	CO Statement	Tool1	Tool2
C305.1	Demonstrate the concept of linear, nonlinear data structure	Assignment Test-1	Internal Assessment-1
C305.2	Design an algorithm to implement stack, queue data structures and apply the concept for an application	Assignment Test-1	Internal Assessment-1
C305.3	Design an algorithm to implement linked list data structures and apply the concept for an application	Assignment-1	Internal Assessment-1
C305.4	Demonstrate the concept of tree and apply to solve the problems	Class Test-1	Internal Assessment-2
C305.5	Demonstrate the concept of graph and apply to solve the problems	Assignment Test-2	Internal Assessment-2
C305.6	Design an algorithm to implement sort and search operations	Assignment Test-2	MCQ-1

# Question Papers used as a tools

# i. Internal Assessment-1

Q.			Marks	СО
140				
	An	swer any five		
	а	Exemplify linear and non-linear Data structures	2	
1	b	Demonstrate Circular and Priority Queue.	2	
1	с.	State the difference between Singly Linked List and	2	(CO-1)
	d	Define ADT for Stack. List applications of Stack	2	. ,
	е	List out the areas in which data structures are applied	2	
	f.	Exemplify infix, postfix and prefix expression.	2	
	An	swer any one		
	а	Write a program to implement a creation of a singly		
-		i) Inserting a node at the end		
2		ii) Delete a node last node	5	(CO-3)
	b	Write a program to implement creation of a doubly		
		i) Inserting a node after a specific node		
		ii) Delete a node after a specific node		



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3	An	swer any one	-	
	а	Develop a C program for queue using array		(CO-2)
	b	Develop a program for evaluation of postfix expression		

### ii. Internal Assessment-2

Q.			Mark	СО
No			S	
	Ar	nswer any five	1	
	а	Exemplify threaded binary tree.	2	
1	b	Draw Expression tree for infix expression (a+b)*(c-d)/f	2	
-	с	Explain concept of Binary Search Tree with example	2	(CO-
	d	Compare B tree with B+ tree	2	4)
	е	Exemplify Splay tree .	2	
	f	Exemplify trie data structure	2	
	Ar	nswer any one		100
2	а	Exemplify different ways to represent graph .	5	
	b	Write the function for BFS Traversal of a graph. Explain its working with an example		5)
	Ar	nswer any one		
3	а	Apply the Huffman coding for the word MALAYALAM. Give the Huffman code for each symbol	5	(CO-
	b	Insert the following elements in AVL tree 44,17,32,78,50,88,48,62,54		

# iii. Assignment Test-1

Q. No	Set-A	Marks	СО
1	Exemplify Different types of data structure .	5	CO-1
2	Illustrate applications of stack and queue	5	
3	Write a program for circular queue using array	10	CO-2
Q. No	Set-B	Marks	СО
1	Write Stack ADT and explain various applications of stack	5	CO-1
2	Demonstrate different application areas of data structures	5	
3	Write a program for Postfix Evaluation	10	CO-2



# iv. Assignment Test-2

Q. No	Set-A	Marks	СО
1	Apply Quick Sort with following data 50,31,71,38,77,81,12,33	5	CO-6
2	Exemplify BFS.	5	CO-5
3	Apply Radix Sort on 121,70,965,432,12,577,683	5	CO-6
4	Apply Heap Sort on 15,19,10,7,17,16	5	CO-6
Q. No	Set-B	Marks	СО
1	Apply Quick Sort 30,70,20,50,40,10,60,80	5	CO-6
2	Exemplify DFS	5	CO-5
3	Apply Heap Sort on 121,70,965,432,12,577,683	5	CO-6
4	Apply Insertion on Sort 10,5,4,12,15,11,3	5	CO-6

# iv. Prelim Question Paper

Question	IS		Mark	CO						
<b>Q.1</b> a.	Exem	plify Linear and Non-linear data structures .	5	CO1						
<b>Q.1</b> b.	State list al	the difference between Singly linked list and Doubly linked ong with their application	5	CO3						
<b>Q.1</b> c.	Write	e a C program for Insertion Sort	7	CO6						
<b>Q.1</b> d.	Defin	e ADT with an example	3	CO1						
<b>Q. 2</b> a.	Const chara	Construct Huffman Tree and determine the code for following characters of word "DATASTRUCTURES" 10								
<b>Q. 2</b> b.	Write	e a C program for Postfix Evaluation	10	CO2						
<b>Q. 3</b> a.	Write	e a C program in C to implement a priority queue.	10	CO3						
<b>Q. 3</b> b.	Sort the elements using Radix Sort 121, 70, 965, 12,577,683.10What are the limitations of radix sort10									
0.4 a	Write a C program to create "Circular Linked List" ADT. The ADT should support the Following operations									
<b></b>	i) Creating a Circular Linked List									
	ii)	ii) Inserting a node after a specific node								



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	iii	deleting a node		
	iv)	Displaying list		
<b>Q. 4</b> b	Dem	10	CO5	
<b>Q. 5</b> a.	Dem AVL t	onstrate the AVL trees. Insert the following elements in a ree 27,25,23,29,35,33,34	10	CO4
<b>Q. 5</b> b.	Using Value in ea	10	CO6	
<b>Q. 6</b> a.	Exem State searc	10	CO6	
<b>Q. 6</b> b.	Write Tree.	10	CO4	

# <u>CO-Tool Marks</u>

Roll No	Name of Student	CC	D1	CC	02	C	03	C	04	CC	D5	C	D6	Com To	mon ols
		AT-1	IA-1	AT-1	IA-1	ASS-1	IA-1	CT-2	IA-2	AT-2	IA-2	AT-2	MCQ	ESE	PRELIM
I	Maximum Marks	10	10	10	5	10	5	20	10	5	5	15	5	80	80
101601	A Annie Grace C	6	7	2	1	8	5	8	10	4	5	6	5	56	56
101602	Agwekar Atharva Ajit	3	10	7	5	9	5	0	10	5	5	1	5	64	76
101603	Banagar Amruta N.	7	1	1	4	5	5	9	9	5	5	5	0	55	73
101604	Bhilegaonkar Madhavi	4	7	3	1	6	4	10	10	0	3	8	3	38	56
101605	Borhade Vipul Gulabrao	4	4	0	5	9	5	17	10	4	5	7	3	55	44
101606	Bothraa Siddhi R.	3	10	5	5	9	1	8	9	4	5	6	5	62	72
101607	Britto Cyrus Valerian	2	9	4	0	8	5	8	9	4	5	9	5	51	60
101608	Cherian Joel Mathew	5	8	0	1	9	5	9	10	0	5	0	0	54	37
101609	Clarence Johnson	4	8	2	0	8	4	8	8	5	4	1	5	51	37
101610	Dalvi Anuj Shrikrishna	3	10	5	4	9	0	0	8	5	4	1	5	45	55
101611	Dandona Raveena	7	9	6	1	8	3	19	8	1	5	1	5	43	75
101612	Deshpande Siddhesh S	2	8	5	5	0	4	10	9	2	5	1	5	52	76
101613	Dsouza Aditya Sanjay	5	10	8	5	9	3	0	10	5	5	1	5	66	42
101614	Dutta Piya	6	9	4	1	8	5	15	8	0	4	0	0	33	50
101615	Fernandez Ahan Nelson	2	10	7	5	9	3	10	8	5	5	1	5	53	48
101616	Freddy Poly	3	3 10		1	9	5	16	10	5	3	1	5	49	76
101617	Gavin Henry Lewis	2	10	7	3	8	5	9	10	5	5	1	5	62	46
101618	Jackson Jonathan Bob	2	9	3	1	9	2	8	7	1	1	1	5	20	34



