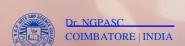
Quality Manual Outcome Based Education

with effect from 2017-18





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OBE MANUAL

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PREFACE

Outcome Based Education is a student-centric instruction model that focuses on measuring student performance through outcomes. Outcomes include knowledge, skills and attitudes. Its focus remains on evaluation of outcomes of the program by stating the knowledge, skill and behavior a graduate is expected to attain upon completion of a programme. OBE is aperformance-based approach, offers a powerful and appealing way of reforming and managing education. The emphasis is on the product, what sort of graduates would be produced, rather than on the educational process. In OBE, the educational outcomes are clearly and definitely specified. Itdetermines the curriculum content and its organization, courses offered, teaching methods and strategies and the assessment processes.

Outcome based education should have a broader perspective of grooming students as good citizens and strengthening democracy. And, this would come only with the cooperation of all teachers when they played an active role. OBE is moving from teacher centric learning to learner centric learning. The teacher and learner both need to be engaged. The teacher has to be an active agency of teaching, which has to deeply engage the learner by allowing space for questions, arguments and making the teaching - learning process lively. Our college graduate should have the combination of different kinds of knowledge, skills and attitudes.



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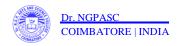
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1. COLLEGE VISION

To instill Character in the minds of the students by providing value Based Education to manifest the perfection already in them and to enable them to excel by providing Quality Higher Education and Research opportunities on par with International Standards.

2. COLLEGE MISSION

To provide Quality Education, Training and Research facilities to the students of our nation and the world. To inculcate ethical, moral and social values in the minds of educators and students and also to motivate and nurture co-operation, tolerance and mutual respect in our nation of diversity.



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3.OBE PROCESS AND FRAMEWORK

There are four levels of outcomes are considered in OBE Processes such as Course Outcomes (CO), Program Outcomes (PO), Program Specific Outcomes (PSO) and Program Educational Objectives (PEO).

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEO refers to specific goals consistent with the institutions mission and vision that are responsive to the expressed interest of programme stakeholders, in particular the requirements of professional bodies. PEOs describe the expected achievements of graduatesin their career and professional life a few years after graduation.

PROGRAMME OUTCOMES (POs)

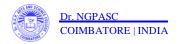
PO refers to the statements that describe what students are expected to know and be able to perform or attain by the time of graduation. These relate to the skills, knowledge, and behavior that students acquire through the programme. It is vital for lecturers and students to visualize the relevance of POs in achieving the overarching PEOs of their programme.

PROGRAM SPECIFIC OUTCOMES (PSOs)

Program Specific Outcomes are the statements that assert what the grandaunts of a specific programme should do what they can able to do.

COURSE OUTCOMES (COs)

Course Outcome is a statement that describes what students are expected to know and be able to perform or attain upon completion of a course. Each CO contributes to the achievement of PO via curriculum design, course delivery and assessment tasks that are most appropriate to attain that CO.



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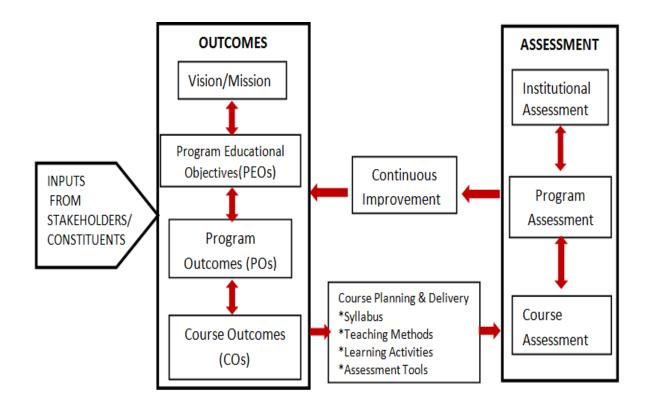
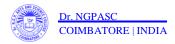


Figure 1: OBE Framework

OBE ADDRESSES THE FOLLOWING

- What the students should be able to do? **OBE**(**Education**)
- How to align outcomes with the syllabus? **OBC(Curriculum)**
- How to make the students to achieve the outcomes? OBLT (Learning and Teaching)
- How to measure the students' success? **OBA(Assessment)**



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3.1. OUTCOME BASED CURRICULUM

Outcome-based education approaches the curriculum decision making based on the competencies students should demonstrate at the end of their educational program, thus the outcomes or competencies dictate the curriculum content and organization, the teaching methods and strategies, the course offered, the educational environment and the assessment strategies. All curriculum and teaching decisions are made based on how best to facilitate the desired final outcome.

