तुळजाराम चतुरचंद महाविद्यालय,बारामती

Anekant Education Society's

Tuljaram Chaturchand College
of Arts, Science,Commerce, Baramati
(Autonomous)

DEPARTMENT OF STATISTICS

(Faculty of Science and Technology)

Minutes of Board of Studies Meeting No. 10

Date of Meeting: 09/06/2023

Venue: Department of Statistics

June, 2023

Anekant Education Society's
Tuljaram Chaturchand College of Arts, Science and Commerce, Baramati
(Autonomous)
Department of Statistics

NOTICE

Date: 07/06/2023

Board of Studies Meeting

All members of the Board of Studies are hereby informed that, our BoS meeting is organised online through Google Meet on 09th June, 2023 at 01.30 PM. As esteemed members of the board, your presence and suggestions during the meeting would be greatly appreciated.

The agenda of the meeting included the following subjects:
1. To confirm the minutes of the previous meeting held on 08/04/2023.
2. To design and approve course and credit structure for the B.Sc. and M. Sc. programme in accordance with (NEP 2020) 2023 pattern.
3. To prepare and approve curriculum of F.Y. B.Sc., F. Y. B. Sc. (Computer Science) (Semester I) (2023 pattern) to be implemented from the academic year 2023-2024.
4. To prepare and approve curriculum of M.Sc. Statistics and M.Sc. Data Science (Part-I) (Semester I) (2023 pattern) to be implemented from the academic year 2023-2024.
5. To introduce MOOC Certificate courses from SWAYAM platform for the S.Y.B.Sc and T.Y.B.Sc as per 2022 pattern
6. To discuss and incorporate the relevant feedbacks of the stakeholders (students, teachers, parents, alumni and employers) in the curriculum.
7. Any other issue with the permission of the chair..

Therefore, I kindly request you all to attend the aforementioned meeting and invite you to provide your valuable inputs for the designing the curriculum in accordance with 2019 pattern.

Chairman, BoS in Statistics

Principal

Anekant Education Society's
Tuljaram Chaturchand College of Arts, Science and Commerce, Baramati
(Autonomous)
Department of Statistics
List of Members Presented for the BOS Meeting

The following internal and external BoS members were attended the Board of Studies (Statistics) meeting held on 09th June, 2023.

Sr. No.	Name	Designation
1.	Prof. Dr. Vikas C. Kakade	Chairman
2.	Prin. Dr. Avinash S. Jagtap	Member
3.	Dr. Neeta K. Dhane	Member
4.	Dr. Vaishali V. Patil	Member
5.	Mr. Chandrashekhar P. Swami	Member
6.	Mrs. Sarita D. Wadkar	Member (Ad hoc)
7.	Ms. Priti M. Mohite	Member (Ad hoc)
8.	Ms. Nilambari A. Jagtap	Member (Ad hoc)
9.	Miss.Kalyani C. Kale	Member (Ad hoc)
10.	Ms.Pooja S. Zanjurne	Member (Ad hoc)
11.	Dr. Akanksha S. Kashikar	Vice-Chancellor Nominee
12.	Dr. Rajendra G. Gurao	Expert from other University
13.	Mr. Rohan Koshti	Expert from other University
14.	Mr. Saurabh Kadam	Representative from Industry
15.	Dr. Jaya L. Limbore	Meritorious Alumni
16.	Dr. Sharad Gore	Invitee Member
17.	Mr. Bharat Jambhulkar	UG Student Invitee Member
18.	Miss. Prapti Mane	UG Student Invitee Member
19.	Mr. Rushikesh Pandhare	PG Student Invitee Member
20.	Miss. Kiran Banda	PG Student Invitee Member

MINUTES OF THE MEETING

The Meeting of Board of Studies in Statistics was held online and offline through Google Meet on 09th June, 2023 at 01.30 pm in Department of Statistics. T. C. College, Baramati. The Meeting of Board of Studies in Statistics was conducted to prepare and approve curriculum of F.Y. B.Sc., F. Y. B. Sc. (Computer Science) (Semester I) (2023 pattern) to be implemented from the academic year 2023-2024, to prepare and approve curriculum of M.Sc. Statistics and M.Sc. Data Science (Part-I) (Semester I) (2023 pattern) to be implemented from the academic year 2023-2024. In this connection, we have submitting herewith the revise the syllabus of F.Y.B.Sc., F. Y. B.Sc. (Comp. Sci.), M.Sc. Part-I Statistics and M.Sc. Data Science (Part-I) (Semester I) (2023 pattern) for approving in the Academic Council of our college.