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101620       Jithin K Thomas       2       6       7       1       8       0       9       8       0       2       0       0       32       56         101622       Joseph Blessingh Israel       4       8       7       3       8       4       10       9       0       5       0       0       54       66         101622       Kankariya Akash Sunil       6       3       4       4       9       4       10       5       5       1       5       58       41         101625       Kahtar Rajhankar S.       4       8       0       5       8       5       0       10       4       5       1       5       66       75         101625       Kahtar Rajhankar S.       4       8       0       5       1       10       5       1       10       5       1       10       5       1       10       5       1       10 <td< th=""><th>101619</th><th>Jadhav Tejesh Prakash</th><th>6</th><th>10</th><th>8</th><th>4</th><th>0</th><th>0</th><th>0</th><th>9</th><th>4</th><th>5</th><th>5</th><th>4</th><th>46</th><th>34</th></td<>	101619	Jadhav Tejesh Prakash	6	10	8	4	0	0	0	9	4	5	5	4	46	34
101621     Joseph Blessingh Israel     4     8     7     3     8     4     10     9     0     5     0     0     54     66       101622     Kanatt Shruti Raju     5     8     6     5     8     5     10     8     2     4     1     5     58     41       101624     Kesarwani Saumya     4     9     0     5     7     0     16     10     5     5     1     5     58     41       101624     Kesarwani Saumya     4     8     0     5     8     5     9     10     4     5     1     5     5     1     5     56     62     23       101627     Kukarni Arya Deepak     7     10     7     5     8     5     0     10     4     5     1     5     5     1     5     56     64       101620     Mathas Jovin Vincent     3     10     0     1     8     5     8     10     0     1     8     5     10     10     4     5     1     5     60     50     50     10     5     6     5     64     61     10163     Nathasardea Naumya <td< td=""><td>101620</td><td>Jithin K Thomas</td><td>2</td><td>6</td><td>7</td><td>1</td><td>8</td><td>0</td><td>9</td><td>8</td><td>0</td><td>2</td><td>0</td><td>0</td><td>32</td><td>56</td></td<>	101620	Jithin K Thomas	2	6	7	1	8	0	9	8	0	2	0	0	32	56
101622       Kanatt Shruti Raju       5       8       6       5       8       5       10       8       2       4       1       5       62       43         101623       Kankariya Akash Sunil       6       3       4       4       9       4       10       9       5       3       1       5       58       41         101624       Kesarwani Saumy       4       8       0       5       8       5       9       10       4       5       1       5       58       28         101625       Khattar Rajshankar S.       4       8       0       5       8       5       0       10       4       5       1       5       65       28       10       10       4       5       1       5       5       1       5       5       5       1       5       5       1       5       5       5       1       5       5       5       1       5       5       5       1       5       5       5       1       5       5       1       5       5       5       1       5       5       5       1       5       5       5	101621	Joseph Blessingh Israel	4	8	7	3	8	4	10	9	0	5	0	0	54	66
101623       Kankariya Akash Sunil       6       3       4       4       9       4       10       9       5       3       1       5       58       4         101624       Kesarwani Saumya       4       9       0       5       7       0       16       10       5	101622	Kanatt Shruti Raju	5	8	6	5	8	5	10	8	2	4	1	5	62	43
101624       Kesarwani Saumya       4       9       0       5       7       0       16       10       5       5       10       5       5       76         101625       Khattar Rajshankar S.       4       8       0       5       8       10       4       5       9       0       3       2       75         101626       Kochara Abishai Aswini       5       10       7       5       6       2       11       10       5       5       1       5       5       6       64         101627       Makasare Gaurav R       5       10       8       5       9       5       10       10       4       8       10       7       5       6       2       11       10       5       5       1       5       5       6       6       6         101630       Mathias Jowin Vincent       3       10       0       1       8       5       18       10       7       5       9       4       20       10       4       5       16       3       10       60       5       10       10       10       5       10       10       5       10	101623	Kankariya Akash Sunil	6	3	4	4	9	4	10	9	5	3	1	5	58	41
101625       Khattar Rajshankar S.       4       8       0       5       8       5       9       10       4       5       10       5       12       5       14       5       10       4       8       10       4       5       10       2       75          101627       Kulkarni Arya Deepak       7       10       7       5       6       2       11       10       4       5       1       5       5       15       5       5       7       5       5       10       10       4       5       1       5       5       15       5	101624	Kesarwani Saumya	4	9	0	5	7	0	16	10	5	5	1	5	57	76
101626       Kochara Abishai Aswini       5       10       5       1       0       4       8       10       4       5       9       0       32       75         101628       Makgdum Kavubh       8       10       7       5       6       7       10       0       5       5       10       10       4       5       1       5       66       7         101628       Makasare Gaurav R       5       10       8       5       8       10       7       6       8       9       0       5       1       5       5       75         101630       Mathias Sandesh Sunny       8       10       7       5       9       5       9       10       2       3       1       5       60       50         101633       Marthas Sandesh Sunny       8       3       5       9       10       2       3       1       4       5       10       10       4       1       5       10       10       4       1       5       10       10       4       5       1       1       5       6       5       6       1       5       6       1 <td< td=""><td>101625</td><td>Khattar Rajshankar S.</td><td>4</td><td>8</td><td>0</td><td>5</td><td>8</td><td>5</td><td>9</td><td>10</td><td>4</td><td>5</td><td>1</td><td>5</td><td>65</td><td>28</td></td<>	101625	Khattar Rajshankar S.	4	8	0	5	8	5	9	10	4	5	1	5	65	28
101627     Kulkarni Arya Deepak     7     10     7     5     8     5     0     10     2     5     1     5     6       101628     Magdum Kaustubh     8     10     7     5     6     2     11     10     5     5     1     5     5     75       101629     Makasare Gaurav R     3     10     0     1     8     5     8     10     5     5     1     5     5     75       101630     Mathias Jovin Vincent     3     10     7     5     9     5     9     10     2     3     1     5     56     63       101633     Maris Shruthi Viju     5     8     3     9     5     1     4     5     1     4     5     68     10     4     1     7     7     4     9     5     10     1     4     4     5     1     4     4     5     1     4     1     5     1     4     1     5     14     4     15     1     4     1     5     1     4     1     7     4     9     5     1     1     5     1     4     1     5	101626	Kochara Abishai Aswini	5	10	5	1	0	4	8	10	4	5	9	0	32	75
101628       Magdum Kaustubh       8       10       7       5       6       2       11       10       5       5       1       5       6       75         101629       Makaare Gaurav R       5       10       8       5       9       5       10       10       4       5       1       5       56       64         101630       Mathias Join Vincent       3       10       7       0       9       0       8       9       0       3       1       5       66       64         101633       Mathias Join Vincent       3       10       7       0       9       4       20       10       4       5       60       50       50       0       0       66       77         101633       Nirmy Augustine       5       10       7       4       8       5       18       9       5       5       1       4       61       59         101633       Palan Salome Nelson       5       10       7       4       1       5       5       1       4       61       59       5       1       4       61       59       1       1       5	101627	Kulkarni Arya Deepak	7	10	7	5	8	5	0	10	2	5	1	5	61	60
