



**CHRIST**  
(DEEMED TO BE UNIVERSITY)  
BANGALORE · INDIA

**Department of Statistics  
M.Sc - Statistics**

**Curriculum Feedback Analysis and Action  
Taken Report**

**AY 2020-21**

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## Introduction:

At the end of the every Academic Year, the feedback will be taken from all the stake holders to enhance the quality of education with effective curriculum structure to cater the needs of all the stakeholders. The stakeholders were requested to submit their feedback based on the criterion as mentioned below with a rating scale of 5.Excellent 4.Good 3.Satisfactory 2.Averag and 1.Needs to Improve. In addition, the suggestions for the curriculum enrichment were also collected.

## Student Feedback

| SNO | Criterion   |
|-----|---|
| 1   | Does the content of the curriculum satisfy the stated objectives and learning outcomes?   |
| 2   | Does the curriculum cover advanced topics?  |
| 3   | Whether the curriculum enhances your knowledge and skills in the relevant domain?         |
| 4   | Is the curriculum effective in developing critical/ analytical thinking?                  |
| 5   | Are the text books and reference materials relevant to the content of the curriculum?     |
| 6   | Does the curriculum orient towards higher education?                                      |
| 7   | Does the curriculum enable the students to apply their knowledge in real life situations? |
| 8   | Is employability given weightage in the design and development of curriculum?             |
| 9   | Does the curriculum promote self-study and attitude of research?                          |
| 10  | Does the curriculum meet your overall expectations?                                       |

## Faculty Feedback

| SNO | Criterion  |
|-----|--|
| 1   | Does the curriculum satisfy the stated objectives and learning outcomes?                                   |
| 2   | Do you have continuous processes to propose, modify, suggest and incorporate new topics in the curriculum? |
| 3   | Is the curriculum effective in developing independent thinking?  |
| 4   | Does the departmental level expert committee meet to review the curriculum?                                |
| 5   | Does the curriculum enhance your knowledge in the subject area?  |
| 6   | Does the curriculum enable the students to apply their knowledge in real life?                             |
| 7   | Does the curriculum demand the teachers for research inclusive teaching?                                   |

## Alumni Feedback

| SNO | Criterion   |
|-----|---|
| 1   | Is the curriculum updated on a regular basis depending on the current trends and advanced topics? |
| 2   | Does the curriculum orient the students towards higher education?                                 |
| 3   | Does the curriculum provide employability weightage?  |
| 4   | Does the curriculum meet the expectations of the industry?  |
| 5   | Does the curriculum enable the student to connect the knowledge to real life application?         |
| 6   | Does the curriculum encourage entrepreneurship?   |
| 7   | Do you think that the curriculum motivates the students for research and development?             |

### Industry Feedback

| SNO | Criterion  |
|-----|--|
| 1   | Is the curriculum aligned with the objectives of the programme?  |
| 2   | Does the curriculum cover advanced topics and current trends?  |
| 3   | How would you rate the relevance of the electives offered in the curriculum?                               |
| 4   | Is employability given weightage in the design and development of curriculum?                              |
| 5   | Does the curriculum meet the expectations of the industry?   |
| 6   | Does the curriculum cater to the enhancement of skills of the students with respect to the industry needs? |

### Parents Feedback

| SNO | Criterion   |
|-----|---|
| 1   | Does the curriculum orient the students towards higher education?                 |
| 2   | Is employability given weightage in the design and development of the curriculum? |
| 3   | Is the curriculum designed to have a component on value based education?          |
| 4   | Does the curriculum have components to serve the needs of the society?            |
| 5   | Does the curriculum promote self-study and attitude of research?                  |
| 6   | Does the curriculum help the students to enhance their personality?               |

### Analysis (AY 2020-21)

To facilitate the feedback process, the above questions were included in a Google form and sent to the stakeholders to submit their responses with suggestions. The responses were categorised (in %) based on their rating as mentioned in the following tables.

