



# ST FRANCIS DE SALES COLLEGE

Permanently Affiliated to Bangalore University || AICTE Approved Electronic City, Bengaluru - 100

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## A FRANSALIAN INSTITUTE OF HIGHER LEARNING

### OBE PO/CO Attainment

OBE Team

1. IQAC
2. Academic Council
3. Exam Cell

### Graduate Attributes

Graduate attributes that the students have to develop during the process of graduation. The graduate attributes we as institute have decided:

1. **The first graduate attribute** that the college has to aboard is **intellectual rigour**. Intellectual rigour is commitment to excellence and intellectual activities including predictive judgement. Hence, the students have to incorporate this intellectual rigour during the process of graduation.
2. **The second graduate attribute** is that every student is to become a **creative and critical thinker** through which the students become effective problem solver a person who will be able to analyse evidence based thinking to conceive innovative responses to the future challenges.
3. **The third graduate attribute is team work**. Every student will be able to work in a team as a member and as a leader in a team preferable in a multi-disciplinary setting. Through life skills seminars for example, we see students' ability to work as an individual and as a team.
4. **The fourth graduate attribute is the digital capability**. Every student will be able to work in a digital competent society and will competent enough to face the challenges of the digital capability. Through various seminars like capacity building programmes, webinar seminars, we form students to be competent digitally.
5. **The fifth graduate attribute is ethical practices**. All the students while they are here pursuing their degrees or get their graduation to move they have the commitment to ethical standards.

6. **The sixth attribute is cultural competence.** Our students need to develop an ability to interact affectively and communicate with people of other cultures. Our institute is multi-cultural and multi-lingual and ethnic. We teach our students to be culturally tolerant and competent. Through organising various cultural fests we teach our students on integrating various cultures and various languages.
7. **Last and the seventh attribute is communication skills.** Our students should be able to develop competence in communicating skills.

**These seven graduate attributes** that every student should possess or develop during their years of studies. These are found in the student handbook that students are aware of their attribute that they have to develop. From here flow the programme outcomes, programme specific outcomes, course attainment and course outcome.

### **Outcome based Education**

An outcome based education is what the students should be able to do at the end of a programme or a course or instructional unit. It provides an effective interaction among the stakeholders. It is an approach to education in which decisions about the curriculum and instruction are driven by the exit and learning outcomes that the students display at the end of the programme. This approach is taken from Anderson-Bloom's taxonomy. Here we talk about different dimensions of learning: Cognitive, affective and psychomotor and spiritual.

In talking about cognitive process, **Anderson/Bloom's Taxonomy** talks about in stages:

1. Remembering
2. understanding,
3. applying,
4. analysing,
5. evaluating and
6. Creating.

#### **Categories of knowledge:**

1. Factual,
2. Conceptual,
3. Procedural,

#### 4. Metacognitive

Based on this theory, programme outcomes, programme specific outcomes, course attainment and course outcome are designed. Through the Programme Outcomes describe what the graduating student should be able to do at the end of programme.

Programme outcome of Undergraduate Progress enables the students to develop the following:

1. Critical thinking
2. Effective communication
3. Social Interaction
4. Effective citizenship
5. Ethics
6. Environment and sustainability

**Programme Specific Outcomes (PSOs)** describe what the students are expected to know and be able to do at the time of graduation. Programme outcomes and Programme Specific Outcomes have targets. Any gap in them should have a closure either by enhancing the targets or by planning suitable improvements in all the relevant activates to increase the actual attainment.

Program Specific Outcome (PSOs) - PSOs are goals that describe what the student graduating from BCA program are expected to know and will be able to do.

PSO1 – Demonstrate strong technical skills in the area of logical thinking, software programming and data structures

PSO2 - Demonstrate strong technical skills in the area of networking, databases and hardware architecture.

PSO3 – Develop industry ready students in the area of computer programming, networking and databases designing.

PSO4 – Demonstrate professional expertise in computer programming, database designing and, innovatively apply knowledge and problem solving skills.



As a follow-up of the course outcomes, the student should be able to understand, apply, explain the concept and explain the application and application. Through this model, computation of CO attainment is made.

**Course Outcome (CO):** Student should be able to understand, apply, explain the concepts present in the course and also should be able to explain the application. The targets for the CO will be set the course instructor at the beginning of the year. At end of every year, CO attainment scores will be checked with the target set at the beginning. If target is not met, will find the areas of improvement and take corrective action. If target is met, revise the new target. The following are the steps followed to measure CO attainment score.

