

# Numerical techniques for calculating attainment of Course Outcome (CO) and Programme Outcome (PO) under NEP-2020

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## ABSTRACT

The Outcome Based Learning (OBL) has been one of the major concerns of most academic institutions in Jammu & Kashmiri (UT), especially at the UG level. However, various understandings of the concept have resulted in various Programme Outcomes (PO) based on the Course Outcomes (CO). In the present paper the authors have developed a numerical technique for calculating the CO and PO attainment for the operationalization of the concept offering a fresh approach towards developing an effective, operational technique of measuring CO and PO .

**Keywords:** Outcome Based Education, Course Outcome, Programme Outcome.

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## INTRODUCTION

The idea behind OBE is to build the curriculum around the outcomes that students should be able to achieve by the end of their education programme [2]. The implementation of outcome-based education (OBE) has been a major emphasis of academic institutions in Jammu & Kashmir under NEP2020, particularly among UG level programmes. In order to ensure that the curricula design satisfies the programme outcome and programme education aim, which shall reflect the accomplishment of the JK HED mission and vision.

The majority of Jammu & Kashmir academic institutions that offer UG level courses have endorsed the approach toward OBE implementation. In order to facilitate the adoption of OBE, various educational methods have been highlighted [1], [10]. Based on the comments received from the stakeholders, the emphasis of OBE is able to provide the human capital demands as requested by the industry [3].

## DEFINITIONS AND PRELIMINARIES USED IN THIS PAPER:

### 1. Formula:

$$C_0 = \frac{AE + AI}{W} \times SF$$

$$C_0 = \frac{(47.3+25.6)}{90} \times 100 = 81\%$$

$$C_0 = L_3$$

NOTE:

1. IF  $C_0 > 70$ ,  $\rightarrow C_0 = L_3$
2. IF  $50 < C_0 < 70 \rightarrow C_0 = L_3$   $C_0 = L_2$
3. IF  $40 < C_0 < 50 \rightarrow C_0 = L_3$   $C_0 = L_1$

Moreover  $P_0$  can be calculated by taking this formula in consideration

$$P_0 = AC_0$$

For example

$C_0$  of Mathematics 2<sup>nd</sup> sem. = 78%

$C_0$  of Statistics 2<sup>nd</sup> sem. = 79%

$C_0$  of Physics 2<sup>nd</sup> sem. = 85%

$$P_0 = AC_0 = \frac{78+79+85}{3} = 80.66\%$$

Hence  $P_0$  = Grad A.

Where

AE = average external marks

AI = average internal marks

W = Total weightage

SF = SYLLABUS FACTOR

$C_0$  = COURSE OUTCOME

$L_i$ , represents different levels where  $i=1,2,3$

$P_0$  = programme out

$AC_0$  = Average course out come

1.  $P_0 > 90, P_0 = A^+$
2.  $P_0 > 80, P_0 = A$
3.  $P_0 > 70, P_0 = B^+$
4.  $P_0 > 60, P_0 = B$
5.  $P_0 > 50, P_0 = C^+$
6.  $P_0 > 40, P_0 = C$

### Main Results:

In this part, we will calculate  $C_0$  &  $P_0$  of the date which we collect from [4]

Serial No	Reg.No	Name	Result Details	Course Outcome $C_0$	Programme Outcome $P_0$
01	32194-NW-2018	SHABNUM BASHIR	GE616(25) EDPD616(44) ASTD616(21;28) SPIG616(69) SOC617(12;24)	$Co (GE) = \frac{25+22+16+25}{4} = \frac{22}{30} \times 100 = 73\% = L3$ $Co (PH) = 60.50\% = L2$ $Co (MA) = 76.70\% = L3$ $Co (ST) = 62.20\% = L2$	$Po = \frac{73+60.50+76.70+62.20}{4} = 68.10\%$ <p>Grade B</p>
02	32195-NW-2018	SHAISTA AKBAR	GE616(22) EDPD616(26) ASTD616(21;25) URLG616(42) STH617(5;25)		
03	28281-NW-2012	UZMA IMTIYAZ	GE616(28) MPHD616(29;26) LAGD616(54) ASTD616(36;25) SR617(21;22)		
04	32547-NW-2018	TABINDA TASNEEM	GE616(25) MPHD616(26;28) LAGD616(42) ASTD616(25;26) SR617(22;22)		