**Table 1: Students Feedback on curriculum**

| S.No | Criterion   | % of Satisfaction level |      |    |    |    |
|------|---|-------------------------|------|----|----|----|
|      |   | 5                       | 4    | 3  | 2  | 1  |
| 1    | Does the content of the curriculum satisfy the stated objectives and learning outcomes?   | 95%                     | 3%   | 2% | 0% | 0% |
| 2    | Does the curriculum cover advanced topics?  | 98%                     | 2%   | 0% | 0% | 0% |
| 3    | Whether the curriculum enhances your knowledge and skills in the relevant domain?         | 97%                     | 2%   | 1% | 0% | 0% |
| 4    | Is the curriculum effective in developing critical/ analytical thinking?                  | 96.5%                   | 3.5% | 0% | 0% | 0% |
| 5    | Are the text books and reference materials relevant to the content of the curriculum?     | 99%                     | 1%   | 0% | 0% | 0% |
| 6    | Does the curriculum orient towards higher education?                                      | 96%                     | 2%   | 2% | 0% | 0% |
| 7    | Does the curriculum enable the students to apply their knowledge in real life situations? | 97%                     | 2%   | 1% | 0% | 0% |
| 8    | Is employability given weightage in the design and development of curriculum?             | 98%                     | 2%   | 0% | 0% | 0% |
| 9    | Does the curriculum promote self-study and attitude of research?                          | 97%                     | 3%   | 0% | 0% | 0% |
| 10   | Does the curriculum meet your overall expectations?                                       | 99%                     | 1%   | 0% | 0% | 0% |

**Table 2: Teachers Feedback on curriculum**

| S.No | Criterion  | % of Satisfaction level |    |    |    |    |
|------|--|-------------------------|----|----|----|----|
|      |  | 5                       | 4  | 3  | 2  | 1  |
| 1    | Does the curriculum satisfy the stated objectives and learning outcomes?                                   | 99%                     | 1% | 0% | 0% | 0% |
| 2    | Do you have continuous processes to propose, modify, suggest and incorporate new topics in the curriculum? | 98%                     | 2% | 0% | 0% | 0% |
| 3    | Is the curriculum effective in developing independent thinking?  | 99%                     | 1% | 0% | 0% | 0% |
| 4    | Does the departmental level expert committee meet to review the curriculum?                                | 100%                    | 0% | 0% | 0% | 0% |
| 5    | Does the curriculum enhance your knowledge in the subject area?  | 99%                     | 1% | 0% | 0% | 0% |
| 6    | Does the curriculum enable the students to apply their knowledge in real life?                             | 99%                     | 1% | 0% | 0% | 0% |
| 7    | Does the curriculum demand the teachers for  | 100%                    | 0% | 0% | 0% | 0% |

|                              |  |  |  |  |  |
|------------------------------|--|--|--|--|--|
| research inclusive teaching? |  |  |  |  |  |
|------------------------------|--|--|--|--|--|

**Table 3: Industry Feedback on curriculum**

| S.No | Criterion  | % of Satisfaction level |    |    |    |    |
|------|--|-------------------------|----|----|----|----|
|      |  | 5                       | 4  | 3  | 2  | 1  |
| 1    | Is the curriculum aligned with the objectives of the programme?  | 99%                     | 1% | 0% | 0% | 0% |
| 2    | Does the curriculum cover advanced topics and current trends?  | 98%                     | 2% | 0% | 0% | 0% |
| 3    | How would you rate the relevance of the electives offered in the curriculum?                               | 99%                     | 1% | 0% | 0% | 0% |
| 4    | Is employability given weightage in the design and development of curriculum?                              | 100%                    | 0% | 0% | 0% | 0% |
| 5    | Does the curriculum meet the expectations of the industry?   | 99%                     | 1% | 0% | 0% | 0% |
| 6    | Does the curriculum cater to the enhancement of skills of the students with respect to the industry needs? | 99%                     | 1% | 0% | 0% | 0% |

**Table 4: Parents Feedback on curriculum**

| S.No | Criterion   | % of Satisfaction level |    |    |    |    |
|------|---|-------------------------|----|----|----|----|
|      |   | 5                       | 4  | 3  | 2  | 1  |
| 1    | Does the curriculum orient the students towards higher education?                 | 97%                     | 2% | 1% | 0% | 0% |
| 2    | Is employability given weightage in the design and development of the curriculum? | 98%                     | 2% | 0% | 0% | 0% |
| 3    | Is the curriculum designed to have a component on value based education?          | 99%                     | 1% | 0% | 0% | 0% |
| 4    | Does the curriculum have components to serve the needs of the society?            | 97%                     | 3% | 0% | 0% | 0% |
| 5    | Does the curriculum promote self-study and attitude of research?                  | 99%                     | 1% | 0% | 0% | 0% |
| 6    | Does the curriculum help the students to enhance their personality?               | 99%                     | 1% | 0% | 0% | 0% |