Steps for planning and implementing outcome based curriculum:

1. Deciding on the outcomes:

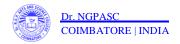
The educational outcomes are clearly identified and unambiguously specified regarding the content, context and competence.

2. Demonstrating outcomes:

The expected outcome should be defined by setting benchmarks for each level of the program. Each benchmark is a skill that must be demonstrated by the student. Benchmarks should tackle and define specifically the goals of the curriculum and verify ways to assess whether students have reached these goals at that level of study.

3. Deciding on contents and teaching strategies:

OBE can be implemented as a whole class models which aim to bring all learners in a classroom up to high levels of learning before proceeding further or by the Flexible models which use flexible grouping, continuous progress, technological approaches and instructional management.



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4. Assessments in OBE:

OBE is driven by assessments that focus on well-defined learning outcomes and not by other factors such as what is taught, the duration taken by the 10 students to achieve the outcomes or which path the students take to achieve their targets.

The outcome-based curriculum is based on following levels,

1. Institution Level

- Vision and Mission of the Institution and Department
- Framework of curriculum

2. Programme Level

• PEOs, POs, PSOs

3. Course Level

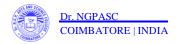
- Course Design (COs)
- Content Delivery (Theory, Practical, Project, Assignment, Tutorial etc....)

3.2. OUTCOME BASED LEARNING AND TEACHING

Outcome-based Teaching and Learning (OBTL) is a student-centered education approach where the programmes intended learning outcomes are explicitly defined for students to achieve. Teaching and learning activities are then carefully designed to facilitate students to achieve these outcomes. The success of OBTL is based on evidences from the assessment results and student learning experience. Periodic reviews of these evidences will lead to continuous improvement of programme quality.

The Outcome based Teaching and learning approach focuses on:

- The alignment of the desired graduate attributes, programme intended learning outcomes and module intended learning outcomes.
- The development of teaching and learning activities in enhancing student learning experiences.
- The design of assessment processes to monitor students' learning progress and the achievement of the desired outcomes and attributes.



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• The collection of stakeholders' feedback for continuous improvement.

Delivery of an Outcome Based Curriculum to the students by providing the,

- Syllabus
- Course Plan
- Lecture Notes
- Learning Styles

3.3. OUTCOME BASED ASSESSMENT

Assessment is one or more processes which is carried out by the institution, that identify, collect and prepare data to evaluate the achievement of course outcomes and program outcomes.

Attainment is the action of achieving a standard result towards accomplishment of desired goals. Primarily attainment is the standard of academic attainment as observed by test and examination result.

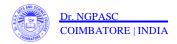
Two types of CO assessment methods are employed in Outcome Based Assessment,

1. Direct Assessment

2. Indirect Assessment

The direct methods (Mark based Assessments) display the student's knowledge and skills from their performance in the continuous internal assessment tests, semester examinations and supporting activities such as seminars, assignments, case study, group discussion, online quiz, mini project etc., These methods provide a sampling of what students know and can do and provide strong evidence of student learning.

The indirect method (**Survey based Assessments**) done through surveys and interviews, it asks the stakeholders to reflect their views on student's learning. The institute assesses opinions or thoughts about graduate's knowledge or skills by different stakeholders



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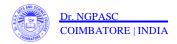
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4. GRADUATE ATTRIBUTES (GAs)

On the successful completion of the programme, the following are the Graduate Attributes.

- Domain Knowledge: Apply the knowledge in the relevant areas of arts, science and Management fields.
- 2. **Problem Analysis:** Identify and analyze the complex problems using the knowledge acquired in various domains.
- 3. **Design/Development of solutions:** Define solutions for complex problems with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- 4. **Conduct investigations of complex problems:** Develop competency to carry out the research with their ability to design and execute the experiment.
- 5. **Society and ethics:** Apply contextual knowledge for societal welfare and commit to professional ethics.
- 6. **Environment and sustainability:** Understand the Environmental factors and focus towards sustainable development.
- 7. **Project management and team work:** Demonstrate knowledge and understanding the principles of Project management in various domains to lead effectively and work as team
- 8. **Communication:** Demonstrate the effective communication skills for interaction with personnel as well as presentation in appropriate forums.
- 9. **Inculcate innovative thinking:** To identify the sources of business opportunity and develop entrepreneurial skills for entrepreneurship development.
- 10. **Lifelong learning:** Recognize the needs to engage in lifelong learning with moral values.