101629       Makasare Gaurav R       5       10       8       5       10       10       4       5       1       5       56       64         101630       Mathias Jovin Vincent       3       10       0       1       8       5       8       10       5       1       5       57       53         101631       Mathias Sandesh Sumny       8       10       7       5       9       5       9       10       2       3       1       5       60       50         101633       Nair Shruthi Viju       5       8       3       5       9       4       20       10       4       3       1       4       55       68         101635       Nirmal Babu       2       10       7       4       9       5       13       9       5       5       1       4       61       59         101638       Palain Salome Nelson       5       10       7       4       9       5       5       0       10       5       4       4       61       5       5       6       5       6       5       64       45         101639       Parab Omkar Tuislosa </td <td>101628</td> <td>Magdum Kaustubh</td> <td>8</td> <td>10</td> <td>7</td> <td>5</td> <td>6</td> <td>2</td> <td>11</td> <td>10</td> <td>5</td> <td>5</td> <td>1</td> <td>5</td> <td>65</td> <td>75</td>	101628	Magdum Kaustubh	8	10	7	5	6	2	11	10	5	5	1	5	65	75
101630       Mathias Jovin Vincent       3       10       0       1       8       5       8       10       5       5       1       5       57       53         101631       Mathias Sandesh Sunny       8       10       7       0       9       0       8       9       0       5       0       0       4       65       0       0       4       5       1       5       63       70         101633       Nair Shruthi Viju       5       8       3       5       7       5       0       10       4       5       1       5       63       70         101634       Nirmal Babu       2       100       7       5       7       5       0       10       4       4       1       5       44       14       5       5       1       4       5       55       1       4       61       59       10       10       0       1       5       54       69       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10	101629	Makasare Gaurav R	5	10	8	5	9	5	10	10	4	5	1	5	56	64
101631       Mathias Sandesh Sunny       8       10       7       0       9       0       8       9       0       5       0       0       46       65         101632       Mendes Edelquinn       4       9       7       5       9       4       20       10       4       5       1       5       63       70         101634       Nirmy Augustine       5       10       7       4       8       5       18       10       0       5       0       0       60       57         101635       Nirmal Babu       2       10       7       4       1       5       11       5       5       6       5       68       101636       Noronha Ryan Sunil       3       0       4       1       5       14       8       5       5       6       5       64       46       101639       Pathya Rajendra       4       7       7       4       1       5       14       8       5       5       6       5       64       46       101639       Patel Sruigan       7       7       4       9       5       18       9       0       5       5       1       <	101630	Mathias Jovin Vincent	3	10	0	1	8	5	8	10	5	5	1	5	57	53
101632       Mendes Edelquinn       4       9       7       5       9       4       20       10       2       3       1       5       60       50         101633       Nair Shruthi Viju       5       8       3       5       9       4       20       10       4       5       10       5       63       70         101633       Nirmal Babu       2       10       7       5       5       10       14       4       5       68       56       68         101636       Noronha Ryan Sunil       3       0       4       1       6       4       18       9       5       5       1       4       61       59         101637       Paria Drokar Tulsidas       2       9       7       5       9       0       10       10       5       64       46         101640       Parab Orkar Tulsidas       2       9       7       5       9       4       11       9       5       5       1       5       62       56         101640       Patil Naibhav Prakash       6       9       5       9       4       11       9       5       5	101631	Mathias Sandesh Sunny	8	10	7	0	9	0	8	9	0	5	0	0	46	65
101633         Nair Shruthi Viju         5         8         3         5         9         4         20         10         4         5         10         7         4         8         5         18         10         0         5         0         0         60         57           101636         Nirmal Babu         2         10         7         5         7         5         0         10         4         4         55         60         50         5         10         5         7         5         0         10         5         10         5         7         5         0         10         5         10         5         10         7         4         1         5         5         5         0         10         5         5         6         5	101632	Mendes Edelquinn	4	9	7	5	9	5	9	10	2	3	1	5	60	50
101634     Nirmay Augustine     5     10     7     4     8     5     18     10     0     5     0     0     5     0     10     4     3     1     4     55     68       101635     Nirmal Babu     3     0     4     1     6     4     18     9     5     0     1     5     49     5       101637     Paishreya Rajendra     4     7     7     4     9     5     10     4     1     5     14     8     5     5     6     5     64     4       101637     Paishreya Rajendra     4     10     7     0     5     5     0     10     5     4     10     7     0     5     5     0     10     0     3     9     5     53     10 </td <td>101633</td> <td>Nair Shruthi Viju</td> <td>5</td> <td>8</td> <td>3</td> <td>5</td> <td>9</td> <td>4</td> <td>20</td> <td>10</td> <td>4</td> <td>5</td> <td>1</td> <td>5</td> <td>63</td> <td>70</td>	101633	Nair Shruthi Viju	5	8	3	5	9	4	20	10	4	5	1	5	63	70
101635       Nirmal Babu       2       10       7       5       7       5       0       10       4       3       1       4       55       68         101636       Noronha Ryan Sunil       3       0       4       7       7       4       9       5       13       9       5       5       1       4       61       59         101637       Palani Salome Nelson       5       10       7       7       4       9       5       14       8       5       5       6       5       54       69         101639       Parab Omkar Tulsidas       2       9       7       5       9       0       10       10       3       9       5       63       71         101641       Patel Naeem       4       10       7       5       10       10       0       5       5       10       10       5       62       62       52         101644       Patil Vaibav Prakash       6       9       5       10       10       10       5       61       15       61       15       61       15       61       16       10       10       10       5	101634	Nimmy Augustine	5	10	7	4	8	5	18	10	0	5	0	0	60	57
101636       Noronha Ryan Sunil       3       0       4       1       6       4       18       9       5       0       1       5       49       56         101637       Pais breva Rajendra       4       7       7       4       9       5       13       9       5       5       1       4       61       59         101638       Palani Salome Nelson       5       10       7       0       5       5       0       10       5       5       64       4       6         101640       Patel Naeem       4       10       7       0       5       5       10       10       5       5       1       5       63       71         101641       Patel Srujan       7       9       4       4       9       5       18       9       0       5       6       6       6       6       10       10       0       5       5       1       5       62       55         101642       Patil Vaibhav Prakash       6       9       5       17       10       10       5       5       1       5       62       55       10       10       5	101635	Nirmal Babu	2	10	7	5	7	5	0	10	4	3	1	4	55	68