Serial No	Reg.No	Name	Result Details	Course Outcome <b>C<sub>o</sub></b>	Programme Outcome <b>P<sub>o</sub></b>
01	32197-NW-2018	SHAZIA FAYAZ	E616(16) ITCD616(42) GATD616(60) SPIG616(57) SOC617(18;24)	<b>Co(GE)=71.11%=L3</b>	
02	32198-NW-2018	TUIBA SIDIQ MALIK	GE616(26) ITCD616(59) GATD616(66) HCTG616(43;20) LSM617(16;27)		
03	32199-NW-2018	WAHEEDA REHMAN	GE616(21) ITCD616(39) GATD616(50) SPIG616(39) SOC617(12;25)		
04	32202-NW-2018	FAKIYA ZAFFER MIR	GE616(20) ITCD616(36) GATD616(47) HCTG616(42;17) LSM617(13;27)		
05	32583-NW-2018	AMINA BANO	GE616(21) ITCD616(47) GATD616(56) HCTG616(53;21) LSM617(18;26)	<b>CO(ITCD)=44.53%=L1</b>	
06	32204-NW-2018	SABA AYUB SHAH	GE616(30) ITCD616(54) CNTD616(24;28) PSYG616(47) SOC617(16;27)		
07	32205-NW-2018	ASMA ABDULLAH	GE616(24) ITCD616(51) EDPD616(45) PSYG616(54) SR617(22;22)		
08	32206-NW-2018	AZRA SULTAN	GE616(20) ITCD616(42) EDPD616(36) PSYG616(48) SOC617(14;27)		
09	32207-NW-2018	SAIQA SHAFI	GE616(16) ITCD616(30) EDPD616(30) HCTG616(47;14) SR617(13;22)		
10	32208-NW-2018	TAWSHEENA SYED BHAT	GE616(24) ITCD616(60) FDMD616(39;26) SPIG616(78) SOC617(17;28)	<b>CO(Psy)=60.00%=L2</b>	
11	32211-NW-2018	SHAFIYA SHABIR	GE616(9) ITCD616(33) FDMD616(40;24) SPIG616(44) LSM617(12;24)		
12	2212-NW-2018	TABISH NAZIR WANI	GE616(29) ITCD616(39) TWCD616(39) HCTG616(52;21) LSM617(19;24)		
13	32213-NW-2018	KHUSHBOO FAYAZ	GE616(25) ITCD616(30) TWCD616(42) HCTG616(36;16) SOC617(23;25)		

14	32214-NW-2018	BISMAH SHOWKAT	GE616(23) ITCD616(50) TWCD616(51) HCTG616(51;23) LSM617(13;24)		
15	32215-NW-2018	MANSA IMTIYAZ	GE616(19) ITCD616(33) TWCD616(42) HCTG616(42;17) STH617(7;24)		
16	32571-NW-2018	BISMA MANZOOR	GE616(17) ITCD616(45) TWCD616(32) SPIG616(45) SOC617(19;24)	<b>CO(GATD)=62.00%=L2</b>	
17	32217-NW-2018	ISHRAT FAROOQ	GE616(17) ITCD616(39) TWCD616(27) SPIG616(53) SOC617(12;12)		
18	32218-NW-2018	SHABNUM	GE616(19) ITCD616(29) TWCD616(26) HCTG616(32;12) SOC617(15;12)		
19	32221-NW-2018	SAHRISH BASHIR BABA	GE616(20) ITCD616(41) PNDD616(37;23) HCTG616(47;18) LSM617(12;28)		
20	32222-NW-2018	AQSA AYUB DAR	GE616(26) ITCD616(44) PNDD616(45;23) SPIG616(54) SOC617(21;25)		
21	32223-NW-2018	FALAK NAZ	GE616(28) ITCD616(53) PNDD616(42;23) SPIG616(65) SOC617(16;28)		
22	32224-NW-2018	IFRA SHABIR	GE616(20) ITCD616(48) PNDD616(42;25) SPIG616(71) SOC617(21;26)		
23	32225-NW-2018	FALAK	GE616(16) ITCD616(45) PNDD616(39;25) HCTG616(49;21) SOC617(17;29)		
24	32226-NW-2018	SAFIYA ALTAF	GE616(16) ITCD616(44) PNDD616(39;25) SPIG616(66) SOC617(21;24)		
25	32227-NW-2018	MEHAK MANZOOR	GE616(28) ITCD616(42) PNDD616(39;25) SPIG616(56) SOC617(26;25)		