Table 5: Overall satisfaction of stakeholders towards the curriculum

| <b>Stakeholders</b> | <b>Total no. of Responses</b> | <b>Satisfied %</b> | <b>Good %</b> | <b>Excellent %</b> |
|---------------------|-------------------------------|--------------------|---------------|--------------------|
| <b>Students</b>     | 33                            | 0                  | 1             | 99                 |
| <b>Teachers</b>     | 5                             | 0                  | 0             | 100                |
| <b>Industry</b>     | 6                             | 0                  | 2             | 98                 |
| <b>Parents</b>      | 12                            | 0                  | 1             | 99                 |

From the above tables, the majority of the students expressed that the curriculum is good to enhance their employability skills with the latest trends and technologies in statistics and data science. The scores of the faculty's shows that the effectiveness of the curriculum structure above the satisfactory level. The feedback and suggestions from our Alumni is always significant, as their suggestions increasing the scope for introducing new courses related to contemporary areas. From the responses of the Industry experts, it realized that the curriculum structure is Excellent. Also, they suggested introducing more applied statistics courses which are in demand in the Industry. It was also noted that the Industry experts also felt that the curriculum is fare enough to increase the opportunities of employment. The scores shows that, the Parents also satisfied with curriculum which facilitates the needs of their wards for their higher studies and employment.

#### **Suggestions Provided by the Stakeholders:**

Some students were mentioned that, emphasis should be given on practical implementation of concepts. Also, few students suggested that, the assignment and other CIA components should include more aspects of critical thinking and practical implementation. Industry experts suggested the incorporation applied statistics papers such as Design of Experiments, Stochastic Process and queuing theory and biostatistics. Some of the faculty members suggested their course for the revision and proposed new elective courses to be introduced.

#### **Action Taken:**

Based on the feedback and suggestions receive from the Students, Faculty, Industry and Parents, the following changing have been proposed and discussed in the Board of Studies meeting.

The following core and elective core courses have been revised with incorporation of practical components along with theory for the statistics courses in M.Sc (Statistics) Programme.

|         |   |
|---------|---|
| MST131  | Probability Theory                                  |
| MST132  | Distribution Theory                                 |
| MST133  | Matrix Theory and Linear Models                     |
| MST134  | Research Methodology and LaTeX                      |
| MST171  | Sample Survey Designs                               |
| MST172  | Statistical Computing using R                       |
| MST231  | Statistical Inference I                             |
| MST232  | Stochastic Processes                                |
| MST233  | Categorical Data Analysis                           |
| MST271  | Regression Analysis                                 |
| MST272  | Statistical Computing using Python                  |
| MST273A | Principles of Data science and Data Base Techniques |
| MST273B | Survival Analysis                                   |
| MST273C | Optimization techniques                             |

The new courses with lab components were introduced in M.Sc (Statistics) Programmes.

|         |   |
|---------|---|
| MST331  | Statistical Inference II                  |
| MST332  | Multivariate Analysis                     |
| MST371  | Time Series Analysis                      |
| MST372A | Statistical Machine Learning              |
| MST372B | Biostatistics                             |
| MST372C | Reliability Engineering                   |
| MST373A | Numerical Analysis                        |
| MST373B | Non-parametric methods                    |
| MST373C | Theory of Games and Statistical Decisions |
| MST431  | Advanced Operations Research              |
| MST432  | Design and analysis of experiments        |
| MST433  | Statistical Quality Control               |
| MST471A | Neural Networks and Deep Learning         |
| MST471B | Spatial Statistics                        |

|         |                                       |
|---------|---------------------------------------|
| MST471C | Big Data Analytics                    |
| MST472A | High dimensional Statistical Analysis |
| MST472B | Statistical Genetics                  |
| MST472C | Actuarial methods                     |
| MST473A | Bayesian Statistics                   |
| MST473B | Clinical Trials                       |
| MST473C | Risk Modeling                         |



A handwritten signature in blue ink, consisting of stylized initials and a long horizontal line.

*Head*  
*Department of Statistics*  
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*Bengaluru - 560 029*



## Minutes of Meeting – Board of Studies – 2020

Minutes of the 14<sup>th</sup> Meeting of the Board of Studies of the Department of Statistics held on 08/02/2020 at 10.00 AM in Room No. 119, Block IV, CHRIST (Deemed to be University).

In the Chair: Prof. Joy Paulose, Head of the Department.

### Attendance of Members

All members as per the attendance list were present

### Declaration of Quorum and Calling the Meeting to Order.

The Chairperson commenced the meeting with the silent prayer followed by a note of warm welcome to all the members of BOS. The Chairperson declared the validity of the quorum and called the meeting to order.