101637       Pais Shreya Rajendra       4       7       7       4       9       5       13       9       5       1       4       61       59         101638       Palah Salome Nelson       5       10       7       4       1       5       14       8       5       5       6       5       64       46         101639       Parab Omkar Tulsidas       2       9       7       5       9       0       0       10       5       4       1       5       54       4       5       5       6       5       63       71         101641       Patel Naeem       4       10       7       0       9       5       18       9       0       5       0       0       5       5       1       5       62       52         101642       Patil Aniga Dilip       4       9       5       10       10       0       5       5       1       5       61       61       11       10       5       5       1       10       5       5       10       10       0       5       5       10       10       5       5       1       10       5 </td <td>101636</td> <td>Noronha Ryan Sunil</td> <td>3</td> <td>0</td> <td>4</td> <td>1</td> <td>6</td> <td>4</td> <td>18</td> <td>9</td> <td>5</td> <td>0</td> <td>1</td> <td>5</td> <td>49</td> <td>56</td>	101636	Noronha Ryan Sunil	3	0	4	1	6	4	18	9	5	0	1	5	49	56
101638       Palani Salome Nelson       5       10       7       4       1       5       14       8       5       5       6       5       64       46         101639       Parab Omkar Tulsidas       2       9       7       5       9       0       0       10       5       4       1       5       54       69         101640       Patel Naeem       4       10       7       0       4       9       5       18       9       0       5       0       0       6       5       56       6       7       7         101641       Patel Naja Dilip       6       9       5       4       9       4       8       10       0       5       0       0       5       0       0       5       14       7       0       9       4       8       10       0       5       10       10       5       5       10       10       5       5       14       14       1       15       14       7       7       7       10       10       10       10       10       10       10       10       10       10       10       10       10 <td>101637</td> <td>Pai Shreya Rajendra</td> <td>4</td> <td>7</td> <td>7</td> <td>4</td> <td>9</td> <td>5</td> <td>13</td> <td>9</td> <td>5</td> <td>5</td> <td>1</td> <td>4</td> <td>61</td> <td>59</td>	101637	Pai Shreya Rajendra	4	7	7	4	9	5	13	9	5	5	1	4	61	59
101639       Parab Omkar Tulsidas       2       9       7       5       9       0       10       15       4       1       5       54       69         101640       Patel Naeem       4       10       7       0       55       5       0       10       0       3       9       5       63       71         101641       Patel Srujan       7       9       4       4       9       5       18       9       0       5       0       0       62       52         101642       Patil Anuja Dilip       4       9       5       4       10       7       5       10       10       0       5       0       0       61       61         101644       Pereira Terrell Russel       8       10       7       0       9       5       10       10       0       5       4       1       1       5       62       57         101645       Philip Prasun Alexander       5       7       7       0       10       4       3       1       5       61       45         101645       Pshiky Shubham Dinesh       1       4       7       7       7 <td>101638</td> <td>Palani Salome Nelson</td> <td>5</td> <td>10</td> <td>7</td> <td>4</td> <td>1</td> <td>5</td> <td>14</td> <td>8</td> <td>5</td> <td>5</td> <td>6</td> <td>5</td> <td>64</td> <td>46</td>	101638	Palani Salome Nelson	5	10	7	4	1	5	14	8	5	5	6	5	64	46
101640       Patel Naeem       4       10       7       0       5       5       0       10       0       3       9       5       63       71         101641       Patel Srujan       7       9       4       4       9       5       18       9       0       5       0       0       62       52         101642       Patil Vaibhav Prakash       6       9       5       4       9       4       8       10       0       5       1       5       62       56         101643       Patil Vaibhav Prakashe       6       9       5       4       9       4       8       10       0       5       5       1       5       62       57         101644       Pereira Terrell Russel       8       10       7       0       9       5       10       10       4       1       1       5       61       44       9       5       10       10       4       1       1       5       62       57         101645       Philip Prasun Alexander       3       10       2       4       9       7       7       6       10       4       1	101639	Parab Omkar Tulsidas	2	9	7	5	9	0	0	10	5	4	1	5	54	69
101641       Patel Srujan       7       9       4       4       9       5       18       9       0       5       0       0       62       52         101642       Patil Anuja Dilip       4       9       1       5       9       4       11       9       5       5       1       5       62       56         101643       Patil Vaibhav Prakash       6       9       5       4       9       4       8       10       0       5       9       0       61       61         101644       Pereira Terrell Russel       8       10       7       0       9       5       17       10       5       5       1       5       62       57         101645       Philip Prasun Alexander       5       7       7       0       9       5       10       10       4       1       5       61       41       7       10       10       4       1       5       5       10       10       4       7       7       6       4       19       7       7       7       35       35         101648       Roselyn Lorson       0       5       5	101640	Patel Naeem	4	10	7	0	5	5	0	10	0	3	9	5	63	71
101642       Patil Anuja Dilip       4       9       1       5       9       4       11       9       5       5       1       5       62       56         101643       Patil Vaibhav Prakash       6       9       5       4       9       4       8       10       0       5       0       0       61       61         101644       Pereira Terrell Russel       8       10       7       0       7       5       10       10       0       5       9       0       50       65         101645       Philip Prasun Alexander       5       7       7       0       9       5       17       10       4       1       1       5       61       45         101645       Pushkarna Himanshu A.       3       10       2       4       9       5       0       10       4       3       1       5       5       7       6       12       10       4       3       1       5       5       7       6       14       14       7       7       7       6       5       7       7       1       16       5       7       7       7       7	101641	Patel Srujan	7	9	4	4	9	5	18	9	0	5	0	0	62	52
101643       Patil Vaibhav Prakash       6       9       5       4       9       4       8       10       0       5       0       0       61       61         101644       Pereira Terrell Russel       8       10       7       0       9       5       10       10       0       5       9       0       50       65         101645       Philip Prasun Alexander       5       7       7       0       9       5       17       10       5       5       1       5       62       57         101645       Pushkarna Himanshu A.       3       10       2       4       9       5       0       10       4       1       1       5       61       45         101647       Reddy C Sai Vivaswath       3       10       5       6       6       7       7       6       19       5       7       7       31       19         101648       Roselyn Lorson       0       5       5       7       7       7       10       10       7       7       5       50       1         101650       Shinda Ankita Vijay       1       0       5       5	101642	Patil Anuja Dilip	4	9	1	5	9	4	11	9	5	5	1	5	62	56
101644       Pereira Terrell Russel       8       10       7       0       7       5       10       10       0       5       9       0       50       65         101645       Philip Prasun Alexander       5       7       7       0       9       5       17       10       5       5       1       5       62       57         101646       Pushkarna Himanshu A.       3       10       2       4       9       5       0       10       4       1       1       5       61       45         101647       Reddy C Sai Vivaswanth       3       10       3       0       8       5       12       10       4       3       1       5       61       45         101648       Roselyn Lorson       0       5       5       7       7       6       4       19       7       7       7       35       35         101649       Shinde Ankita Vijay       1       0       5       5       7       7       1       16       5       7       6       0       11       7       7       5       50       1         10165       Sinigate Kranti Bhau	101643	Patil Vaibhav Prakash	6	9	5	4	9	4	8	10	0	5	0	0	61	61
