

Evaluation of program outcome is based on the course outcomes. The COs are defined in Table 2.2.1

**Table 2.2.1 Course Outcomes**

Sr.No.	COURSE CODE AND COURSE TITLE	Course Outcomes At the end of course, Student will be able to
1	CM-15001 CONSTRUCTION EQUIPMENT AND MACHINERY	CO 15001- 1. understand the use of different construction equipment for specific jobs
		CO 15001- 2. calculate the outputs from different machines in a fleet of equipment's
		CO 15001- 3. evaluate useful life of equipment and replacement policy
2	CM-15011 CONSTRUCTION PROJECTS PLANNING AND MANAGEMENT	CO 15011-1. evaluate the time cost trade-off, manpower requirement of construction project
		CO 15011-2. investigate the practical application of project /construction management
		CO 15011-3. apply, monitor and execute the modern project planning and management practices
3	CM-15002 CONSTRUCTION MATERIALS & MATERIALS MANAGEMENT	CO-15002-1 identify advanced construction materials and its application in construction
		CO-15002-2 select and apply various inventory models in construction industry
		CM-15002-3 choose the governmental buying process, MIS and experience field work regarding material
4	CM-15012 CONSTRUCTION TECHNIQUES	CO-15012-1 identify modern construction techniques and processes
		CO-15012-2 prepare action plan for the various construction activities and the corresponding state-of-the-art in techniques
		CO-15012-3 select relevant technique and corresponding construction sequence
5	CM 15005 LABORATORY-I	CO 15005 -1 Select relevant national and International codes for performing new experiments in various laboratories
		CO 15005 -2 exercise hands on experience to develop higher level motor skills
		CO 15005 -3 prepare practical and site visit report for various assigned activities
6	CM(DE)-15008 UNDERGROUND OPENINGS	CO(DE)-15008-1 interpret geological data and determine rock strength properties
		CO(DE)-15008-2 identify various excavation methods for tunnelling, calculate stress-strain analysis and the application to fracture and deformation in rocks
		CO(DE)-15008-3 apply appropriate support system and HVAC
7	CM-16007 LABORATORY-II	CO-16007-1 learn use of various softwares related to construction management
		CO-16007-2 visit projects, prepare and present technical report
		CO-16007-3 analyze and apply solution for complex problems using advanced software
9	CM-16006 OPERATION	CO-16006-1 select appropriate optimization technique

Sr.No.	COURSE CODE AND COURSE TITLE	Course Outcomes At the end of course, Student will be able to
	RESEARCH	CO-1600-2 apply optimization techniques in civil engineering problems
		CO-16006-3 analyze practical application of operation research in construction projects
10	CE-5206 FINANCIAL MANAGEMENT	CO-5206-1 understand different economic concepts
		CO-5206-2 apply knowledge for financing the projects
		CO-5206-3 analyze and evaluate various investment alternatives and strategies
11	CM(DE)-16002 CONSTRUCTION COST DYNAMICS	CO (DE)-16002-1 identify economic analysis of different construction projects
		CO (DE)-16002-2 interpret the importance of risk and its application in construction project
		CO (DE)-16002-3 apply knowledge of construction cost dynamics to bid a project
12	CM(DE)-16002 CONSTRUCTION SAFETY AND HUMAN RESOURCE DEVELOPMENT	CO (DE)-16002-1 identify various construction activities prone to accidents and its data collection
		CO (DE)-16002-2 prepare action plan to prevent accidents on construction projects
		CO (DE)-16002-3 demonstrate competence in development and problem-solving in the area of HR management
13	CM(DE)-15001 PROFESSIONAL PRACTICES IN CONSTRUCTION(ELECTIVE)	CO (DE)-15001-1 identify important provisions in various construction contract formats
		CO (DE)-15001-2 understand importance of various provisions in Indian Contract Act
		CO (DE)-15001-3 prepare valuation report for residential building
14	CM(DE)-15001 GEOGRAPHIC INFORMATION SYSTEM	CO (DE)-15001-1 understand fundamentals of remote sensing
		CO (DE)-15001-2 understand GIS
		CO (DE)-15001-3 apply knowledge of GIS to construction projects
15	CM-15004 PROBABILITY AND DATA ANALYSIS	CO -15004-1 apply fundamental concepts in exploratory data analysis to civil engineering problems
		CO -15002-2 interpret the classical inference and hypothesis testing
		CO -15004- 3 apply various statistical techniques to civil engineering projects
16	CM(DE)-16001 SUSTAINABLE CONSTRUCTION	CO (DE)-16001-1 identify various concepts of sustainable construction
		CO (DE)-16001-2 apply sustainability to project planning
		CO (DE)-16001-3 choose appropriate sustainable materials and renewable energy techniques for civil engineering projects
17	CM-16004 DISSERTATION PHASE-I	CO -16004-1 identify and carry out research in key areas of construction and management
		CO -16004-2 analyze data collected and interpret the same
		CO -16004-3 develop conclusions based on the analysis which are useful to the society at large
18	CM(DE)-15008 QUALITY MANAGEMENT AND MIS IN CONSTRUCTION	CO (DE)-15008-1 learn and apply appropriate techniques, resources and software to solve complex engineering problems related to quality in construction
		CO (DE)-15008-2 develop business ethics, professional integrity and social responsibility along with introspection skills and positive outlook for taking corrective measures based on external feedback
		CO (DE)-15008-3 apply the concepts of information systems its implementation, control and system audit