During the meeting, fruitful discussions were held on the items mentioned in the circulated agenda. We are pleased to inform you that the following resolutions were made during the BOS meeting.

1. To confirm the minutes of the previous meeting held on 08th April 2023.

Dr. Vikas C. Kakade read the minutes of the BoS meeting held on 08th April 2023 and put forward to the BoS members for the approval.

Resolution No. 1: The minutes of the previous Board of Studies meeting were approved and confirmed.

2. To design and approve course and credit structure for the B.Sc. and M. Sc. programme in accordance with (NEP 2020) 2023 pattern.

The Chairman of BoS Dr. Vikas C. Kakade has provided an overview of the NEP 2023 pattern and emphasized its significance in curriculum development. The members discussed key features and any potential challenges associated with its implementation. A detailed discussion took place regarding the course and credit structure of the B.Sc., B.Com. B.Sc. (Comp. Sci.) and M.Sc. programmes. The following points were considered:

- Core and elective course, SEC, VSC, OE Course distribution. Credit hours for each course. Inclusion of practical components. Alignment with industry requirements.
- Opportunities for interdisciplinary studies.

The Chairman presented a proposal for the course and credit structure. The proposal included a breakdown of required courses, elective options, and credit hours for each program.

Course Structure for F.Y.B. Sc. STATISTICS

Sem	Course Type	Course Code	Course Name	Theory / Practical	Credits
I	Major Mandatory	STA-101-MJM	Descriptive Statistics – I	Theory	02
	Major Mandatory	STA-102-MJM	Discrete Probability and Probability Distributions – I	Theory	02
	Major Mandatory	STA-103-MJM	Statistics Practical – I	Practical	02
	Open Elective (OE)	STA-116-OE	Commercial Statistics	Theory	02
	Open Elective (OE)	STA-117-OE	Introduction to MS-Excel and Statistical Computing	Practical	02
	Vocational Skill Course (VSC)	STA-121-VSC	Introduction to R Programming Language	Theory	02
	Skill Enhancement Course (SEC)	STA-126-SEC	Statistical Computing Using MS-Excel	Practical	02
	Ability Enhancement Course (AEC)	ENG-131-AEC	Functional English-I	Theory	02
	Value Education Course (VEC)	STA-135-VEC	Environmental Science	Theory	02
	Indian Knowledge System (IKS)	STA-137-IKS	Evolution of Science and Statistics in India	Theory	02
	Co-curricular Course (CC)	--	To be selected from the Basket	Theory	02
			Total Credits Semester-I		**22**
II	Major Mandatory	STA-151-MJM	Descriptive Statistics – II	Theory	02
	Major Mandatory	STA-152-MJM	Discrete Probability and Probability Distributions – II	Theory	02
	Major Mandatory	STA-153-MJM	Statistics Practical – II	Practical	02
	Minor	STA-161-MN	Basic Statistics	Theory	02
	Open Elective (OE)	STA-166-OE	Business Statistics	Theory	02
	Open Elective (OE)	STA-167-OE	Statistics Learning with Software	Practical	02
	Vocational Skill Course (VSC)	STA-171-VSC	Data Analysis with R Software	Practical	02
	Skill Enhancement Course (SEC)	STA-176-SEC	Application of Statistics Using Advanced Excel	Practical	02
	Ability Enhancement Course (AEC)	ENG-181-AEC	Functional English-II	Theory	02
	Value Education Course (VEC)	STA -185-VEC	Digital and Technological Solutions	Theory	02
	Co-curricular Course (CC)	--	To be selected from the Basket	Theory	02
			Total Credits Semester-II		**22**
			Cumulative Credits Semester I + Semester II		**44**

Course Structure for F.Y.B. Sc.(CS) STATISTICS

Sem	Course Type	Course Code	Course Name	Theory / Practical	Credits
I	Skill Enhancement Course (SEC)	COS-126-SEC-ST	Introduction to MS Excel and R-Software	Practical	02
II	Minor	COS-161-MN(A)	Exploratory Data Analysis	Theory	02