**\*\* Po =  
61.42%  
= Grade B**

26	32228-NW-2018	BISMA BASHIR	GE616(26) ITCD616(54) PNDD616(45;25) HCTG616(47;14) LSM617(16;28)		
27	32229-NW-2018	SANA BILAL KHAN	GE616(12) ITCD616(15) PNDD616(12;AB) SPIG616(20) SOC617(13;12)		
28	32575-NW-2018	MEHAK	GE616(20) ITCD616(41) PNDD616(28;24) SPIG616(56) SOC617(22;24)	<b>CO(PNDD)=68.80%=L3</b>	
29	31596-nw-2017	KHUSHBOO QAYOOM	GE616(12) ITCD616(38) PNDD616(27;25) HCTG616(20;15) SOC617(13;20)		
30	32230-NW-2018	RAVEESA MUSHTAQ	GE616(24) ITCD616(53) VIMD616(43;28) SPIG616(62) HMS617(24;28)		
31	32231-NW-2018	MAHAK SHABIR	GE616(20) ITCD616(33) VIMD616(43;24) SPIG616(59) HMS617(18;22)		
32	32233-NW-2018	SHOAIB MANZOOR	GE616(17) ITCD616(42) VIMD616(41;28) SPIG616(50) HMS617(16;28)		
33	32234-NW-2018	KULSUM MAJID	GE616(28) ITCD616(36) VIMD616(44;23) HCTG616(43;20) SOC617(18;12)		
34	32236-NW-2018	UZMA YOUSUF	GE616(12) ITCD616(41) VIMD616(34;22) SPIG616(53) HMS617(15;15)		
35	2097-sw-2016	MEHVISH BANO	GE616(5) ITCD616(42) TWCD616(27) HCTG616(24;16) SOC617(12;27)		
36	32241-NW-2018	YASMEENA MUSHTAQ	GE616(19) ITCD616(50) CMPD616(66) URLG616(51) SOC617(17;24)		
37	32242-NW-2018	TUIBA FAYAZ	GE616(24) ITCD616(27) CMPD616(42) SPIG616(60) SOC617(15;27)		
38	32243-NW-2018	SEERAT RASHID	GE616(22) ITCD616(33) CMPD616(45) SPIG616(59) SOC617(14;22)		

39	32244-NW-2018	IQRA BILLAL	GE616(16) ITCD616(44) CMPD616(66) KATG616(39) SOC617(17;24)		
40	32246-NW-2018	IFFAT ALI	GE616(19) ITCD616(50) MGKD616(56) SPIG616(57) SOC617(17;28)		
41	32247-NW-2018	SIMRAN MUKHTAR	GE616(14) ITCD616(21) HAWD616(39;18) SPIG616(42) LSM617(12;25)		
42	32248-NW-2018	QUDSIA YASEEN	GE616(25) ITCD616(48) HAWD616(45;22) SPIG616(69) SOC617(22;25)		
43	32249-NW-2018	IRFA ASHRAF	GE616(20) ITCD616(41) HAWD616(40;18) HCTG616(46;23) SOC617(12;22)		
44	32250-NW-2018	SNOBER MUSHTAQ	GE616(22) ITCD616(44) HAWD616(29;14) HCTG616(42;15) STH617(6;24)		
45	32251-NW-2018	BISMA RAZAQ	GE616(16) ITCD616(39) HAWD616(41;19) SPIG616(53) SOC617(25;21)		
46	32252-NW-2018	SAHIBA NAZIR	GE616(25) ITCD616(50) HAWD616(41;30) HCTG616(46;25) SOC617(20;22)		
47	32253-NW-2018	SUBREENA SHAFI	GE616(21) ITCD616(48) HAWD616(42;27) SPIG616(65) SOC617(22;28)		
48	32254-NW-2018	MEHVESH MANZOOR	GE616(23) ITCD616(48) HAWD616(28;18) HCTG616(35;17) SOC617(21;24)		
49	32256-NW-2018	YASMEENA JAN	GE616(21) ITCD616(51) HAWD616(39;21) SPIG616(59) SOC617(17;21)		
50	32257-NW-2018	MUNZAREEN FARHAT	GE616(20) ITCD616(36) HAWD616(40;29) HCTG616(43;24) LSM617(9;25)		
51	32258-NW-2018	HEEMU JAN	GE616(12) ITCD616(26) HAWD616(23;AB) SPIG616(27) SOC617(7;12)		
52	32260-NW-2018	SAYIMA SULTAN	GE616(27) ITCD616(54) HAWD616(48;26) SPIG616(65) SOC617(24;27)		

