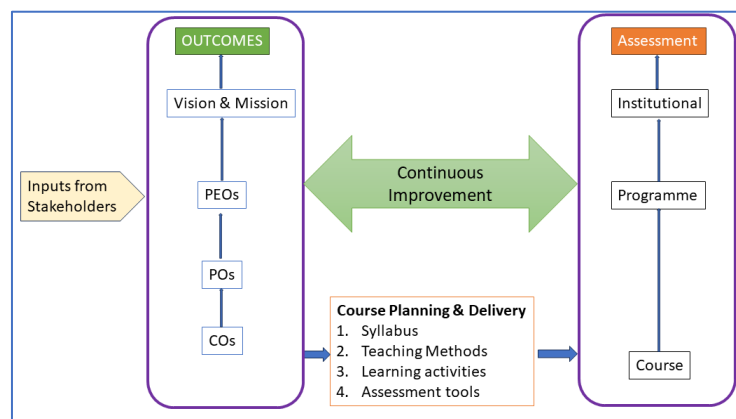


2.6.1. Learning Outcomes: Outcome Based Education Framework @JSSCACS

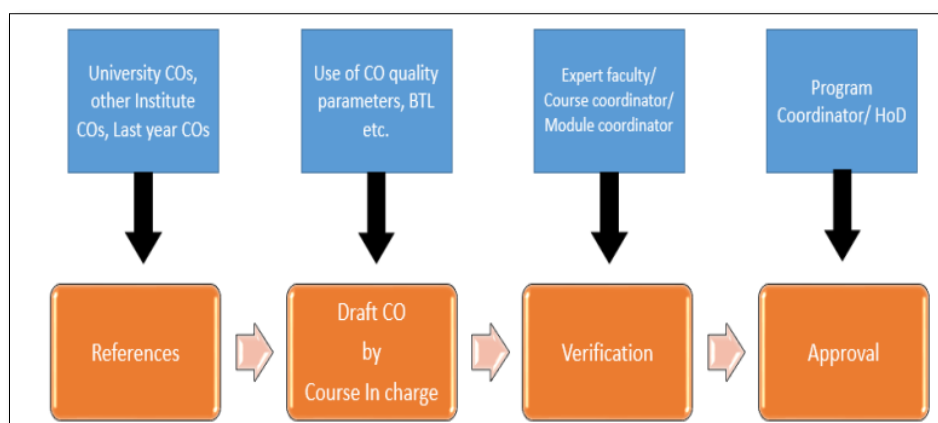
OBE Executive Committee:

The committee for shouldering the responsibilities of fabricating and implementing OBE in the college is constituted. The composition is as given below.

| | |
|---------------------------------|---------------|
| Chief Executive | : Advisor |
| Principal | : Chairman |
| Senior faculty from each domain | : Conveners |
| Controller of Examinations | : Member |
| IQAC Representative | : Member |
| Faculty Nominee | : Coordinator |
| HoDs/Few Nominees | : Members |



Scheme: OBE framework in the institute



Pathway of showing validation of COs

A. CO-PO/PSO MAPPING

I. Contact Hours: Lecture, Tutorial and Practical:

| Level | Contact Hours in Percentage (including Lecture, Tutorial & Practical) |
|---------------|-----------------------------------------------------------------------|
| No mapping(-) | <5% |
| Low(1) | 5-15% |
| Medium(2) | 15-25% |
| High(3) | >25% |

II. Number of Assessment Tools used:

| Level | Assessment tools used to assess the CO |
|----------------|----------------------------------------|
| No mapping (-) | 0 |
| Low (1) | 1 or 2 |
| Medium (2) | 3 |
| High (3) | 4 or more |

III. In some courses COs are mapped to POs based on their relevance to each other and on level of performance of the students

Example of CO-PO/PSO Mapping:

| POs/PSOs--> COs↓ | PO1 | PO2 | PO3 | PO4 | PO5 | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 | PSO6 | PSO7 |
|-----------------------------------------|-----|-----|-----|-----|-----|------|------|------|------|------|------|------------|
| CO1 | 2 | 1 | | 1 | 1 | 2 | 3 | 3 | | 2 | 3 | 1 |
| CO2 | 1 | 2 | 2 | 1 | | 2 | 1 | 1 | | 1 | 2 | 1 |
| CO3 | 1 | 3 | 2 | 3 | 1 | 3 | 2 | 3 | | 1 | 1 | |
| CO4 | 3 | 1 | 2 | 3 | 2 | | 2 | 2 | | | 1 | |
| CO5 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | | 2 | 1 | 1 |
| Average Mapping strength | 1.8 | 1.6 | 1.8 | 1.8 | 1.3 | 2.0 | 2.0 | 2.2 | | 1.5 | 1.6 | 1.0 |
| Overall subject mapping strength | | | | | | | | | | | | 1.7 |