### Matters on the Agenda:

1. To confirm the minutes of the previous meeting held on 02/02/2019.

The minutes of the previous meeting of the Board of Studies was duly reviewed and approved in the meeting. It was noted that the PG program Data Science has been introduced in this academic year as per the suggestions given by the BOS experts.

2. To consider and recommend the proposed structure and the curriculum for BSc in Data Science programme.

The Board of Studies reviewed the proposed structure and the curriculum of BSc in Data Science in the meeting. Mr. Sandeep Patil appreciated the initiative taken by the department to propose this programme and has given feedback on various courses of BSc Data Science. The board reviewed and appreciated the initiative. Having considered the initiatives and scope of the programme, the Board approved the curriculum, subject to the approval of the Academic Council.

3. To consider and recommend the proposed structure and changes in the curriculum for MSc in Data Science programme.

The Board of Studies reviewed the proposed structure and change in the curriculum of MSc in Data Science in the meeting. Having considered the validity of the reasons for the suggested changes, the Board approved the same, subject to approval of the Academic Council.

**4. To consider and recommend the proposed structure and the curriculum of MSc in Statistics programme.**

The Board of Studies reviewed the proposed structure of MSc in Statistics of all the semesters.

The board reviewed the syllabus of core paper: MST131 – Probability Theory, MST132 – Distribution Theory, MST133 – Matrix Theory and Linear Models, MST134 – Research Methodology and LaTeX, MST171 – Sample Survey Designs, MST172 – Statistical Computing using R, MST231 – Statistical Inference I, MST232 – Stochastic Processes, MST233 – Categorical Data Analysis, MST271 – Regression Analysis, MST272 – Statistical Computing using Python, MST281 – Research Project.

Also, the board reviewed the proposal of offering the following elective courses for the incorporation of lab components along with theory: MST273A – Principles of Data Science and Data Base Techniques, MST273B – Survival Analysis, MST273C – Statistical Quality Control

Mr. Sandeep Patil appreciated the efforts of introducing MSc Statistics Program which is focused more on applications. He also added that the core and elective papers which are offered for this program will fill the industry academia gap to a greater extent. Mr. Sandeep Patil suggested adding the practical component of Categorical Data Analysis as one unit in Statistical Computing using Python course. Having considered the validity of the reasons for the proposed structure and curriculum the Board approved the same, subject to approval of the Academic Council.

**5. To consider and recommend the proposed changes in the curriculum of BSc(CMS & EMS) programme.**

The Board of Studies reviewed the proposed changes in curriculum of BSc (CMS & EMS). In the proposed structure the following new elective courses were introduced STA541D – Introduction to Spatial Statistics, STA552D – Spatial Statistics Practical, STA641D – Statistical Genetics, STA652D – Statistical Genetics Practical. The board reviewed the suitability of the electives and appreciated the efforts of introducing the latest trends in the curriculum.

Having considered the validity of the reasons for the proposed and suggested changes, the Board approved the same, subject to approval of the Academic Council.

**6. To consider and recommend the proposed structure in the curriculum of MSc (Data Analytics) programme.**

The Board of Studies reviewed the proposed structure of MSc in Data Analytics proposed. The variety of the courses included with respect to Statistics were analyzed. The board reviewed and appreciated the initiative. Having considered the initiatives and scope of the programme, the Board approved the curriculum, subject to the approval of the Academic Council.

7. **To review the Results of the ESE October 2019 for all Statistics programme.**

The Result Analysis of the End Semester Examinations for all the Statistics programmes was reviewed by the BOS.

8. **To consider and recommend the Panel of Examiners.**

The Board reviewed and recommended the Panel of Examiners of the Department of Statistics.

9. **To consider and recommend the Open Elective Course.**


The Board reviewed and recommended the proposed the following open elective courses:

- STA067 – Fundamentals of Statistics
- STA068 – Statistical Modelling using R.

10. **To consider any other matter with the permission of the Chair.**

Mr. Sandeep Patil appreciated the efforts taken by the department for bringing in the latest trends into the curriculum. The Board appreciated the introduction of research in the young minds and the addition of new elective courses in under graduate and post graduate programmes.

With no other matters to discuss, the Chairperson adjourned the meeting thanking all the members present. The Chairperson thanked Mr. Sandeep Patil for his presence and valuable suggestions.

  
Prof. Joy Paulose  
Chairperson  
Board of Studies