53	32261- NW-2018	MUNAZAH NAZIR	GE616(25) ITCD616(54) HAWD616(50;30) SPIG616(68) SOC617(23;25)		
54	32262- NW-2018	RAJA SAFIYA HAJAM	GE616(28) ITCD616(63) HAWD616(52;30) SPIG616(74) SOC617(24;25)		
55	32263- NW-2018	MUQADASA HASSAN WANI	GE616(28) ITCD616(53) HAWD616(47;29) HCTG616(54;21) LSM617(16;26)		
56	32264- NW-2018	BISMA NASIR	GE616(16) ITCD616(33) HAWD616(24;14) HCTG616(34;16) STH617(6;24)		
57	32265- NW-2018	TASAWUR MEHRAJ	GE616(26) ITCD616(51) HAWD616(38;25) SPIG616(65) SOC617(20;25)		
58	32266- NW-2018	RIZMA FAROOQ	GE616(24) ITCD616(32) HAWD616(34;12) HCTG616(39;16) LSM617(9;25)		
59	32267- NW-2018	SABREENA SULTAN	GE616(26) ITCD616(44) HAWD616(36;21) HCTG616(34;14) SOC617(18;24)		
60	32255- NW-2018	AZKA NASEER	GE616(20) ITCD616(51) HAWD616(49;28) HCTG616(52;22) LSM617(13;25)		
61	32268- NW-2018	SAYIKA MUSHTAQ	GE616(15) ITCD616(36) HAWD616(49;19) SPIG616(41) SOC617(12;21)		
62	32269- NW-2018	TAWHEEDA NISSAR	GE616(28) ITCD616(59) HAWD616(39;29) HCTG616(57;21) SOC617(22;28)		
63	32270- NW-2018	MUNTAHA RASHID	GE616(25) ITCD616(57) HAWD616(43;28) SPIG616(62) SOC617(22;28)		
64	32271- NW-2018	IQRA MEHRAJ SHAH	GE616(27) ITCD616(60) HAWD616(52;14) SPIG616(68) SOC617(23;27)		
65	32272- NW-2018	ISHRAT BASHIR	GE616(21) ITCD616(36) HAWD616(42;30) SPIG616(59) SOC617(18;27)		
66	32273- NW-2018	INSHA JAN	GE616(25) ITCD616(50) HAWD616(42;26) SPIG616(59) SOC617(24;28)		
67	32274- NW-2018	MADIYA BARAK	GE616(26) ITCD616(48) HAWD616(42;30) SPIG616(71) SOC617(28;25)		