B. Question paper: CO-questions-Blooms Taxonomy Level mappings

| IA Test | Question No | Question | CO Mapped to | BTL | Marks assigned |
|---------|-------------|----------|--------------|------------|----------------|
| C1 | 1a, b & c | | CO1 | K1, K2 | 6 |
| | 1d & e | | CO2 | K2, K3 | 4 |
| | 2a, b, c | | CO1 | K2, K3 | 10 |
| | 3a, b, c | | CO2 | K1, K2, K3 | 10 |
| | 4a, b | | CO2 | K2, K3 | 7 |
| | 4c | | CO3 | K3 | 3 |
| | Assignment | | CO4 | K3, K4 | 5 |
| C2 | 1a, b & c | | CO3 | K2, K3, K4 | 6 |
| | 1d & e | | CO4 | K2, K3 | 4 |
| | 2a, b, c | | CO3 | K1, K2, K3 | 10 |
| | 3a, b | | CO4 | K2, K3 | 6 |
| | 3c | | CO5 | K3 | 4 |
| | 4a, b | | CO5 | K2 | 7 |
| | 4c | | CO5 | K3 | 3 |
| | Seminar | | CO1 | K2 | 5 |

C. Data entry and attainment calculation: Direct assessment (Weightage 80%)

1. Entering the marks secured by students for each question/CO in IA Tests, Assignment and Seminar

| | | ATTAINMENT CRITERIA | 70 | 3 | Threshold % for attainment | | 50 | CO PASSING MARKS OUT OF 70 in ESE | | 21 | Please fill "AB" for Absent and "UR" for Unregistered candidate(s) | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------------|----------------|---------------------------------------------------------------------|----------------------|------|--------------------------------------------------------------|-----|-----|-----------------------------------|---------|-----------|--------------------------------------------------------------------|--------------------------------------------------|-----|-----|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------|---|
| | | Rubrics | 50 | 1 | JSS College of Arts, Commerce and Science, Ooty Road, Mysuru | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Faculty Name: | Dr. N Rajendraprasad | | Program | MSc | | | SUBJECT | Chemistry | | | | | | | | | | | | | | | | | | | | | | |
| | | Prog | MSc | YEAR | I | SEM | 1 | Course CODE | 21CHA13 | SESSION | 2022-23 | Course Title: Essentials of Analytical Chemistry | | | | | | | | | | | | | | | | | | | | |
| | | Attainment for Internal Assessment & End Semester Examination (ESE) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Marks tabulation (question-wise & CO-wise) | | 1a | 1b | 1c | 1d | 1e | 2a | 2b | 2c | 3a | 3b | 3c | 4a | 4b | 4c | Assig | 1a | 1b | 1c | 1d | 1e | 2a | 2b | 2c | 3a | 3b | 3c | 4a | 4b | 4c | Seminar | |