<b>Sr.No.</b>	<b>COURSE CODE AND COURSE TITLE</b>	<b>Course Outcomes</b> At the end of course, Student will be able to
19	CM(DE)-15008 SUSTAINABLE AND URBAN PLANNING	CO (DE)-15008-1 identify application of sustainability and urban development
		CO (DE)-15008-2 apply experimental experience to interact directly with the community clients
		CO (DE)-15008-3 apply sustainability to urban planning
21	ML-15001 RESEARCH METHODOLOGY	CO -15001-1 conduct research in a systematic way
		CO -15001-2 solve and analyze data and results
		CO -15001-3 develop technical writing and presentation skill
22	ML- 15002 HUMANITIES	CO - 15002-1 demonstrate professional ethics, work culture and understanding of responsibility to contribute to community for sustainable development of society
		CO - 15002-2 establish framework to develop an aesthetic appreciation for fine arts
		CO - 15002-3 conduct research and communicate about culture and philosophy and to access and manage information to prepare their work effectively
23	ML-15004 INTELLECTUAL PROPERTY RIGHTS	CO -15004-1 exhibit effective communication skills with equal expertise to communicate with engineers and with the community at large
		CO -15004-2 understand the legal issues that they encounter are often related to protection of intellectual property in form of copyrights, patents, trade secrets and trademarks
		CO -15004-3 examine E-commerce contract law and other legal issues that are mainly related to privacy of individually identifiable records
24	LL-15002 LIBERAL LEARNING	CO -15002-1 develop capacity to understand multidisciplinary sciences in a friendly manner
		CO -15002-2 create openness to diversity
		CO -15002-3 acquire ability to lead and examine life and value the need for life learning
25	CM(DE)-16002 INFRASTRUCTURE DEVELOPMENT	CO (DE)-16002-1 explore the important aspects of infrastructure planning, designing and maintenance
		CO (DE)-16002-2 develop knowledge of alternative institutional and financing arrangements and to provide participants with skills that are needed to engage fully as policy officials in projects(eg.PPP) from planning, design, implementation and monitoring
		CO (DE)-16002-3 interpret the policy and strategic issues in transport projects and the implementation challenges
26	CM-16008 DISSERTATION PHASE-II	CO -16008-1 identify and carry out research in key areas of construction and management
		CO -16008-2 analyze data collected and interpret the same
		CO -16008-3 develop conclusions based on the analysis which are useful to the society at large

Table 2.2.1 illustrates the correlation between course outcomes for individual course with corresponding