68	32275- NW-2018	MEHNAZ KOUL	GE616(27) ITCD616(51) HAWD616(50;29) SPIG616(77) SOC617(23;28)		
69	32560- NW-2018	QAZI SAULIHEAN	GE616(27) ITCD616(39) HAWD616(43;14) HCTG616(48;15) LSM617(12;25)		
70	32277- NW-2018	AMREEN	GE616(12) ITCD616(47) HAWD616(37;20) SPIG616(45) SOC617(15;25)		
71	71366-W- 2016	ENJEELA AKHTAR	GE616(AB) ITCD616(AB) HAWD616(AB;15) HCTG616(AB;NA) SOC617(AB;AB)		
72	32584- NW-2018	ASRA SHABIR	GE616(13) ITCD616(32) SSD616(44) HCTG616(44;18) LSM617(6;25)		
73	32574- NW-2018	AFSHANA BASHIR SOFI	GE616(25) ITCD616(47) SSD616(60) HCTG616(48;15) SOC617(14;18)		
74	32279- NW-2018	MANSHAH JAN	GE616(21) ITCD616(48) SSD616(47) PSYG616(41) LSM617(17;18)		
75	32280- NW-2018	BINISH SHAH	GE616(19) ITCD616(42) SSD616(54) PSYG616(36) SOC617(20;24)		
76	32281- NW-2018	UROSHA	GE616(24) ITCD616(44) SSD616(68) PSYG616(50) SOC617(19;27)		
77	32282- NW-2018	RUTBA NISSAR	GE616(26) ITCD616(51) SSD616(48) PSYG616(45) SOC617(16;25)		
78	32284- NW-2018	MEHVISH MANZOOR	GE616(17) ITCD616(36) SSD616(65) HCTG616(35;14) SOC617(20;27)		
79	32285- NW-2018	BASIRA HUSSAIN	GE616(13) ITCD616(41) SSD616(36) TIHG616(36) SOC617(19;19)		
80	32565- NW-2018	PARVEENA SALAM	GE616(12) ITCD616(38) SSD616(41) HCTG616(25;14) SOC617(14;18)		
81	32286- NW-2018	HAFIZA JAN	GE616(25) ITCD616(60) SSD616(71) URLG616(53) SOC617(22;28)		
82	32579- NW-2018	BISMA RASHID	GE616(17) ITCD616(39) SSD616(44) TIHG616(32) SOC617(12;22)		



83	32288-NW-2018	SADIYA JAN	GE616(23) ITCD616(54) SSD616(50) HCTG616(48;21) SOC617(17;24)		
84	32289-NW-2018	BUSHRA YOUSUF	GE616(20) ITCD616(48) SSD616(36) HCTG616(47;14) LSM617(16;24)		
85	32290-NW-2018	MUNAZAH GULZAR	GE616(AB) ITCD616(AB) SSD616(AB) TIHG616(AB) SOC617(AB;AB)		
86	32291-NW-2018	ZAKIYA SHOWKAT	GE616(14) ITCD616(27) SSD616(53) PSYG616(54) SOC617(19;25)		
87	32292-NW-2018	ROUNAQ JAN	GE616(22) ITCD616(38) SSD616(45) HCTG616(42;19) SOC617(13;22)		
88	32293-NW-2018	SABIA FAROOQ	GE616(15) ITCD616(45) SSD616(38) HCTG616(35;14) SOC617(14;18)		
89	32295-NW-2018	INSHA	GE616(27) ITCD616(59) SSD616(63) URLG616(47) SOC617(AB;25)		
90	32296-NW-2018	SEERAT	GE616(23) ITCD616(51) SSD616(47) URLG616(53) SOC617(12;25)		
91	32297-NW-2018	INSHA REHIM	GE616(25) ITCD616(50) SSD616(59) PSYG616(57) LSM617(17;26)		
92	32298-NW-2018	IQRA ZAHOOR SHALLA	GE616(25) ITCD616(51) SSD616(56) PSYG616(50) SOC617(21;20)		
93	32299-NW-2018	NAZIMA RASHID HAJAM	GE616(17) ITCD616(33) SSD616(32) TIHG616(36) SOC617(16;28)		
94	32300-NW-2018	MUMTAZA ALI	GE616(26) ITCD616(59) SSD616(68) URLG616(50) SOC617(22;25)		
95	32303-NW-2018	WAHEEDA BANO	GE616(24) ITCD616(45) SSD616(39) PSYG616(38) SOC617(22;27)		
96	32304-NW-2018	TABISH ASHRAF	GE616(21) ITCD616(57) SSD616(72) HCTG616(50;17) SOC617(25;25)		
97	32566-NW-2018	MARIYA SHAKEEL SHAH	GE616(20) ITCD616(42) SSD616(51) HCTG616(37;19) SOC617(19;27)		