- End Semester Examination is conducted and evaluated by the University. Exam will be conducted for 70 marks and these marks will be taken as it is.
- Continuous Internal Evaluation is done by the Department. Marks for CIA will be 30. CIA marks are calculated based on scores from Assignment, Attendance, Seminar, First Internal examination, and the Model examination.
  - Assignment will be given and evaluated for 5 marks.
  - Attendance will be evaluated for 5 marks. Based on the attendance percentage marks will be decided. 95-100% will be given 5 marks, 90-95 will be given 4 marks.
  - Seminar will be evaluated for 5 marks
  - First internals will be conducted for 35 marks and converted for 5 marks.
  - Model exam will be conducted for 70 marks and converted for 10 marks.

Courses will have chapters and Chapter outcome will be calculated to arrive at course outcome.

Initial target will be set by the course instructor based on complexities of the course and expectation out of this course etc.

	Target %
CO1	90.00
CO2	85.00
CO3	80.00

We will not be able to exactly classify the external examination marks chapter wise, hence we will be equally assigning the marks to all the chapters. In our case the marks scored in external examination was 85. Hence 17 marks shared with each chapters.

	CIA	SEE
CO1	5.20	17
CO2	6.10	17
CO3	5.90	17
CO4	4.90	17
CO5	3.90	17

To complete the CO attainment, we need to combine CIA and SEE to get the final score. As SEE is evaluated for 100 marks that need to be converted for 70 marks (Multiply by 0.7). CIA is already converted for 30 marks in the above table.

	CIA	SEE	CIA (Converted for 30)	SEE (Converted for 70)	Total ( 100 )	Attainment (%)
CO1	5.20	17	5.20	11.90	17.10	85.5
CO2	6.10	17	6.10	11.90	18.00	90
CO3	5.90	17	5.90	11.90	17.80	89
CO4	4.90	17	4.90	11.90	16.80	84
CO5	3.90	17	3.90	11.90	15.80	79

Course Instructor checks with initial goal against each CO and identifies the gaps. If goal is attained new higher goal will be set.

	Initial	Attainment	Gap
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	Target		
CO1	90.0	85.5	(4.5)
CO2	85.0	90	5
CO3	80.0	89	9
CO4	80.0	84	4
CO5	90.0	79	(11)

The negative numbers are given within ( ). Wherever Gaps are identified, we need to take corrective action. It could be more assignments / problems solving / adding more classes in those chapters.

#### Attainment of PSOs and POs

- Attainment of PSOs and POs are done through specific core courses.
- Each course addresses sub set of POs and PSOs at varying levels.
- Strength of mapping can be defined in three levels ( 1 – Low, 2 – Medium, 3- High)
- Several methods can be worked out to define the strength but implementing across institutions and all the courses can be burden.

#### Method of identifying the strength:

If 40% or more class room session addresses specific PO/PSO then we can consider the strength of that PO/PSO as high (3)

If 25% - 39% class room session addresses specific PO/PSO then we can consider the strength of that PO/PSO as medium (2)

If 5% - 25% class room session addresses specific PO/PSO then we can consider the strength of that PO/PSO as low (1)

If <5% class room session addresses specific PO/PSO then we can consider these PO/PSO are not attained.



	POs and PSOs mapping	Course Hours
CO1	PO1,PO4	04
CO2	PSO1, PO1	12
CO3	PSO2, PO3	14
CO4	PSO1, PO1	14
CO5	PSO3,PO3	12
	<b>Total</b>	<b>56</b>

**Course – PO/PSO mapping**

From the above table we know the number of sessions conducted for each of the POs. We identify the strength of each PO as below.

	% sessions devoted to PO	Strength
PO1	30 out of 56 – 53%	3
PO2		0
PO3	26 out of 56 – 46%	3
PO4	4 out of 56 – 7%	1
PO5		0
PSO1	26 out of 56 – 46%	3
PSO2	14 out of 56 – 25%	2
PSO3	12 out of 56 – 21%	1

From our previous data,

	POs and PSOs mapping	Attainment %
CO1	PO1,PO4	85.5
CO2	PSO1, PO1	90
CO3	PSO2, PO3	89
CO4	PSO1, PO1	84
CO5	PSO3,PO3	79

PO & PSO attainment calculation:

- 1) Calculate the average attainment
- 2) Use the following formula to get the actual attainment for PO  
= (Strength of the specific PO / Maximum possible strength) \* average attainment.
- 3) Use the following formula to get the actual attainment for PSO  
= (Strength of the specific PSO / Maximum possible strength) \* average attainment.

	Average Attainment	Weight (Based on Strength)	Attainment %
PO1	$((85.5+90+84)/3) = 86.5$	$=(3/3)*86.5$	86.5
PO2			0
PO3	$((89+79)/2) = 84$	$=(3/3)*84$	84
PO4	85.5	$=(1/3)*85.5$	28.5
PO5			0
PSO1			3
PSO2	14 out of 56 – 25%		2
PSO3	12 out of 56 – 21%		1

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