**Table 2.2.1.1 Courses and POs**

<b>Sr. No.</b>	<b>Course Type /code</b>	<b>Course code and course title</b>	<b>Course Outcomes</b>	<b>Programme Outcomes</b>
1	PCC	CM-15001 CONSTRUCTION EQUIPMENT AND MACHINERY	CM-15001-1 understand the use of different construction equipments for specific jobs	PO1,PO3,PO4
			CM-15001-2 calculate the outputs from different machines in a fleet of equipments	PO1,PO4,PO5
			CM-15001-3 evaluate useful life of equipment and replacement policy	PO1,PO4,PO5
2	PCC	CM-15011 CONSTRUCTION PROJECTS PLANNING AND MANAGEMENT	CM-15011-1 evaluate the time cost trade-off, manpower requirement of construction project	PO1,PO4,PO5
			CM-15011-2 investigate the practical application of project /construction management	PO1,PO3,PO4
			CM-15011-3 apply, monitor and execute the modern project planning and management practices	PO1,PO2,PO3,PO4
3	PCC	CM-15002 CONSTRUCTION MATERIALS & MATERIALS MANAGEMENT	CM-15002-1 identify advanced construction materials and its application in construction	PO1,PO4
			CM-15002-2 select and apply various inventory models in construction industry	PO1,PO4
			CM-15002-3 choose the governmental buying process, MIS and experience field work regarding material	PO1,PO2,PO4
4	PCC	CM-15012 CONSTRUCTION TECHNIQUES	CM-15012-1 identify modern construction techniques and processes	PO1,PO4,PO5
			CM-15012-2 prepare action plan for the various construction activities and the corresponding state-of-the-art in techniques	PO1,PO4,PO5
			CM-15012-3 select relevant technique and corresponding construction sequence	PO1,PO4,PO5
5	LC	CM 15005 LABORATORY-I	CM 15005-1 Select relevant national and International codes for performing new experiments in various laboratories	PO1,PO4
			CM 15005-2 exercise hands on experience to develop higher level motor skills	PO1,PO3,PO4
			CM 15005-3 prepare practical and site visit report for various assigned activities	PO1,PO2,PO3,PO4
6	DEC	CM 15005 Underground Openings	CM 15005-1 interpret geological data and determine rock strength properties	PO1,PO4,PO5

Sr. No.	Course Type /code	Course code and course title	Course Outcomes	Programme Outcomes
			CM 15005-2 identify various excavation methods for tunnelling, calculate stress-strain analysis and the application to fracture and deformation in rocks	PO1,PO4,PO5
			CM 15005-3 apply appropriate support system and HVAC	PO1,PO2,PO4,PO5
7	LC	CM-16007 LABORATORY-II	CM-16007-1 learn use of various softwares related to construction management	PO1,PO2,PO4
			CM-16007-2 visit projects, prepare and present technical report	PO1,PO3,PO4,PO5
			CM-16007-3 analyze and apply solution for complex problems using advanced softwares	PO1,PO2,PO4,PO5
8	PCC	CM-16007 OPERATIONS RESEARCH	CM-16007-1 select appropriate optimization technique	PO1,PO2,PO4,PO5
			CM-16007-2 apply optimization techniques in civil engineering problems	PO1,PO2,PO3,PO4
			CM-16007-3 analyze practical application of operation research in construction projects	PO1,PO4,PO5
9	DEC	CE-5206 FINANCIAL MANAGEMENT	CE-5206-1 understand different economic concepts	PO1,PO2,PO4
			CE-5206-2 apply knowledge for financing the projects	PO1,PO3,PO4
			CE-5206-3 analyze and evaluate various investment alternatives and strategies	PO1,PO4,PO5
10	DEC	CM(DE)-16002 CONSTRUCTION COST DYNAMICS	CM(DE)-16002-1 identify economic analysis of different construction projects	PO1,PO4,PO5
			CM(DE)-16002-2 interpret the importance of risk and its application in construction project	PO1,PO3,PO4
			CM(DE)-16002-3 apply knowledge of construction cost dynamics to bid a project	PO1,PO2,PO4
11	DEC	CM(DE)-16002 CONSTRUCTION SAFETY AND HUMAN RESOURCE DEVELOPMENT	CM(DE)-16002-1 identify various construction activities prone to accidents and its data collection	PO1,PO3,PO4
			CM(DE)-16002-2 prepare action plan to prevent accidents on construction projects	PO1,PO3,PO4,PO5
			CM(DE)-16002-3 demonstrate competence in development and problem-	PO1,PO3,PO4,PO5