101645       Philip Prasun Alexander       5       7       7       0       9       5       17       10       5       5       1       5       62       57         101646       Pushkarna Himanshu A.       3       10       2       4       9       5       0       10       4       1       1       5       61       45         101647       Reddy C Sai Vivaswanth       3       10       3       0       8       5       12       10       4       3       1       5       61       45         101648       Roselyn Lorson       0       5       6       6       7       7       6       44       19       7       7       7       35       35         101649       Shetty Shubham Dinesh       1       4       7       7       7       6       44       19       7       7       7       35       35         101650       Shinde Ankita Vijay       1       0       5       5       7       7       0       10       7       7       5       50       1         101651       Shingate Kranti Bhau       1       5       5       7       6	101644	Pereira Terrell Russel	8	10	7	0	7	5	10	10	0	5	9	0	50	65
101646       Pushkarna Himanshu A.       3       10       2       4       9       5       0       10       4       1       1       5       41       74         101647       Reddy C Sai Vivaswanth       3       10       3       0       8       5       12       10       4       3       1       5       61       45         101648       Roselyn Lorson       0       5       6       6       7       7       66       19       5       7       6       7       31       19         101649       Shetty Shubham Dinesh       1       4       7       7       7       6       44       19       7       7       7       35       35         101650       Shinde Ankita Vijay       1       0       5       5       7       7       1       166       5       7       6       4       13       7       7       5       50       1         101652       Shingate Kranti Bhau       1       5       5       5       7       6       4       13       7       7       7       41       18         101653       Singh Siddarth Satbir       0	101645	Philip Prasun Alexander	5	7	7	0	9	5	17	10	5	5	1	5	62	57
101647       Reddy C Sai Vivaswanth       3       10       3       0       8       5       12       10       4       3       1       5       61       45         101648       Roselyn Lorson       0       5       6       6       7       7       6       19       5       7       6       7       31       19         101649       Shetty Shubham Dinesh       1       4       7       7       7       6       44       19       7       7       7       35       35         101650       Shinde Ankita Vijay       1       0       5       5       7       7       1       16       5       7       6       4       19       7       7       5       50       1         101651       Shinde Ankita Vijay       1       0       5       5       7       7       0       10       7       7       5       50       1         101652       Shingate Kranti Bhau       1       5       5       7       6       4       13       7       7       7       41       18         101654       Sohi Yashveer Singh       6       4       6       7<	101646	Pushkarna Himanshu A.	3	10	2	4	9	5	0	10	4	1	1	5	41	74
101648       Roselyn Lorson       0       5       6       6       7       7       6       19       5       7       6       7       31       19         101649       Shetty Shubham Dinesh       1       4       7       7       7       6       4       19       7       7       7       35       35         101650       Shinde Ankita Vijay       1       0       5       5       7       7       1       16       5       7       6       7       31       9         101651       Shinde Ankita Vijay       1       0       5       5       7       7       0       10       7       7       5       50       1         101652       Shingate Kranti Bhau       1       5       5       5       7       6       0       11       7       7       6       5       46       6         101653       Singh Siddarth Satbir       0       2       6       7       7       1       20       7       7       7       46       17         101655       Srivastava Animesh N.       3       3       6       7       7       1       20       7 <td>101647</td> <td>Reddy C Sai Vivaswanth</td> <td>3</td> <td>10</td> <td>3</td> <td>0</td> <td>8</td> <td>5</td> <td>12</td> <td>10</td> <td>4</td> <td>3</td> <td>1</td> <td>5</td> <td>61</td> <td>45</td>	101647	Reddy C Sai Vivaswanth	3	10	3	0	8	5	12	10	4	3	1	5	61	45
101649       Shetty Shubham Dinesh       1       4       7       7       6       4       19       7       7       7       35       35         101650       Shinde Ankita Vijay       1       0       5       5       7       7       1       16       5       7       6       7       6       7       31       9         101651       Shinde Ankita Vijay       1       0       5       5       7       7       0       10       7       7       7       5       50       1         101652       Shingate Kranti Bhau       1       5       5       5       7       6       4       13       7       7       7       41       18         101653       Singh Siddarth Satbir       0       2       6       7       7       6       4       13       7       7       7       41       18         101654       Sohi Yashveer Singh       6       4       6       5       7       6       0       12       5       5       6       7       44       11         101655       Srivastava Animesh N.       3       3       6       7       7	101648	Roselyn Lorson	0	5	6	6	7	7	6	19	5	7	6	7	31	19
101650       Shinde Ankita Vijay       1       0       5       5       7       1       16       5       7       6       7       31       9         101651       Shinde Shantanu S.       2       0       5       7       7       0       10       7       7       5       50       1         101652       Shingate Kranti Bhau       1       5       5       5       7       6       0       11       7       7       6       5       46       6         101653       Singh Siddarth Satbir       0       2       6       7       7       6       4       13       7       7       7       41       18         101654       Sohi Yashveer Singh       6       4       6       5       7       7       1       20       7       7       7       46       17       11         101655       Srivastava Animesh N.       3       3       6       7       7       1       20       7       7       5       45       38         101655       Traya Serah Jacob       4       14       8       6       7       7       20       7       7       7 </td <td>101649</td> <td>Shetty Shubham Dinesh</td> <td>1</td> <td>4</td> <td>7</td> <td>7</td> <td>7</td> <td>6</td> <td>4</td> <td>19</td> <td>7</td> <td>7</td> <td>7</td> <td>7</td> <td>35</td> <td>35</td>	101649	Shetty Shubham Dinesh	1	4	7	7	7	6	4	19	7	7	7	7	35	35
101651       Sninde Snantanu S.       2       0       5       7       7       0       10       7       7       5       50       1         101652       Shingate Kranti Bhau       1       5       5       5       7       6       0       11       7       7       6       5       46       6         101653       Singh Siddarth Satbir       0       2       6       7       7       6       4       13       7       7       7       41       18         101654       Sohi Yashveer Singh       6       4       6       5       7       6       0       12       5       5       6       7       46       17         101655       Srivastava Animesh N.       3       3       6       7       7       0       19       7       7       5       45       38         101655       Tanya Serah Jacob       4       14       8       6       7       7       0       19       7       7       6       5       36       8         101657       Telang Shruti Vikas       2       8       5       6       7       7       20       7       7 <td>101650</td> <td>Shinde Ankita Vijay</td> <td>1</td> <td>0</td> <td>5</td> <td>5</td> <td>/</td> <td>/</td> <td>1</td> <td>16</td> <td>5</td> <td>/</td> <td>6</td> <td>/</td> <td>31</td> <td>9</td>	101650	Shinde Ankita Vijay	1	0	5	5	/	/	1	16	5	/	6	/	31	9
101652       Shingate Kranti Bnau       1       5       5       7       6       0       11       7       7       6       5       46       6         101653       Singh Siddarth Satbir       0       2       6       7       7       6       4       13       7       7       7       7       41       18         101654       Sohi Yashveer Singh       6       4       6       5       7       6       0       12       5       5       6       7       41       18         101655       Srivastava Animesh N.       3       3       6       7       7       1       20       7       7       7       46       17         101655       Srivastava Animesh N.       3       3       6       7       7       0       19       7       7       7       46       17         101656       Tanya Serah Jacob       4       14       8       6       7       7       0       19       7       7       7       5       38         101657       Telang Shruti Vikas       2       8       5       6       7       7       4       19       5	101651	Shinde Shantanu S.	2	0	5	/	/		0	10	/	/	/	5	50	