| Sl No. | Reg/UUCMS No. | Name | CO1 | CO1 | CO3 | CO3 | CO4 | CO1 | CO2 | CO3 | CO3 | CO4 | CO3 | CO3 | CO4 | CO4 | CO5 | CO5 | CO3 | CO4 | CO4 | CO3 | CO2 | CO2 | CO4 | CO4 | CO5 | CO5 | CO5 | CO5 | CO1 | |
| 1 | P01BE22S032001 | ABHISHEK SUBRAY SHET | 1 | 1 | | | 1 | 3 | 2 | 3 | | | | | 3 | 1 | 4 | 1 | | 1 | 1 | | | | | 2 | 2 | 14 | 4 | 1 | 2 | 4 |
| 2 | P01BE22S032024 | AFIYA TANZEM | | | | | | 4 | 2 | 3 | 1.5 | | | | | 4 | 1 | | 1 | | | 3 | | | | | | | 4 | | | 4 |
| 3 | P01BE22S032025 | AISHWARYA N R | 1 | 1 | | | | 3 | 1 | | | 1 | | | | | 4 | 0.5 | | | 1.5 | 3 | 1 | 1 | | | | 2 | 1.5 | 2 | 4 | |
| 4 | P01BE22S032026 | AKSHATHA N K | 1 | 1 | | 1 | 2 | 3 | 3 | | | | 2 | 1 | 1 | 4 | 1 | 1.5 | 1 | 1 | 1 | | | | 2.5 | 2 | 1 | 2 | 2 | | 4 | |
| 5 | P01BE22S032027 | AMEER SUHAIL H | 2 | | 0.5 | 1 | 1 | 2 | 2 | 3 | | | 1 | 3 | 1 | 4 | 1 | 1 | 1.5 | | 2 | | | | 2.5 | 1.5 | 1 | 4 | 1 | 1 | 4 | |
| 6 | P01BE22S032002 | AMRUTHA K S | 1 | 1 | 1 | 1 | 1.5 | 1 | 1 | 1 | | | | | | 4 | 2 | | 2 | 2 | 1.5 | | | | 2.5 | 2 | 1.5 | 1.5 | 1.5 | | 4 | |
| 7 | P01BE22S032065 | ANANYA H B | 1 | | | | | 1 | 2 | | | | | | | 4 | | | | | 1 | | | | 1.5 | 1 | 1.5 | | 1 | 4 | 4 | |
| 8 | P01BE22S032028 | ANUSHA C | 1 | 1 | | | 1.5 | 4 | 1.5 | | | | | | | 4 | 2 | | 1 | 1.5 | | 2 | | | | | 2 | 3 | | 4 | 4 | |
| 9 | P01BE22S032029 | ANUSHAR | 1 | 2 | | 1 | 2 | 2 | 0.5 | 0.5 | | | 3 | 1.5 | 1 | 4 | 2 | 1.5 | 2 | 1.5 | 1.5 | 2 | 2 | 1 | 2 | 4 | 2 | 1.5 | 4 | 4 | | |
| 10 | P01BE22S032030 | APOORVA SANDHYA | 1 | 1 | 2 | 2 | | 1 | 1 | | 1 | 2.5 | | | | 4 | 1 | 1.5 | 1 | | 1 | | | | | 2 | | 4 | 1 | 1 | 4 | |
| 11 | P01BE22S032003 | ARCHANA P N | | | | | | 3 | 3 | | | | | | 1 | 4 | 1 | | | | | | | | 3 | 2 | 3 | 1.5 | | 4 | 4 | |
| 12 | P01BE22S032031 | ARPITHA H N | 1 | 1 | | 1 | | 4 | 3 | 2.5 | 1 | | | | | 4 | 1 | | 1 | 1 | | 3 | 1 | 1.5 | 2 | 1 | 2 | 1 | | 4 | 4 | |
| 13 | P01BE22S032032 | ASHWINI A S | 2 | 2 | | 1 | 1 | 2 | 1.5 | | | | 1 | | 1 | 5 | 1 | | 1.5 | | 1 | | | | 2 | 2 | 1 | 1.5 | 2.5 | | 4 | |
| 14 | P01BE22S032004 | BALARAJ S | | | | | | 2.5 | 2 | | | | | | | 4 | | | | | | | | | 2.5 | 2 | 2 | 1 | 2 | 3 | 4 | |
| 15 | P01BE22S032061 | BHANUPRIYA K S | | | 2 | | 1 | 0.5 | 1.5 | 3 | | | 2.5 | | 0.5 | 4 | | 0.5 | 0.5 | | 1 | 2 | | | 2.5 | 0.5 | 3 | 1.5 | | 3 | 3 | |
| 16 | P01BE22S032067 | BHAVANA N | | | 2 | | 1 | 2 | 4 | 3 | 2.5 | | 2 | 3 | 2.5 | 4 | | 1.5 | | 2 | 2 | 1.5 | 1 | 1.5 | 2.5 | 2 | 1 | | | 4 | 4 | |