Sr. No.	Course Type /code	Course code and course title	Course Outcomes	Programme Outcomes
			solving in the area of HR management	
12	DEC	CM(DE)-15001 PROFESSIONAL PRACTICES IN CONSTRUCTION (ELECTIVE)	CM(DE)-15001-1 identify important provisions in various construction contract formats	PO1,PO2,PO4,PO5
			CM(DE)-15001-2 understand importance of various provisions in Indian Contract Act	PO1,PO3,PO4
			CM(DE)-15001-3 prepare valuation report for residential building	PO1,PO3,PO4
13	DEC	CM(DE)-15001 GEOGRAPHIC INFORMATION SYSTEM	CM(DE)-15001-1 understand fundamentals of remote sensing	PO1,PO3,PO4
			CM(DE)-15001-2 understand GIS	PO1,PO2,PO4
			CM(DE)-15001-3 apply knowledge of GIS to construction projects	PO1,PO2,PO4
14	PSMC	CM-15004 PROBABILITY AND DATA ANALYSIS	CM-15004 -1 apply fundamental concepts in exploratory data analysis to civil engineering problems	PO1,PO4
			CM-15004 -2 interpret the classical inference and hypothesis testing	PO1,PO4
			CM-15004 -3 apply various statistical techniques to civil engineering projects	PO1,PO4,PO5
15	DEC	CM(DE)-16001 SUSTAINABLE CONSTRUCTION	CM(DE)-16001-1 identify various concepts of sustainable construction	PO1,PO2,PO4
			CM(DE)-16001-2 apply sustainability to project planning	PO1,PO4
			CM(DE)-16001-3 choose appropriate sustainable materials and renewable energy techniques for civil engineering projects	PO1,PO2,PO4
16	Dissertation	CM-16004 Dissertation Phase 1 CM-16008 Dissertation Phase 2	CM-16004-1 identify and carry out research in key areas of construction and management	PO1,PO2,PO4,PO5
			CM-16004-2 analyze data collected and interpret the same	PO1,PO2, PO3, PO4,PO5
			CM-16004-3 develop conclusions based on the analysis which are useful to the society at large	PO1,PO3,PO4
17	DEC	CM-16004 Quality Management and MIS in Construction	CM-16004-1 learn and apply appropriate techniques, resources and software to solve complex engineering problems related to quality in construction	PO1,PO2,PO4

Sr. No.	Course Type /code	Course code and course title	Course Outcomes	Programme Outcomes
			CM-16004-2 develop business ethics, professional integrity and social responsibility along with introspection skills and positive outlook for taking corrective measures based on external feedback	PO1,PO4,PO5
			CM-16004-3 apply the concepts of information systems its implementation, control and system audit	PO1,PO4
18	DEC	CM(DE)-15008 Sustainable and Urban Planning	CM(DE)-15008-1 identify application of sustainability and urban development	PO1,PO2,PO4
			CM(DE)-15008-2 apply experimental experience to interact directly with the community clients	PO1,PO3,PO2,PO4
			CM(DE)-15008-3 apply sustainability to urban planning	PO1,PO4
19	MLC	ML-15001 Research Methodology	ML-15001-1 conduct research in a systematic way	PO1,PO4
			ML-15001-2 solve and analyze data and results	PO1,PO2,PO3,PO4
			ML-15001-3 develop technical writing and presentation skill	PO1,PO2,PO3,PO4
20	MLC	ML- 15002 Humanities	ML- 15002-1 demonstrate professional ethics, work culture and understanding of responsibility to contribute to community for sustainable development of society	PO1,PO3,PO4
			ML- 15002-2 establish framework to develop an aesthetic appreciation for fine arts	PO1,PO4
			ML- 15002-3 conduct research and communicate about culture and philosophy and to access and manage information to prepare their work effectively	PO1,PO2,PO3,PO4
21	MLC	ML-15004 Intellectual Property Rights	ML-15004-1 exhibit effective communication skills with equal expertise to communicate with engineers and with the community at large	PO1,PO2,PO3,PO4
			ML-15004-2 understand the legal issues that they encounter are often related to protection of intellectual property in form of copyrights, patents, trade secrets and trademarks	PO1,PO2,PO3,PO4
			ML-15004-3 exhibit effective communication skills with equal expertise to communicate with engineers	PO1,PO3,PO4