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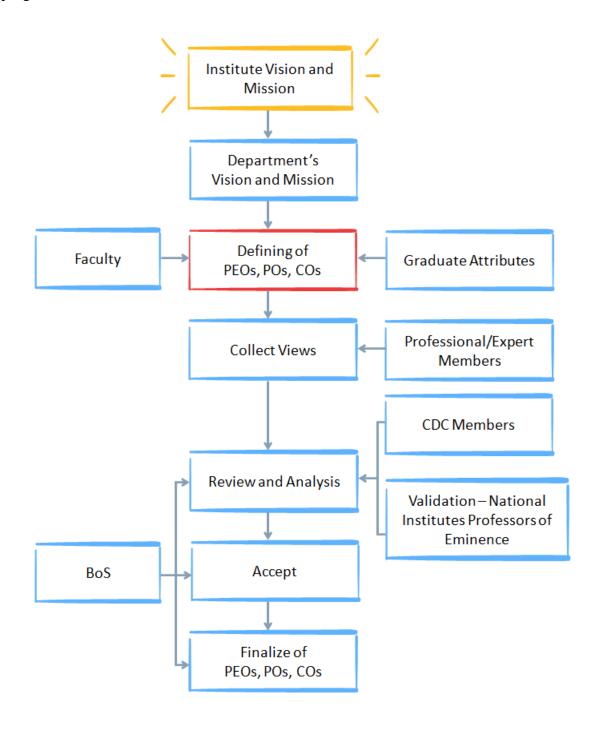
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5. PROCESS TO DEPICT PEOS, POS AND COS OF THE DEPARTMENT

The process steps followed for establishing the Vision, Mission, PEOs, POs and Cos for programmes are illustrated in the flow chart







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6.BLOOM'S KNOWLEDGE LEVELS& ACTION VERBS

Action Verbs to be used for different knowledge level while framing the question paper

Knowledge level		Action Verbs
K1	Remembering	Choose • Define • Find • How • Label • List • Match • Name •
		Omit • Recall • Relate • Select• Show • Tell • What • When •
		Where • Which • Who • Why
K2	Understanding	Classify • Compare • Contrast • Demonstrate • Explain
		• Extend • Illustrate • Infer • Interpret • Outline • Relate
		• Rephrase • Show • Summarize • Translate • Journalize
К3	Applying	Apply • Build • Choose • Construct • Develop
		• Experiment with • Identify • Make use of • Model
		Organize • Plan • Select • Solve • Utilize • Prepare
K4	Analyzing	Analyze • Assume • Categorize • Classify • Compare
		Conclusion • Contrast • Discover • Dissect • Distinguish
		• Divide • Examine • Function • Inference • Inspect • List
		• Motive •Relationships • Simplify • Survey • Take part in • Test
		for • Theme • Journalize
K5	Evaluating	Agree • Appraise • Assess • Award • Choose • Compare
		Conclude • Criteria • Criticize • Decide • Deduct • Defend
		Determine Disprove
		•Importance • Influence • Interpret • Judge • Justify • Mark
		Measure • Opinion • Perceive • Prioritize • Prove • Rate
		• Recommend • Rule on • Select • Support • Solve • Value
		•Journalize •Prepare • Solve
K6	Creating	Adapt • Build • Change • Choose • Combine • Compile •
		Compose • Construct • Create • Delete • Design • Develop
		• Discuss • Elaborate • Estimate • Formulate • Happen
		• Imagine •Improve • Invent • Make up • Maximize
		• Minimize • Modify • Original • Originate • Plan • Predict •
		Propose • Solution • Solve • Suppose • Test • Theory

Table 1: Action Verbs



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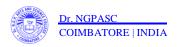
7. RUBRICS

Rubric means "a scoring guide used to evaluate the quality of students' constructed responses". It is a set of criteria for grading assignments, seminar, and class participation and so on.