98	32305- NW-2018	TAHIMA FAYAZ	GE616(24) ITCD616(39) SSD616(57) HCTG616(51;17) SOC617(23;27)		
99	32306- NW-2018	NAGEENA BANO	GE616(25) ITCD616(62) SSD616(63) URLG616(50) LSM617(14;26)		
100	32307- NW-2018	TABASUM FAROOQ	GE616(22) ITCD616(33) SSD616(47) PSYG616(33) SR617(14;23)		
101	32308- NW-2018	ZAHIDA	GE616(15) ITCD616(45) SSD616(44) URLG616(53) SOC617(15;12)		
102	32309- NW-2018	SEHRAN MEHRAJ	GE616(30) ITCD616(53) SSD616(81) PSYG616(68) SOC617(25;27)		
103	32310- NW-2018	SAIMA MAJID	GE616(25) ITCD616(50) SSD616(45) HCTG616(37;14) SOC617(17;25)		
104	32311- NW-2018	SUBREENA RASOOL	GE616(18) ITCD616(26) SSD616(41) PSYG616(36) SOC617(12;25)		
105	32312- NW-2018	SHABNAM GAFFAR	GE616(18) ITCD616(36) SSD616(36) URLG616(33) SOC617(7;25)		
106	32313- NW-2018	TABIA BILAL	GE616(20) ITCD616(42) SSD616(51) PSYG616(48) LSM617(12;19)		
107	32567- NW-2018	NIGHAT JAN	GE616(8) ITCD616(17) SSD616(33) TIHG616(15) SOC617(9;27)		
108	32315- NW-2018	RUKHSANA AKHTER	GE616(20) ITCD616(38) SSD616(51) TIHG616(30) SOC617(17;27)		
109	32316- NW-2018	BISMA RASOOL	GE616(18) ITCD616(38) SSD616(47) HCTG616(49;15) SOC617(20;28)		
110	32317- NW-2018	TANIA NISSAR	GE616(25) ITCD616(36) SSD616(54) HCTG616(47;21) LSM617(13;26)		
111	32318- NW-2018	MANSHA LATIF	GE616(21) ITCD616(36) SSD616(42) URLG616(51) SOC617(20;28)		
112	32319- NW-2018	BUSHRA FAROOQ	GE616(25) ITCD616(48) SSD616(60) TIHG616(30) SOC617(21;25)		

113	32320- NW-2018	IQRA AMIN	GE616(26) ITCD616(57) SSD616(53) URLG616(48) SOC617(23;28)		
114	32321- NW-2018	HINAN ASHRAF	GE616(15) ITCD616(39) SSD616(32) HCTG616(48;12) LSM617(12;24)		
115	32322- NW-2018	RUTEeba YASEEN BHAT	GE616(20) ITCD616(33) SSD616(38) HCTG616(36;19) SOC617(15;18)		
116	32323- NW-2018	AIMAN FAROOQ			
117	32324- NW-2018	SIMRAN AYOUB	GE616(29) ITCD616(50) SSD616(57) HCTG616(48;15) SOC617(21;16)		
118	31710- nw-2017	FARHANA JAVED	GE616(24) ITCD616(42) SSD616(38) HCTG616(51;15) SOC617(12;27)		
119	32327- NW-2018	ISHRAT TARIQ	GE616(24) ITCD616(62) MGKD616(57) HCTG616(42;20) LSM617(14;25)		
120	32328- NW-2018	ISHRAT AKHTER	GE616(25) ITCD616(44) MGKD616(63) HCTG616(51;22) SOC617(22;25)		
121	32237- NW-2018	RAFIA MANZOOR	GE616(14) ITCD616(41) MGKD616(39) PSYG616(27) SOC617(14;18)		
122	31582- nw-2017	MASARAT	GE616(26) ITCD616(56) TWCD616(45) SPIG616(74) SOC617(17;28)		
123	32239- NW-2018	MEEMA JAN	GE616(20) ITCD616(48) CMPD616(69) SPIG616(62) SOC617(18;27)		
124	31198- nw-2016	MARIFAT FIDDA	GE616(14) ITCD616(36) SSD616(41) HCTG616(47;24) SOC617(9;25)		
125	31572- nw-2017	AZRA MANZOOR	GE616(24) ITCD616(41) TWCD616(42) SPIG616(57) SOC617(22;20)		