Sr. No.	Course Type /code	Course code and course title	Course Outcomes	Programme Outcomes
			and with the community at large	
22	LLC	LL-15002 Liberal Learning	LL-15002-1 develop capacity to understand multidisciplinary sciences in a friendly manner	PO2,PO3,PO4
			LL-15002-2 create openness to diversity	PO1,PO2,PO4
			LL-15002-3 acquire ability to lead and examine life and value the need for life learning	PO1,PO4
23	DEC	CM(DE)-16002 Infrastructure Development	CM(DE)-16002-1 explore the important aspects of infrastructure planning, designing and maintenance	PO1,PO2,PO3,PO4
			CM(DE)-16002 -2 develop knowledge of alternative institutional and financing arrangements and to provide participants with skills that are needed to engage fully as policy officials in projects(eg.PPP) from planning, design, implementation and monitoring	PO1,PO4
			CM(DE)-16002-3 interpret the policy and strategic issues in transport projects and the implementation challenges	PO1,PO2,PO3,PO4

**Assessment of PO by direct Method Table 2.2.2.5 Assessment of PO**

2017-2018					
Course	PO1	PO2	PO3	PO4	PO5
CM 15001- 1	87.68		68.33	97.36	
CM 15001- 2	87.68			97.36	97.36
CM 15001- 3	87.68			97.36	97.36
CM-15002-1	69.41			69.42	
CM-15002-2	69.41			69.42	
CM-15002-3	69.41	81.68		69.42	
CM(DE)-16001-1	83.49	86.66		83.49	
CM(DE)-16001-2	83.49			83.49	
CM(DE)-16001-3	83.49	86.66		83.49	
CM(DE)-15008-1	84.47			84.47	
CM(DE)-15008-2	84.47			84.47	85.04
CM(DE)-15008-3	84.47	87.36		84.47	85.04
CM(DE)-16002-1	66.16			66.16	66.16
CM(DE)-16002-2	66.16		66.16	66.16	



CM(DE)-16002-3	71.05	71.055		71.05	
CM-16006-1	82.88	82.11		82.93	
CM-16006-2	82.88	82.11	84.78	82.93	
CM-16006-3	82.88			82.93	84.75
CM(DE)-16001-1	67.89		70.36	66.89	
CM(DE)-16001-2	67.89		70.36	66.89	68.51
CM(DE)-16001-3	67.89		70.36	66.89	68.51
<b>Attainment Levels</b>	<b>77.66</b>	<b>82.52</b>	<b>71.73</b>	<b>78.91</b>	<b>81.59</b>
<b>2016-17</b>					
CM 15001- 1	72.67		58.32	72.67	
CM 15001- 2	72.67			72.67	79.85
CM 15001- 3	72.67			72.67	79.85
CM-15002-1	70.8			70.09	
CM-15002-2	70.8			70.09	
CM-15002-3	70.8	0		70.09	
CM 15011-1	83.88			83.88	75.39
CM 15011-2	83.88		88.14	83.88	
CM 15011-3	83.88	90.73	88.14	83.88	
CM-15012-1	83.72	83.72		83.72	
CM-15012-2	83.72	83.72		83.72	
CM-15012-3	83.72	83.72		83.72	
CM-16006-1	64.97	66.91		64.97	
CM-16006-2	64.97	66.91	70.82	64.97	
CM-16006-3	64.97			64.97	61.11
CM-15004-1	78.65			78.65	