RUBRICS ASSESSMENT

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	Department of															
Continuous Assessment OBE Rubrics Score Sheet																
Degree: Branch: Semester:																
Subj	ject Code:						Subj	ect: _								
Max. Marks: Internal: External: Total:							_									
			THE			RU	JBRI	CS A	SSESS	MENT	(SEL	ECT A	NY ON	NE)		
		PRACTICAL& LIBRARY CLASS PARTICIPATION (15)(Compulsory)		ON	REPORTS			S PRESENT N			ATIO		/10 / 08 /04			
S. No.	REG. NO	Library	Integration of Knowledge	Interaction& Participation	Demonstration of Knowledge	Organization& Knowledge	Format & Spelling	Reference / Experiments	Demonstration of Knowledge	Format & Spelling	Reference	Content & Coherence	Creativity and Speaking Skills	Duration of Presentation	Total Marks out of: 30	Total Marks out of: 16 / 10 / 08 /04
		6	3	3	3	5	5	5	5	5	5	5	5	5		
1																
2																
3																

Table 2: Rubric Assessment



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8. KNOWLEDGE LEVELS IN QUESTION PAPER

Question paper pattern for UG Courses

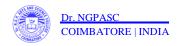
Section	Knowledge level
Section A	K1 level only
Section B	K 1 & K2 level
Section C	K 2 & K3 level

Mark Allotted 50	Pattern	Knowledge Level
(Environmental Studies/	10 Q open choice for 5 Q x	
Human Rights/Women's	10M =50 Marks	
Rights		
General awareness	100 MCQs x 0.5 M = 50	
	Marks	
Advanced Tamil	10 MCQs x 1M = 10 Marks	K1 and K2 only
	5 Q x 3 M = 15 Marks	
	5 Q x 5 M = 25 Marks	
Basic Tamil	5 MCQs x 2M = 10 Marks 5	
	fill in the blanks $x 2M = 10$	
	Marks	
	3 Q x 5 M = 15 Marks	

Question paper pattern for PG Courses

Section	Knowledge Level
Section A	K2
Section B	K2, K3
Section C	K4

Table 3: Knowledge levels in question paper





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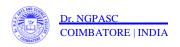
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End Semester Pattern

Section	Marks allotted	Pattern	Knowledge level
Section A	30	5 Q x 6M = 30 Marks (Internal Choice)	K2
Section B	50	5 Q x 10 M = 50 Marks (Internal Choice)	K2, K3
Section C	20	1 Q x 20 M=20 Marks (One Compulsory question from any of the 5 units)	K4

Table 4: Knowledge levels in End Semester question paper





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9. PROGRAMME OUTCOMES ASSESSMENT

Assessment of POs is done in two different methods as given in table.

Assessment Type	Weightage (%)	Tool
Direct	80%	Assignment, Seminar, Unit
		Test, CIA, ESE, Online
		Written test
Indirect	20%	Course End Survey,
		Stakeholder feedback, Program
		Exit Survey, Alumni Survey

Table 5: Methodology adopted for the calculation of PO Assessment

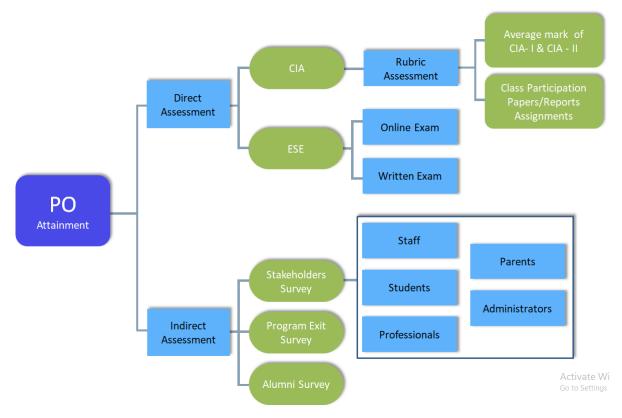
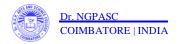


Figure 3: Assessment Process



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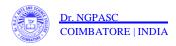
10.CO - PO ASSESSMENT TOOLS

The various direct and indirect assessment tools used to evaluate COs & POs and the frequency with which the assessment processes are carried out are detailed in Table.