101835       Singif Studie (11 Satur)       0       2       6       7       7       6       4       13       7       1       20       7	101652	Singh Siddorth Sothir	1	5	5	5	7	6	0	11	7	/	0	5	46	10
101034       3011 Pasheer Shight       0       4       0       3       7       0       12       3       3       0       7       11         101655       Srivastava Animesh N.       3       3       6       7       7       7       1       20       7       7       7       46       17         101655       Srivastava Animesh N.       3       3       6       7       7       1       20       7       7       7       46       17         101656       Tanya Serah Jacob       4       14       8       6       7       7       0       19       7       7       7       5       45       38         101657       Telang Shruti Vikas       2       8       5       6       7       5       7       20       7       7       7       24       69         101658       Tiwari Dipak Kamlesh       9       14       8       7       7       4       19       5       7       6       7       32       46         101659       Varghese Jacob       1       10       5       6       7       7       1       17       7       7       44 </td <td>101055</td> <td>Sobi Vashvoor Singh</td> <td>6</td> <td>Z </td> <td>6</td> <td>/ E</td> <td>7</td> <td>6</td> <td>4</td> <td>13</td> <td>/</td> <td>/ E</td> <td>6</td> <td>7</td> <td>41</td> <td>10</td>	101055	Sobi Vashvoor Singh	6	Z 	6	/ E	7	6	4	13	/	/ E	6	7	41	10
101055       Sitvastava Animesi N.       3       3       6       7       7       1       20       7       7       7       1       40       17         101656       Tanya Serah Jacob       4       14       8       6       7       7       0       19       7       7       7       5       45       38         101657       Telang Shruti Vikas       2       8       5       6       7       5       0       8       7       7       6       5       36       8         101658       Tiwari Dipak Kamlesh       9       14       8       7       7       5       7       20       7       7       7       24       69         101659       Varghese Jacob       1       10       5       6       7       7       1       17       7       7       7       24       69         101660       Vellikkara Harun Joe       0       4       5       7       7       1       17       7       7       7       44       17         101661       Verma Pragya Surendra       0       4       6       6       7       7       0       13       5 <td>101054</td> <td>Srivastava Animosh N</td> <td>2</td> <td>4</td> <td>6</td> <td>5</td> <td>7</td> <td>7</td> <td>1</td> <td>20</td> <td>5</td> <td>5</td> <td>7</td> <td>7</td> <td>47</td> <td>17</td>	101054	Srivastava Animosh N	2	4	6	5	7	7	1	20	5	5	7	7	47	17
101050       1011yu Setain Jacob       14       14       16       0       17       17       17       17       17       17       17       17       15       13       17       17       17       15       17       17       17       17       17       17       15       17       17       17       15       13       17       17       15       13       17       17       15       13       17       17       15       13       17       17       15       13       17       17       15       16       17       17       16       15       16       8       10       15       11       10 <t< td=""><td>101656</td><td>Tanya Serah Jacoh</td><td></td><td>1/</td><td>8</td><td>6</td><td>7</td><td>7</td><td>0</td><td>10</td><td>7</td><td>7</td><td>7</td><td>5</td><td>40</td><td>28</td></t<>	101656	Tanya Serah Jacoh		1/	8	6	7	7	0	10	7	7	7	5	40	28
101057       1010057       1010057       1010057 <td>101657</td> <td>Telang Shruti Vikas</td> <td>2</td> <td>8</td> <td>5</td> <td>6</td> <td>7</td> <td>5</td> <td>0</td> <td>8</td> <td>7</td> <td>7</td> <td>,</td> <td>5</td> <td>36</td> <td>8</td>	101657	Telang Shruti Vikas	2	8	5	6	7	5	0	8	7	7	,	5	36	8
101659       Varghese Jacob       1       10       5       6       7       7       4       19       5       7       6       7       32       46         101659       Varghese Jacob       1       10       5       6       7       7       4       19       5       7       6       7       32       46         101660       Vellikkara Harun Joe       0       4       5       7       7       7       1       17       7       7       7       44       17         101661       Verma Pragya Surendra       0       4       6       6       7       7       0       13       5       6       6       5       11       6         101662       Waghmare Ashriel S.       0       6       5       7       5       6       0       12       7       6       7       42       21       15         101663       Waghulade Mithilesh R.       1       13       5       5       7       7       4       16       5       7       6       7       42       27         101665       Jadhav Amey       1       9       5       7       7       <	101658	Tiwari Dipak Kamlesh	9	14	8	7	7	5	7	20	7	7	7	7	24	69
101600       Vellikkara Harun Joe       0       4       5       7       7       7       1       17       7	101659	Varghese Jacob	1	10	5	6	7	7	, Д	19	5	7	,	7	32	46
101661       Verma Pragya Surendra       0       4       6       6       7       7       0       13       5       6       6       5       11       6         101661       Verma Pragya Surendra       0       4       6       6       7       7       0       13       5       6       6       5       11       6         101662       Waghmare Ashriel S.       0       6       5       7       5       6       0       12       7       6       7       5       21       15         101663       Waghulade Mithilesh R.       1       13       5       5       7       7       4       16       5       7       42       27         101665       Jadhav Amey       1       9       5       7       7       6       13       7       7       6       5       37       14         101666       Patil Manali       0       3       5       6       7       6       13       7       7       6       5       37       14	101660	Vellikkara Harun Joe	0	4	5	7	7	7		17	7	7	7	7	44	17
101662       Waghmare Ashriel S.       0       6       5       7       5       6       0       12       7       6       7       5       21       15         101662       Waghmare Ashriel S.       0       6       5       7       5       6       0       12       7       6       7       5       21       15         101663       Waghulade Mithilesh R.       1       13       5       5       7       7       4       16       5       7       6       7       42       27         101665       Jadhav Amey       1       9       5       7       7       6       2       11       7       6       7       36       33         101666       Patil Manali       0       3       5       6       7       6       13       7       7       6       5       37       14	101661	Verma Pragva Surendra	0	-т Д	6	6	7	7	0	13	5	6	,	5	11	6
101663       Waghulade Mithilesh R.       1       13       5       5       7       7       4       16       5       7       6       7       42       27         101665       Jadhav Amey       1       9       5       7       7       6       2       11       7       6       7       42       27         101665       Jadhav Amey       1       9       5       7       7       6       2       11       7       6       7       36       33         101666       Patil Manali       0       3       5       6       7       6       13       7       7       6       5       37       14	101662	Waghmare Ashriel S	0	6	5	7	5	6	0	12	7	6	7	5	21	15
101665       Jadhav Amey       1       9       5       7       7       6       2       11       7       6       7       7       36       33         101666       Patil Manali       0       3       5       6       7       6       13       7       7       6       5       37       14	101663	Waghulade Mithilesh R	1	13	5	5	7	7	4	16	5	7	6	7	42	27
101666     Patil Manali     0     3     5     6     7     6     6     13     7     7     6     5     37     14	101665	Jadhav Amev	1	9	5	7	, 7	6	2	11	7	6	7	, 7	36	33
	101666	Patil Manali	0	3	5	6	. 7	6	6	13	7	7	6	5	37	14