CM-15004-2	78.65			78.65	
CM-15004-3	78.65			78.65	85.18
CM(DE)-16001-1	91.46	91.46		91.66	
CM(DE)-16001-2	91.46			91.66	
CM(DE)-16001-3	91.66	91.66		91.66	
CM(DE)-15008-1	70.88			70.86	
CM(DE)-15008-2	70.88			70.86	71.73
CM(DE)-15008-3	70.86	74.44		70.86	71.73
<b>Attainment Levels</b>	77.14	73.33	76.36	77.06	74.98

## Assessment of PO by indirect Method

### 1. Industry Feedback

#### Year 2017-18

Sr. No.	Factors	MEAN	out of 100	PO	Average
1	Apply Engineering fundamentals and technical skills effectively	4	80	PO 1	80.00
2	Demonstrate professional ethics	3.8	76	PO 2	76.80
3	Demonstrate effective communication skills	3.4	68	PO 3	76.80
4	Knowledge of contemporary issues	3.8	78	PO 4	76.80
5	Logical and Quantitative Ability	4.2	84	PO 5	78.00

#### Year 2016-17

Sr. No.	Factors	Mean	Out of 100	PO	Average
1	Apply Engineering fundamentals and technical skills effectively	3.8	76	PO 1	78.66
2	Demonstrate professional ethics	3.8	76	PO 2	75.20
3	Demonstrate effective communication skills	3.2	64	PO 3	75.20
4	Knowledge of contemporary issues	4	80	PO 4	75.20
5	Logical and Quantitative Ability	4	80	PO 5	78.00

**Parent's Surveys**

**Year 2017-18**

<b>Sr. No.</b>	<b>Factor</b>	<b>Mean</b>	<b>Out of 100</b>	<b>PO</b>	<b>Average</b>
1	Rate the level of education your ward has received	3.86	77.20	PO 1	73.95
2	Success of the institution in its role to create technical brains of the nation	3.63	72.60	PO 2	73.95
3	Our institute is doing better job than other private institutes	3.60	72.00	PO 3	73.95
4	Your satisfaction about the internal assessment of your ward	3.70	74.00	PO 4	74.07
5	Your satisfaction about the social values included in the present education	3.72	74.40	PO 5	73.95
6	Skills acquired by your ward in this institute	3.67	73.40		

**Year 2016-17**

<b>Sr. No.</b>	<b>Factor</b>	<b>Mean</b>	<b>Out of 100</b>	<b>PO</b>	<b>Average</b>
1	Rate the level of education your ward has received	3.90	78.00	PO 1	74.20
2	Success of the institution in its role to create technical brains of the nation	3.50	70.00	PO 2	74.16
3	Our institute is doing better job than other private institutes	3.60	72.00	PO 3	74.16
4	Your satisfaction about the internal assessment of your ward	3.70	74.00	PO 4	74.25
5	Your satisfaction about the social values included in the present education	3.85	77.00	PO 5	75.50

**Alumni Year 2017-18**

Sr. No.	Factors	Mean	Out of 100	PO	Average
1	F1: Comfortable in training/ probation in your first job	4.71	94.20	PO 1	81.07
2	F2: Comfortable in handling the projects/assignment successfully	4.86	97.14	PO 2	84.05
3	F3: Additional knowledge gained to cope up with the current job challenges	4.80	80	PO 3	78.2
4	F4: Helped in getting higher position	3.75	75	PO 4	74.63
5	F5: Comfortable in pursuing higher studies/research	3.44	68.80	PO 5	80.81
6	F6: Scope for entrepreneurship	3.56	71.11		