2. Converting the marks in IA to percentage and entering the end semester examination marks

| Sl No | Reg/UUCMS No. | Name | 1a | 1b | 1c | 1d | 1e | 2a | 2b | 2c | 3a | 3b | 3c | 4a | 4b | 4c | Assig | 1a | 1b | 1c | 1d | 1e | 2a | 2b | 2c | 3a | 3b | 3c | 4a | 4b | 4c | Seminar | Average of %Marks in COs | | | | | ESE | | | | | |
|-------|-----------------|----------------------|-----|-----|-----|-----|-----|------|------|------|------|------|-----|------|------|------|-------|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|---------|--------------------------|------|------|------|------|------|------|------|-------------------------|------|----|
| | | | CO1 | CO1 | CO1 | CO1 | CO2 | CO2 | CO2 | CO2 | CO2 | CO2 | CO3 | CO3 | CO3 | CO3 | CO3 | CO3 | CO3 | CO4 | CO4 | CO4 | CO4 | CO4 | CO4 | CO4 | CO4 | CO5 | CO5 | CO5 | CO5 | CO5 | CO5 | CO5 | CO5 | CO1 | CO2 | CO3 | CO4 | CO5 | Obsr Marks for 70 | | |
| 1 | P01BE22S032001 | ABHISHEK SUBRAY SHET | 50 | 50 | | | 50 | 75 | 66.7 | 100 | | | | | | | | 80 | 50 | | | 50 | | | | | | | | | | | | | 50 | 72.9 | 65.8 | 50 | 69.3 | 44 | | | |
| 2 | P01BE22S0320024 | AFIYA TANZEM | 50 | | | | | 100 | 66.7 | 100 | 37.5 | | | | | | | 80 | 50 | | | 75 | | | | | | | | | | | | | 80 | 50 | 88.9 | 55.8 | 62.5 | 90 | 86 | | |
| 3 | P01BE22S0320025 | AISHWARYA N R | 50 | 50 | | | | 75 | 33.3 | | | 33.3 | | | | | | 80 | | 25 | | 75 | 75 | 33.3 | 33.3 | | | | | | | | | 50 | 50 | 54.2 | 56.7 | 48.3 | 61.7 | 34 | | | |
| 4 | P01BE22S0320026 | AKSHATHA N K | 50 | 50 | | 50 | 100 | 75 | 100 | | | | | 50 | 33.3 | 33.3 | 80 | 50 | 75 | 50 | 50 | | | | | | 62.5 | 66.7 | 33.3 | 50 | 66.7 | 80 | | 50 | 91.7 | 49.3 | 57.5 | 59.3 | 43 | | | | |
| 5 | P01BE22S0320027 | AMEER SUHAIL H | 100 | | 25 | 50 | 50 | 50 | 66.7 | 100 | | | | 25 | 100 | 33.3 | 80 | 50 | 50 | 75 | 50 | 100 | | | | | 62.5 | 50 | 33.3 | 100 | 33.3 | 33.3 | 80 | | 58.3 | 66.7 | 57.7 | 71.9 | 55 | 58 | | | |
| 6 | P01BE22S032002 | AMRUTHA K S | 50 | 50 | 50 | 50 | 75 | 25 | 33.3 | | | | | | | | | 80 | 100 | | 100 | 100 | 75 | | | | 62.5 | 66.7 | 37.5 | 50 | | 80 | | 50 | 44.4 | 90 | 84.4 | 58.5 | 52 | | | | |
| 7 | P01BE22S0320065 | ANANTA H B | 50 | | | | | 25 | 66.7 | | | | | | | | | | | | | 50 | | | | | 37.5 | 33.3 | 37.5 | | 33.3 | 80 | | 50 | 45.8 | 80 | 43.8 | 46 | 17 | | | | |