# Summary of Course Exit Survey

					Rati	ng Pe	rcenta	ge					
<b>CO-</b>	Course Outcome				No of	stud	ents ra	ted					e CO-Question Attainment 3 3 3 3 3 3 3 3 3 3
QUE	Question	'5'	%	'4'	%	'3'	%	'2'	%	'1'	%	%	Attainment
		Total number of students given Course Exit Survey'60'											
1	Rate yourself based on understanding of the concept of linear, nonlinear data structure	19	32%	21	35%	17	28%	1	2%	1	2%	78%	3
2	Rate yourself based on ability of designing an algorithm to implement stack, queue data structures and apply the concept for an application	15	25%	22	37%	20	33%	1	2%	1	2%	75%	3
3	Rate yourself based on ability of designing an algorithm to implement linked list data structures and apply the concept for an application	12	20%	20	33%	21	35%	4	7%	0	0%	70%	3
4	Rate yourself based on understanding of the concept of tree and apply to solve the problems	10	17%	22	37%	22	37%	4	7%	0	0%	71%	3
5	Rate yourself based on understanding the concept of graph and apply to solve the problems	11	18%	22	37%	21	35%	2	3%	2	3%	71%	3
6	Rate yourself based on ability of designing an algorithm to implement sort and search operations	8	13%	20	33%	23	38%	5	8%	2	3%	67%	2



Course Exit Survey



# <u>Goal Set</u>

% of Marks	% of Student	Attainment Level
53%	60%	1
53%	65%	2
53%	70%	3



# Summary of Course Assessment Calculation

			Ir	nternal As	sessment			Exte Asses	ernal sment	
00		Dire	ct Assessm	ent	Indirect Assessm ent	Int.	Int.	Evt	Ext	Final
ID	Course Outcome	Tool1	Tool2	Prelim	Course Exit	Attain ment	Attain ment	Ext Asses Asses Attainm ent % 83.08% 83.08% 83.08% 83.08% 83.08%	Attainm ent	Attain ment Level
		80%		20%	Survey	/0	Lever		Level	
			80%		20%					
				60	%			40	)%	
C305.	Demonstrate the concept of linear,	AT-1	IA-1	050/	700/	60.50	2	02.00%	2	2.4
1	nonlinear data structure	29.23%	93.85%	85%	/8%	68.58	2	83.08%	3	2.4
C305.	Design an algorithm to implement stack, queue data	AT-1	IA-1							
2	structures and apply the concept for an application	38.46%	63.08%	85%	75%	61.1	1	83.08%	3	1.8
	Design an algorithm to implement	AT-1	IA-1							
C305. 3	Inked list data structures and apply the concept for an application	86.15%	78.46%	85%	70%	80.28	3	83.08%	3	3
C305. 4	Demonstrate the concept of tree and apply to solve the	СТ-1	IA-2	85%	71%	71.12	3	83.08%	3	3
	problems	35.38%	100%							
C305. 5	Demonstrate the concept of graph and apply to solve	AT-2	IA-2	85%	71%	77.03	3	83.08%	3	3
	the problems	64.62%	89.23%							
C305	Design an algorithm	AT-2	MCQ-1							
6	and search operations	69.23%	76.92%	85%	67%	73.77	3	83.08%	3	3



# CO-PO and CO-PSO Attainment

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CSC305.1	2.4	2.4		2.4									2.4	2.4
CSC305.2	1.8	1.8	1.8	1.8	1.8						1.8	1.8	1.8	1.8
CSC305.3	3	3	3	3	3						3	3	3	3
CSC305.4	3		3	3								3	3	3
CSC305.5	3		3	3								3	3	3
CSC305.6	3	3	3								3	3	3	3
Average	2.7	2.6	2.8	2.6	2.4						2.6	2.8	2.7	2.7



Attainment of Program Outcomes

# and Program Specific Outcomes



# Attainment of POs and PSOs:

Assessment tools are categorized into **Direct and Indirect** methods to assess the program outcomes. **80% weightage is given to direct methods and 20% to indirect methods.** 

• Direct methods display the students' knowledge and skills from their performance in the various academic activities like Internal Assessment Exams, End–Semester Examinations, Assignment/Class Tests, Presentations, and Home Assignments, Quizzes, Practicals etc. These methods provide a sampling of what students know and/or can do and provide strong evidence of student learning. Average of CO-PO attainment of all the courses is considered as direct method assessment tool for PO attainment.

• Indirect methods such as surveys and interviews of the stakeholders to reflect on student's learning. They assess opinions or thoughts about the graduates' knowledge or skills valued by different stakeholders. The various indirect tools are:

- Program Exit Survey
- Surveys conducted on <u>Co-curricular</u> and Extra-curricular activities (<u>PO6</u> and <u>PO7</u>).

The average of PO attainment of all surveys is considered for calculating the PO attainment. the following figure 1 shows the various methods/tools used for calculating the PO attainment along with weightage given to each method.