**Year 2016-17**

Sr. No.	Factors	Mean	Out of 100	PO	PO %
1	F1: Comfortable in training/ probation in your first job	4.75	95.00	PO 1	81.07
2	F2: Comfortable in handling the projects/assignment successfully	4.75	97.14	PO 2	84.05
3	F3: Additional knowledge gained to cope up with the current job challenges	4.80	80	PO 3	79.05
4	F4: Helped in getting higher position	3.60	75	PO 4	75.66
5	F5: Comfortable in pursuing higher studies/research	3.60	72.00	PO 5	80.81
6	F6: Scope for entrepreneurship	3.50	71.11		

**Indirect assessment Year 2017-18**

	<b>Industry</b>	<b>Alumini</b>	<b>Average</b>	<b>Weight</b>	<b>PO</b>
PO 1	80.00	81.07	80.53	0.1	8.05
PO 2	76.8	84.05	80.42	0.1	8.04
PO 3	76.8	65.36	71.08	0.1	7.11
PO 4	76.8	74.63	75.71	0.1	7.57
PO 5	78	80.81	79.4	0.1	7.94

	<b>Parents</b>	<b>Weight</b>	<b>PO</b>
PO 1	73.95	0.1	7.39
PO 2	73.95	0.1	7.39
PO 3	73.95	0.1	7.39
PO 4	74.07	0.1	7.41
PO 5	73.95	0.1	7.39

	<b>Faculty Contribution</b>	<b>Weight</b>	<b>PO</b>
PO 1	77.27	0.1	7.72
PO 2	77.27	0.1	7.72
PO 3	77.27	0.1	7.27
PO 4	77.27	0.1	7.72
PO 5	77.27	0.1	7.72

<b>Indirect Assessment</b>				
	<b>Faculty Contribution</b>	<b>Parents</b>	<b>Industry &amp; Alumni</b>	<b>Total</b>
PO 1	7.72	7.39	8.05	36.08
PO 2	7.72	7.39	8.04	36.05
PO 3	7.72	7.39	7.11	33.25
PO 4	7.72	7.41	7.57	34.66
PO 5	7.72	7.39	7.94	35.75

**Year 2016-17**

	<b>Industry</b>	<b>Alumini</b>	<b>Average</b>	<b>Weight</b>	<b>PO</b>
PO 1	78.66	81.07	79.87	0.1	7.98
PO 2	75.2	84.05	79.63	0.1	7.96
PO 3	75.2	79.05	77.13	0.1	7.71
PO 4	75.2	75.66	75.43	0.1	7.54
PO 5	78	80.81	79.41	0.1	7.41

	<b>Parents</b>	<b>Weight</b>	<b>PO</b>
PO 1	74.20	0.1	7.42
PO 2	74.16	0.1	7.41
PO 3	74.16	0.1	7.41
PO 4	74.25	0.1	7.42
PO 5	75.50	0.1	7.55

	<b>Faculty Contribution</b>	<b>Weight</b>	<b>PO%</b>
PO 1	31.82	0.1	3.18
PO 2	31.82	0.1	3.18
PO 3	31.82	0.1	3.18

PO 4	31.82	0.1	3.18
PO 5	31.82	0.1	3.18

	Faculty Contribution	Parents	Industry	Total
PO 1	3.18	7.42	7.98	18.58
PO 2	3.18	7.41	7.96	18.55
PO 3	3.18	7.41	7.71	18.3
PO 4	3.18	7.42	7.54	18.14
PO 5	3.18	7.55	7.94	18.67

**Combined Assessment Year 2017-18**

Indirect Assessment					Direct Assessment			Total PO
	Faculty Contribution	Parents	Industry & Alumini	Total	Weight			PO % Attained
PO1	7.7	7.39	8.05	23.14	77.66	0.7	54.32	77.46
PO2	7.7	7.39	8.04	23.13	82.51	0.7	57.75	80.88
PO3	7.7	7.39	7.11	22.2	71.72	0.7	50.2	72.4
PO4	7.7	7.41	7.57	22.68	78.9	0.7	55.23	77.91
PO5	7.7	7.39	7.94	23.03	81.59	0.7	57.11	80.14