Direct Assessment Tools Used For the Evaluation of CO and PO Assessment

CO and PO A	SSESSMENT T	TOOLS			
		Course	Assessment	Tools	Minimum
		Type		Frequency	
			Regular Class Evaluation	Class Test, Group Discussion, MCQ	Minimum of four
		Theory	Internal Evaluation	Average Mark of CIA-I & CIA -II	CIA Two per course
	CO Assessment		2 variation	Seminar/ Assignments	One per course
			End Semeste	One per course	
Direct (80%		Practical	Internal	During Practical Days	Every practical Class
Weightage)			Evaluation	Model Practical Exam	One per course
			End Semeste	One per course	
		Project	Internal Eval	Twice per program	
			End Semeste	r Viva- Voce	One per program
		Internship Program/ Industrial Training	End Semeste	r Viva	One per program
		Lab on Project	Group Projec	et	One per program







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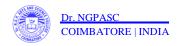
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11.RECOMMENDATIONS BY PO CO COMMITTEE

The attainment of the Programme Outcome is a combined with the outcome of two components, the direct and indirect method of assessment. In most cases, the direct method is given more weightage (about 80%) and the indirect methods (about 20%) are given less weightage. The indirect method involves the 'Exit Survey' filled by the students. The survey may contain questions that are directly related to the Programme Outcomes. In direct method the attainment of the course outcomes, which are already mapped with the Programme Outcomes are cumulated and the average is calculated which in turn contributes to the calculation of the attainment of the Programme Outcome. This may alternatively be simplified by earmarking a few courses as culminating courses and the others as enabling courses.

The attainment of the course outcome of the culminating courses alone can be considered as direct component for the calculation of the Programme Outcome. But this requires a detailed mapping of the questions to the course outcomes. Only with a detailed mapping of the questions to the course outcomes and knowledge level, it may not be possible to calculate the attainment of the Programme Outcome effectively using the direct method. Since the implementation of Outcome-based Education is in a rudimentary stage, it is recommended to consider both direct and the indirect methods (Exit Survey) to calculate the attainment of the Programme Outcome. Further, it is recommended that the process of microlevel mapping of the questions with the course outcomes, calculation of attainment of the course outcomes and classification of culminating courses shall be done in the forthcoming academic year i.e. 2020 - 2021.



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12.CO - PO ATTAINMENT METHODOLOGY

CO Attainment - Course Level

Direct Method of CO Assessment (Mark Based) Weightage: 80%

<u>Rubrics for Attainment of COs through CIA & ESE</u> (For the Batches 2017- 2020 & 2018 -2021)

Attainment Level - 1:

50 % students scoring more than (40% for UG) and (50% for PG) marks out of the relevant maximum marks is considered to be attainment of "1"

Attainment Level - 2:

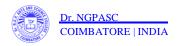
60 % students scoring more than (40% for UG) and (50% for PG) marks out of the relevant maximum marks is considered to be attainment of "2"

Attainment Level - 3:

70 % students scoring more than (40% for UG) and (50% for PG) marks out of the relevant maximum marks is considered to be attainment of "3"

Table 1 shows sample process of computing CO attainment in Direct Method for the CIA & ESE $\,$

			Course	Cou	ırse Co	ode 1	Cou	rse Co	ode 2	Cot	ırse Co	ode 3
S.	Register	Name	COs				C	O1 − C	O5			
No	No	1 varie	Target	3	3	3	3	3	3	3	3	3
			Marks	Int	Ext	Total	Int	Ext	Total	Int	Ext	Total
1												
2												
•												
60												
Attain	ıment Calcı	ılation (Direct Me	thod)								
No	. of students	register	ed for the	60		60	60		60	60		60
	No. of	students	attended	60		60	60		60	60		60
	No. of st	udent go	t >= 40%	45		52	48		50	40		39
	% of s	student g	ot>=40%	75%		87%	80%		83%	67%		65%
CO Attainment in CIA & ESE			3		3	3		3	2		2	
weightage				25		75	25		75	25		75
CO attainment as weightage			0.75		2.25	0.75		2.25	0.5		1.5	
	CO Attainm	ent for t	he course		3			3			2	