Figure 1: List of Program Assessment tools

The Programme outcomes are difficult to measure such as assessing critical thinking, creativity, analytical skills, and problem solving etc. Hence the department has adopted Criterion Referenced Rubrics to assess the POs. The Rubric criteria are developed by department faculty and distributed to students before being evaluated so that they are aware of the performance criteria and their weightage.

The methods/tools used for the assessment process that periodically documents and demonstrates the degree to which the Programme Outcomes are attained are shown below including the information on:

a) Listing and description of the assessment processes used to gather the data, and

b) The frequency with which these assessment processes are carried out.

Sr. No.	Direct Assessment Method	Assessment frequency	Description
1.	CO attainment of	Once in a	Minimum two internal tools (internal assessment
	all courses	Semester	test, class/assignment test, seminar, quiz, practical,
			mini project etc.) are used to find the attainment of
			each course outcome along with the performance
			of the students in preliminary exams and end
			semester exams. the weightage provided for that is
			80%. Course exit survey is also considered for the
			attainment, that is conducted at the end of the
			semester and 20% weightage is given for that.

### Table 1: Direct Assessment tool used for PO attainment



Fr. C. Rodrigues Institute of Technology, Vashi, Navi Mumbai.

Sr.	Indirect	Assessment	Method Description
No.	Assessment	frequency	
	Method		
1	Alumni Survey	Once in two	Collect variety of information about program
1		years	outcomes from the Alumni students.
2	Program Exit	Once in a	Collect variety of information about program
2	Survey	year	outcomes from the outgoing students
2	Employer Survey	Once in two	Collect variety of information about the
5		years	graduates' skills, capabilities and opportunities
	Survey on Co and	Once in a	Collect variety of information on students
4	Extra-curricular	year on all	capabilities and opportunities.
	activities	activities	

#### Table 2: Indirect Assessment tool used for PO attainment

The attainment of Course outcomes of every course is directly mapped to Program Specific Outcomes.

# PO & PSO Attainment of Academic Year of 2018-2019

Subject	Subject	РО	РО	РО	РО	РО	РО	РО	РО	РО	PO1	PO1	PO1	PSO	PSO
Code	Name	1	2	3	4	5	6	7	8	9	0	1	2	1	2
FEC101	AM-I	3	3			3									
FEC102	AP-I	3	3		3		3	3					3		
FEC103	AC-I	3					3	3					3		
FEC104	EM	3	3										3		
FEC105	BEE	2.5	2.6		2.6					2.5					
FEC106	EVS	3					3	3	3						
FEC201	AM-II	2.9	2.9			3									
FEC202	AP-II	3	3				3								
FEC203	AC-II	2.8					2.8	3			3		3		
FEC204	ED	3	3			3							3		
FEC205	SPA	3	3	3											



FEC206	CS					3	3			3	3	3	3		
CSC301	AM -III	3	3										3	3	
CSC302	DLDA	3	3	3		3							3	3	3
CSC303	DIS	3	3	3									3	3	
CSC304	ECCF	2.6	2.6								2.6				2.6
CSC305	DS	2.6	2.7	2.4	3								3	2.7	2.7
CSL301	DSL	2.7	3	3		3							3	2.8	3
CSL302	BEL	1.6	1.6												1.6
CSL303	DSL	2.2	2.2	2.2								2.2	2.2	2.2	2.2
CSL304	OOPL	2.5	2.6	2.6	3	3							2.4	2.6	2.6
CSC401	AM-IV	2.2	2.2											2.2	
CSC402	AOA	3	3	3		3						3	3		
CSC403	COA	1.2	1.4	1		1.4							1		
CSC404	CG	3	3	3	3								3	3	3
CSC405	OS	1	1	1	1								1	1	1
CSL401	AOAL		3	3								3	3	3	3
CSL402	CGL	3	3	3	3	3			3	3	3	3	3	3	3
CSL403	PAL	1	1	1		1							1	1	
CSL404	OSL	1	1	1		1							1	1	1
CSL405	OSTL	1.5		1.5	1.5	1.5							1.5	1.5	1.5
CPC501	MP	1.6	1.6	1.6									1		1.6
CPC502	OS	2.4	2.4	3									2.3	2.4	2.6
CPC503	SOOAD	3	3	3	3				3			3	3	3	3
CPC504	CN	3	3	3		3							3	3	3
CPL501	WTL	3	3	3	3	3			1.8	1.8	1.8	1.8	2.4	2.8	1.8
CPL502	BCE						3		3	3	3	3	3	3	3
CPC601	SPCC	2.9	3	2.9		3							2.8	2.9	2.9
CPC602	SE	2.2	2.2	1.6	1	1.8	1.6		2.2	1.8		1.6	2.2		2
CPC603	DD	2.2	1.6	2.2					1			1.8	2.2	2	2
CPC604	MCC	3	3	3		3							3	3	3
CPE6011	SPM	2.2			2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2		2.2
CPL601	NPL		1	1		1			1	1	1		1	1	1
CPC701	DSP	3	3												
CPC702	CSS	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2				2.2	2.2	2.2
CPC703	AI	1	1.3	1.3	1.6	1.2	1	1.6					1.2	1.3	1.3
CPE70425	SC	3	3	3		3							3	3	3
CPE70426	ERP	3	3	3	3	3					3		3	3	3



CPP701	PROJEC T I		2.9		2.9	2.9	2.9							2.9	2.9
CPL701	NTAL		2.8	2.8	2.4	2.8			2.8	2.8	2.8		2.8		
CPC801	DWDM	2	1.6	1.6	2.2	2.2							2.2		
CPC802	HMI	2.2	2.2	2.2	2.2	2.2	2.2						2.2	2.2	2.2
CPC803	PDS	2.2	2.2	2.2	2.2	2.2						2.2	2.2	2.2	2.2
CPE8031	ML	1.1	1.1	1.2	1.1	1.2							1.1	1.1	1.2
CPE8035	BDA	2.2	2.2	2.2		2.2				2.2			2.2	2.2	2.2
CPP802	PROJEC T II							3	3	3	3	3	3	3	3
CPL801	CCL	1.6	1.7	1.6		1.5	1			1	1	1	1.4		
Direct Attainment (80%)		2.4	2.4	2.3	2.2	2.2	2.6	2.7	2.4	2.4	2.5	2.5	2.3	2.4	2.3
Indirect Attainme nt (20%)	Progra m Exit Survey (50%)	3	3	3	3	3	3	3	3	3	3	3	3		
	Extra Curricu lar Actviti es (50%)								2	3	3	3	3		
Average Attainment		2.5 2	2.5 2	2.4 4	2.3 6	2.3 6	2.6 8	2.7 6	2.4 2	2.5 2	2.6	2.6	2.4 4	2.4	2.3



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



# Fr. C. Rodrigues Institute of Technology, Vashi, Navi Mumbai.

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
	2.7	2.7	