| 8 | P01BE22S0320028 | ANUSHA C | 50 | 50 | | | 75 | 100 | 50 | | | | | | | | | 80 | 100 | | 50 | | 75 | | 66.7 | | | | | | 50 | 100 | | 50 | 75 | 90 | 63.9 | 76.7 | 37 | | | | |
| 9 | P01BE22S0320029 | ANUSHA R | 50 | 100 | | 50 | 100 | 50 | 16.7 | 16.7 | | | | 75 | 50 | 33.3 | 80 | 100 | 75 | 100 | 75 | | 75 | 66.7 | 66.7 | 25 | 66.7 | | | 100 | 66.7 | 50 | 80 | 66.7 | 45.8 | 67.7 | 69 | 72.7 | 42 | | | | |
| 10 | P01BE22S0320030 | APOORVA SANDHYA | 50 | 50 | 100 | 100 | | 25 | 33.3 | | 25 | 83.3 | | | | | | 80 | 50 | | 50 | | | | | | | 66.7 | | 100 | 33.3 | 33.3 | 80 | | 75 | 29.2 | 59.6 | 58.3 | 62.7 | 50 | | | |
| 11 | P01BE22S0320003 | ARCHANA P N | 50 | | | | | 75 | 100 | | | | | 25 | | | | | | | | | | | | | | | | | | | 75 | 66.7 | 75 | 50 | 80 | 50 | 87.5 | 51.7 | 75 | 67.9 | 13 |
| 12 | P01BE22S0320031 | ARPIITHA H N | 50 | 50 | | | | 100 | 100 | | | | | 62.5 | 33.3 | | | | 80 | 50 | | 50 | 50 | | 75 | 33.3 | 50 | 50 | 33.3 | 50 | 33.3 | | 50 | 100 | 56.5 | 51.4 | 49.2 | 41 | | | | | |
| 13 | P01BE22S0320032 | ASHWINI A S | 100 | 100 | | 50 | 50 | 50 | 50 | | | | | 25 | 33.3 | 100 | 50 | | | | 75 | 50 | | | | | 50 | 66.7 | 25 | 50 | 83.3 | 80 | 83.3 | 50 | 52.1 | 58.3 | 61 | 28 | | | | | |
| 14 | P01BE22S0320004 | BALARAJ S | | | | 50 | | 62.5 | 66.7 | | | | | | | | | | | | | | | | | | 62.5 | 66.7 | 50 | 33.3 | 66.7 | 60 | | 50 | 64.6 | 80 | 62.5 | 55.3 | 27 | | | | |
| 15 | P01BE22S0320061 | BHANUPRIYA K S | | 100 | | | 50 | 12.5 | 50 | 100 | | | | 62.5 | | 16.7 | 80 | | 25 | 25 | | 50 | 50 | | | | 62.5 | 16.7 | | 75 | 50 | 60 | | 100 | 53.1 | 53.1 | 42.5 | 50.4 | 34 | | | | |
| 16 | P01BE22S0320067 | BHAVANA N | | 100 | | 50 | 100 | 100 | 100 | 83.3 | | | | 50 | 100 | 83.3 | 80 | | 75 | | 100 | 100 | 37.5 | 33.3 | 50 | 62.5 | 66.7 | 33.3 | 50 | | 80 | | 75 | 95.8 | 78.3 | 65.5 | 60 | 45 | | | | | |
| 17 | P01BE22S0320033 | BHAVANI SHEKAR T S | 50 | | 50 | | | 50 | 33.3 | | | | | 75 | | 16.7 | 80 | | 50 | | 50 | | | | | | 75 | 66.7 | 33.3 | 75 | 50 | 80 | | 50 | 41.7 | 55.4 | 62.5 | 61 | 32 | | | | |
| 18 | P01BE22S0320034 | BHOOMIKA TU | | | | | | 50 | | | | | | | | | | | | | | | | | | | | | | | | | 80 | 50 | 65.6 | 71.7 | 77.5 | 44 | | | | | |