Serial No	Reg.No	Name	Result Details	Course Outcome <b>C<sub>o</sub></b>	Programme Outcome <b>P<sub>o</sub></b>
01	32504-NW-2018	SADIYA ALTAF	GE616(30) GPBD616(42;28) ILD616(45;20) PBT616(45;26) SR617(24;26)	<b>Co(GE)=85.70%=L3</b>	
02	32505-NW-2018	HUBAB ZAINAB	GE616(26) GPBD616(35;28) ILD616(29;20) PBT616(26;20) SR617(15;27)		
03	32506-NW-2018	NAZIMA QAZIM	GE616(29) GPBD616(46;29) ILD616(46;20) PBT616(44;26) SR617(22;24)		
04	32508-NW-2018	YUMNA FATIMA	GE616(29) GPBD616(57;29) ILD616(53;19) PBT616(49;28) SR617(27;26)		
05	32509-NW-2018	SADAF UL HASSAN	GE616(7) GPBD616(19;24) ILD616(21;18) PBT616(16;12) SR617(12;21)	<b>CO(GPBD)=70.70%=L3</b>	<b>** Po = 68.36% = Grade B</b>
06	32514-NW-2018	BUSHRA RASHID	GE616(29) GPBD616(42;25) ILD616(58;18) FDMD616(58;28) STH617(18;29)		
07	32515-NW-2018	MAHAK JAN	GE616(28) GPBD616(34;25) ILD616(25;18) FDMD616(39;27) STH617(12;25)		
08	32516-NW-2018	NUSRAT JAN	GE616(26) GPBD616(32;24) ILD616(25;17) FDMD616(45;25) STH617(17;25)		
09	32518-NW-2018	SHUGUFTA SIDEEQ	GE616(26) MCAD616(38;21) GPBD616(44;24) ILD616(47;20) SR617(26;23)		
10	32519-NW-2018	SAYIMA AKHTER	GE616(22) MCAD616(26;20) GPBD616(45;24) ILD616(35;18) SR617(23;24)	<b>CO(ILD)=68.50%=L2</b>	
11	32521-NW-2018	INSHA	GE616(19) MCAD616(24;17) GPBD616(26;24) ILD616(32;17) SR617(18;24)		

12	32523-NW-2018	AIMAN MUSHTAQ	GE616(26) MCAD616(27;24) GPBD616(32;24) ILD616(38;18) SR617(26;25)		
13	32524-NW-2018	BARIYA NAZIR	GE616(25) MCAD616(24;23) GPBD616(32;24) ILD616(38;20) SR617(26;24)		
14	32525-NW-2018	HUMMERAH GULL	GE616(24) MCAD616(41;28) GPBD616(43;29) ILD616(46;22) SR617(26;26)		
15	32526-NW-2018	IFRA SHOWKAT	GE616(29) MCAD616(35;22) GPBD616(41;25) ILD616(41;20) SOC617(25;27)		
16	32532-NW-2018	AABIROO NAZIR	GE616(28) MCAD616(35;23) GPBD616(46;27) ILD616(49;26) SOC617(22;27)		
17	32573-NW-2018	TAHIRA RAHIM	GE616(26) MCAD616(35;24) GPBD616(42;27) ILD616(47;25) SOC617(21;25)	<b>CO(PBTD)=64.80%=L2</b>	
18	32559-NW-2018	BARKAT UL NISA	GE616(28) MCAD616(26;20) GPBD616(38;24) ILD616(20;23) SR617(19;21)		
19	32561-NW-2018	NAZIMA FAROOQ	GE616(30) MCAD616(25;19) GPBD616(41;24) ILD616(42;24) SR617(25;24)		
20	32563-NW-2018	TALMEEZ FATIMA	GE616(29) MCAD616(28;17) GPBD616(41;24) ILD616(53;25) LSM617(17;19)		
21	32633-bc-2013	SHAFEEQA AHAD	NA		
22	32116-nw-2017	ULFAT JAN	GE616(27) MCAD616(33;23) GPBD616(24;24) ILD616(37;20) SR617(28;25)	<b>CO(SR)=52.10%=L2</b>	

### CONCLUSION

The OBL implementation of CO and PO attainment has been explored for Product Skill Development subject that were offered to all undergraduates Students. Two methods have been incorporated which is direct method and segregated method. The direct method implies that the CO attainment directly reflects the PO attainment. On the



other hand, the segregated method implies each individual component in the assessment is mapped to its respective CO and PO and shall be assessed in segregated manner. CO & PO attainment incorporating direct measurement and segregated measurement exhibit varying result. The segregated method is more sensitive towards identifying the issues, which affect attainment of CO and PO.

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