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Indirect Method of CO Assessment: (Survey Based) - Weightage: 20%)

Rubrics for Attainment of COs through Course End Survey

Attainment Level - 1:

50% students giving more than 3 is considered to be attainment of "1"

Attainment Level - 2:

60% students giving more than 3 is considered to be attainment of "2"

Attainment Level - 3:

70% students giving more than 3 is considered to be attainment of "3"

Table 2 shows sample process of computing CO attainment in Indirect Method

S. No	Course Code	Course Name	CO Average from Course Exit Survey	CO Target	CO Attainment through course end survey
1			81	3	3
2			72	3	2
3			76	3	2
4			80	3	3

Table 3 shows sample process of computing CO attainment (Direct Assessment 80% + Indirect Assessment 20%)

			CO	CO				Whether
			Attained	Attained	Direct	Indirect	Overall	CO
S.	Course	Course	through	through	Assessment	Assessment	CO	Attained /
No	Code	Name	Direct	Indirect				Not
			Assessment	Method	(80%)	(20%)	Attainment	attained
			(From	(From				11
			Table1)	Table2)				= overall
1			3	3	2.4	0.6	3	Attained
2			3	2	2.4	0.4	2.8	Attained
3			2	2	1.6	0.4	2.0	Attained
4			2	3	1.6	0.6	2.2	Attained

Over all Attainment of CO = (0.8*3) + (0.2*3) = 2.4 + 0.6 = 3



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PO Attainment – Programme Level

Overall PO Attainment (Overall PO calculation = 80% weightage for direct attainment and 20% weightage for indirect attainment)

Master Table - PO Attainment

Semester	Course	CO	PO1	PO2	PO3	PO4	PO5
	Code and	Attainment					
	Name	from Table 3					
		Target	3	3	3	3	3
		3	3				
I		2.8	2.8				
		2.0	2.0				
		2.2	2.2				
II							
	Dire	ect Attainment	2.5				
Indire	ct Attainment	(Program Exit Survey)	3				
	Over	all Attainment	2.6				
	PO Atta	inment(A/NA)	A				

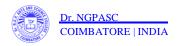
Direct attainment of PO1= (3+2.8+2.0+2.2)/4 = 2.5

Over all Attainment of PO1 = (0.8*2.5) + (0.2*3) = 2.6.

Note:

CO - PO Attainment Calculation Based on CO-PO Articulation Matrix

- 1. High correlation (S Strong) = CO Attained * 1
- 2. Medium Correlation(M) = CO Attained *0.67
- 3. Low Correlation (L)= CO Attained*0.33



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13.Action Taken Report (ATR)

Actions taken based on the results of evaluation of each of the POs

Faculty		Department	
Batch		Academic Year	
POs	Target Level	Attainment Level	Observations
PO1	3	2.9	PO Attained
PO1:			
Actions/Suggestion	s:		
PO2	3	2.8	PO Attained
PO2:		1	
Actions/Suggestion	s:		
PO3	3	2.5	PO Attained
PO3: Actions/Suggestion	s:		
PO4	3	2.7	PO Attained
PO4:			
Actions/Suggestion	s:		
PO5	3	2.7	PO Attained
PO5: Actions/Suggestion	s:		

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14.COURSE END SURVEY

SAMPLE

Degree &	Regulation
Branch	
Course Name	Course Code
Course	Semester
Instructor	&Class
Designation	Academic
	Year

Course Outcome:

CO1: Understand basics of PHP

CO2: Learn functions and objects in PHP.

CO3: Understand working with MySQL database using PHP.

CO4: Learn fundamental concepts of Python language

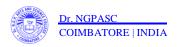
CO5: Remember the core functions and techniques used in Python

Rate the understanding level of the following (Tick the appropriate box)

S. No	СО	Questions	Excellent (4)	Good (3)	Moderate (2)	Fair (1)
1	CO1.1					
2	CO1.2					
3	CO2.1					
4	CO2.2					
5	CO3.1					
6	CO3.2					
7	CO4.1					
8	CO4.2					
9	CO5.1					
10	CO5.2					
Any oth	er feedbac	ck/Suggestions				

CO1.1	CO1.2	CO2.1	CO2.2	CO3.1	CO3.2	CO4.1	CO4.2	CO5.1	CO5.2
CO1Average:		CO2Av	erage:	CO3Ave	erage:	CO4 Av	erage:	CO5Ave	erage:

Date: Name of Student Signature of the Student



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COURSE END SURVEY (INDIRECT ANALYSIS)

Degree &	COURSE END SURVET (I	Regulation	
Branch			
Course Name		Course Code	
Course		Semester	
Instructor		&Class	
Designation		Academic Year	

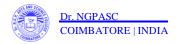
S. No.	Register No	Name	CO1	CO2	CO3	CO4	CO5
		SUM					
		AVERAGE					
	PERCE	ENTAGE OF COURSE					
		OUTCOME					

Course	Inctminator	Cianature
Course	Instructor	Signature

HOD

Note:

- SUM = Total marks given by all students for CO1
- Average = SUM / Total No. Of students
- Percentage of CO = (SUM/ (Total No. of students*4)) *100



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15.PO ATTAINMENT THROUGH PROGRAMME EXIT SURVEY Sample

PROGRAMME EXIT SURVEY FORM

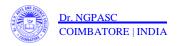
(To assess POs)

Student Name		Roll/Reg. No	
Programme	Commerce Banking and Insurance	Batch	2017-2020

Please tick ($$) Appropriately							
SI. No.	To what extent do you feel have learnt and will be able to do the following (which are the POs and PSO of the Program)	Very Good (4)	Good (3)	Average (2)	Poor (1)		
1	Question related to PO 1						
2	Question related to PO 2						
3	Question related to PO 3						
4	Question related to PO 4						
5	Question related to PO 5						
Any other feedback/Suggestions							

Date

Signature of the Student





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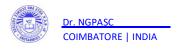
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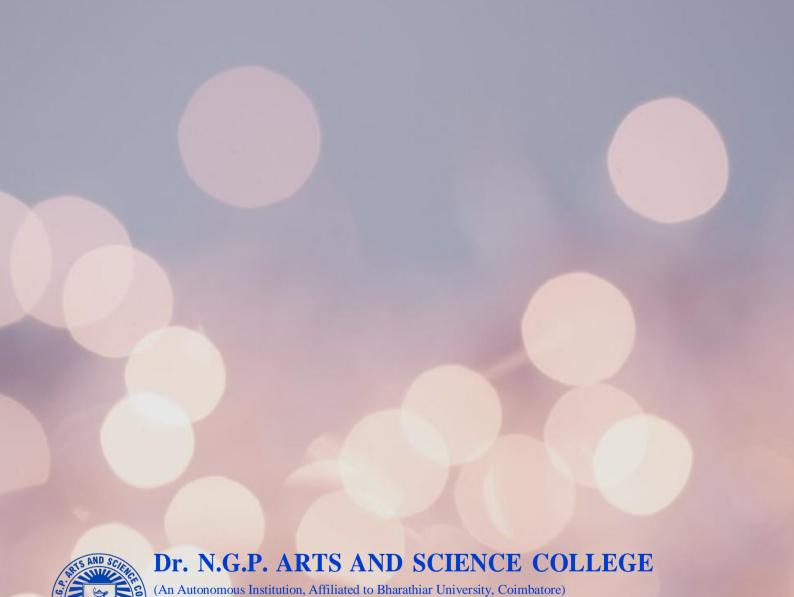
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Program Exit Survey – (Indirect Analysis)

	 (
Faculty	Academic	
	Year	
Degree &	Batch	
Branch		

D. II NI.	No Call Call Land	POs					
Roll No.	Name of the Student	PO1	PO2	PO3	PO4	PO5	
1		4	3	3	3	3	
2		3	4	3	3	4	
3		4	3	2	2	3	
		3	3	4	3	4	
		3	3	3	3	3	
		4	2	3	2	2	
		1	1	1	1	1	
62		2	3	3	4	3	
Count	2	11	15	7	16	9	
of	3	17	27	19	25	31	
Survey Scale Values	4	27	10	23	4	7	
L	Values of PO	* Target Attainment level is 2 and above *Only Survey Scale values of 2, 3 and 4 will be considered.					
(b) No. of Survey scale values 2,3		55	52	49	45	47	
PO Attainment value in %= (b)/Total Students		93	88	83	76	80	
PO Atta	inment through Program	3	3	3	3	3	





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