3. Evaluation for attainment

| | |
|------------------------------------|----|
| Threshold %marks for CO attainment | 50 |
| Minimum marks for pass in ESE | 21 |

| Rubrics | | |
|---------|------|---|
| Fixed | >=50 | 1 |
| | >=60 | 2 |
| | >=70 | 3 |

4. Final CO attainment:

| | No. of students unregistered to the ESE | | | | | 3 |
|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|------|------|------|------|-------------|
| | No. of students scored ≥ 21 marks in ESE | | | | | 62 |
| No. of students scored \geq threshold in IA | 53 | 61 | 64 | 62 | 64 | |
| %of Students scored \geq threshold marks in IA | 77.9 | 89.7 | 94.1 | 91.2 | 94.1 | |
| CO attainment (1 for ≥ 50 , 2 for ≥ 60 & 3 for ≥ 70) | 3 | 3 | 3 | 3 | 3 | |
| %Students scored ≥ 21 marks in ESE | | | | | | 91.176 |
| Attainment in ESE | | | | | | 3 |
| Overall attainment = $(0.3 \times$ attainment in IA + $0.7 \times$ attainment in ESE) | | | | | | 3.00 |
| | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | |

5. PO/PSO attainment calculation:

CO-PO/PSO attainment

| POs/PSOs- -> COs↓ | PO1 | PO2 | PO3 | PO4 | PO5 | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 | PSO6 | PSO7 |
|-----------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------------|
| CO1 | 2.00 | 1.00 | 0.00 | 1.00 | 1.00 | 2.00 | 3.00 | 3.00 | | 2.00 | 3.00 | 1.00 |
| CO2 | 1.00 | 2.00 | 2.00 | 1.00 | | 2.00 | 1.00 | 1.00 | | 1.00 | 2.00 | 1.00 |
| CO3 | 1.00 | 3.00 | 2.00 | 3.00 | 1.00 | 3.00 | 2.00 | 3.00 | | 1.00 | 1.00 | |
| CO4 | 3.00 | 1.00 | 2.00 | 3.00 | 2.00 | 0.00 | 2.00 | 2.00 | | 0.00 | 1.00 | |
| CO5 | 2.00 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 | 1.33 | 1.33 | | 1.33 | 0.67 | 0.67 |
| Average PO/PSO attainment | 1.80 | 1.53 | 1.33 | 1.73 | 1.17 | 1.53 | 1.87 | 2.07 | | 1.07 | 1.53 | 0.89 |
| %Attainment | 100.0 | 95.8 | 76.2 | 96.3 | 93.3 | 76.7 | 93.3 | 93.9 | | 71.1 | 95.8 | 88.9 |
| Overall subject attainment | | | | | | | | | | | | 1.5 |

Percentage attainment of the course = $1.5/1.7 * 100 = 89.3$

D. Consolidation of POs/PSOs outcomes attainment of all the courses of all the semesters from direct assessment and averaging them

E. Indirect assessment through survey (Weightage: 20%)

(Passed out Students, Peer Teachers, Faculty, Alumni, Parents and Employers)

F. Overall attainment = Attainment from Direct Assessment + Attainment from Indirect Assessment

G. Discussion of OBE attainments in the meeting of OBE Execution Committee and actions to improvement will be disseminated

2.6.1 Supporting documents

1. OBE Manual of the College (Prepared by IQAC)

<https://www.jsscacs.edu.in/sites/default/files/Files/Final%20Modified%20OBE%20Manual.pdf>

2. OBE Policy

<https://www.jsscacs.edu.in/sites/default/files/Files/OBE%20Policy.pdf>

3. Attainment Reports

| Year | URL of attainment reports |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2018-19 | https://www.jsscacs.edu.in/sites/default/files/Files/2018-19%28Attainment%20reports%29.pdf |
| 2019-20 | https://www.jsscacs.edu.in/sites/default/files/Files/2019-20%28Attainment%20Reports%29.pdf |
| 2020-21 | https://www.jsscacs.edu.in/sites/default/files/Files/2020-21%28Attainments%29.pdf |
| 2021-22 | https://www.jsscacs.edu.in/sites/default/files/Files/2021-22%28Attainments%29.pdf |
| 2022-23 | https://www.jsscacs.edu.in/sites/default/files/Files/Attainment%20Report_2022-23%20Uploaded.pdf |

4. Link for sample survey forms for Indirect Assessment:

a. Document 1

https://www.jsscacs.edu.in/sites/default/files/Files/Survey%20Report_merged_doc-1.pdf

b. Document 2:

https://www.jsscacs.edu.in/sites/default/files/Files/Survey%20Report_merged_doc-2.pdf

5. OBE Execution committee meetings' proceedings

| Year | URL of the proceedings |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2018-19 | https://www.jsscacs.edu.in/sites/default/files/Files/OBE%20Proceedings%202018-19.pdf |
| 2019-20 | https://www.jsscacs.edu.in/sites/default/files/Files/OBE%20Proceedings%202019-20.pdf |
| 2020-21 | https://www.jsscacs.edu.in/sites/default/files/Files/OBE%20Proceedings%202020-21.pdf |
| 2021-22 | https://www.jsscacs.edu.in/sites/default/files/Files/OBE%20Proceedings%202021-22.pdf |
| 2022-23 | https://www.jsscacs.edu.in/sites/default/files/Files/OBE%20Proceedings-2022-23.pdf |

4. OBE Evaluative Report_2022-23

https://www.jsscacs.edu.in/sites/default/files/Files/OBE%20Evaluation%20report_2022-23.pdf