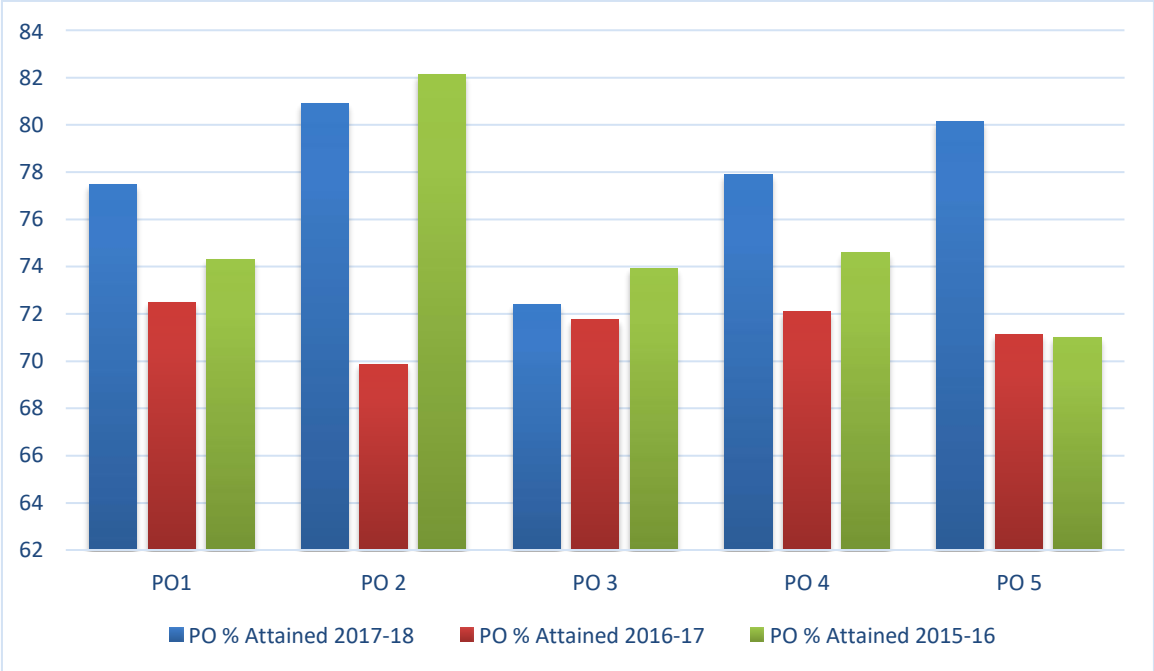


**Year 2016-17**

<b>Indirect Assessment</b>					<b>Direct Assessment</b>			<b>Total PO</b>
	<b>Faculty Contribution</b>	<b>Parents</b>	<b>Industry</b>	<b>Total</b>	<b>Weight</b>			<b>PO % Attained</b>
PO 1	3.18	7.42	7.89	18.49	77.13	0.7	54	72.49
PO 2	3.18	7.41	7.96	18.55	73.32	0.7	51.32	69.87
PO 3	3.18	7.41	7.71	18.3	76.36	0.7	53.45	71.75
PO 4	3.18	7.42	7.54	18.14	77.06	0.7	53.94	72.08
PO 5	3.18	7.55	23.82	34.55	74.98	0.5	37.49	72.04

In similar manner the PO analysis is performed for the year 2015-16 and results are tabulated below.

	<b>PO % Attained 2017-18</b>	<b>PO % Attained 2016-17</b>	<b>PO % Attained 2015-16</b>
PO1	77.46	72.49	74.28
PO 2	80.88	69.87	82.11
PO 3	72.4	71.75	73.90
PO 4	77.91	72.08	74.58
PO 5	80.14	71.12	71.00



**Fig 2.3.2.1: Graph of Comparison of PO**