Course Structure for M.Sc. Part I STATISTICS

Sem	Course Type	Course Code	Course Title	Theory/ Practical	No. of Credits
I	Major (Mandatory)	STA-501-MJM	Linear Algebra	Theory	04
	Major (Mandatory)	STA -502-MJM	Probability Distributions	Theory	04
	Major (Mandatory)	STA -503-MJM	Statistics Practical – I	Practical	02
	Major (Mandatory)	STA -504-MJM	Statistics Practical – II	Practical	02
	Major (Elective)	STA-511-MJE (A)	Mathematical Analysis	Theory	04
		STA-511-MJE(B)	Calculus and Statistical Computing	Theory	
	Research Methodology (RM)	STA -521-RM	Research Methodology	Theory	04
			Total Credits Semester I		**20**
II	Major (Mandatory)	STA-551-MJM	Multivariate Analysis	Theory	04
	Major (Mandatory)	STA-552-MJM	Regression Analysis	Theory	04
	Major (Mandatory)	STA-553-MJM	Statistics Practical – III	Practical	02
	Major (Mandatory)	STA-554-MJM	Statistics Practical – IV	Practical	02
	Major (Elective)	STA-561-MJE (A)	Probability Theory	Theory	04
		STA-561-MJE (B)	Stochastic Processes	Theory	
	On Job Training (OJT)/Field Project (FP)	STA-581-OJT/FP	On Job Training Field Project	Training/Project	04
			Total Credits Semester-II		**20**
			Cumulative Credits Semester I and II		**40**

Course Structure for M.Sc. Part II STATISTICS

Sem	Course Type	Course Code	Course Title	Theory/ Practical	No. of Credits
III	Major (Mandatory)	STA-601-MJM	Parametric Inference	Theory	04
	Major (Mandatory)	STA -602-MJM	Design and Analysis of Experiments	Theory	04
	Major (Mandatory)	STA -603-MJM	Statistics Practical – V	Practical	02
	Major (Mandatory)	STA -604-MJM	Statistics Practical – VI	Practical	02
	Major (Elective)	STA-611-MJE (A)	Data Mining	Theory	02
		STA-611-MJE(B)	Design and Analysis of Clinical Trials	Theory	
		STA-612-MJE (A)	Machine Learning: Techniques and Applications	Practical	02
		STA-612-MJE(B)	Practical Based on Clinical Trials	Practical	
	RP	STA -621-RP	Research Project	Project	04
			Total Credits Semester III		**20**
IV	Major (Mandatory)	STA-651-MJM	Asymptotic Inference	Theory	04
	Major (Mandatory)	STA-652-MJM	Time Series Analysis	Theory	04
	Major (Mandatory)	STA-653-MJM	Statistics Practical – VII	Practical	02
	Major (Elective)	STA-661-MJE (A)	Survival Analysis	Theory	02
		STA-661-MJE (B)	Actuarial Statistics	Theory	
		STA-662-MJE (A)	Practical Based on Statistical Process Control	Practical	02
		STA-662-MJE (B)	Practical Based on Optimization Techniques	Practical	
	RP	STA-681-RP	Research Project	Project	06
			Total Credits Semester-IV		**20**
			Cumulative Credits Semester III and IV		**40**

Course Structure for M.Sc. Part I Data Science

Sem	Course Type	Course Code	Course Title	Theory/ Practical	No. of Credits
I	Major (Mandatory)	DSC-501-MJM	Probability Distributions	Theory	04
	Major (Mandatory)	DSC -502-MJM	Statistical Inference	Theory	04
	Major (Mandatory)	DSC -503-MJM	Data Science Practical – I	Practical	02
	Major (Mandatory)	DSC -504-MJM	Data Science Practical – II	Practical	02
	Major (Elective)	DSC-511-MJE (A)	Data Base Management System	Theory	04

		DSC -511-MJE (B)	Stochastic Models and Applications	Theory	
	Research Methodology (RM)	DSC -521-RM	Research Methodology	Theory	04
			Total Credits Semester I		**20**
II	Major (Mandatory)	DSC -551-MJM	Design and Analysis of Experiments	Theory	04
	Major (Mandatory)	DSC-552-MJM	Regression Analysis and Predictive Models	Theory	04
	Major (Mandatory)	DSC-553-MJM	Data Science Practical – III	Practical	02
	Major (Mandatory)	DSC-554-MJM	Data Science Practical – IV	Practical	02
	Major (Elective)	DSC -561-MJE (A)	Bayesian Inference	Theory	04
		DSC -561-MJE (B)	Computational Statistics	Theory	
	On Job Training (OJT)/Field Project (FP)	DSC -581-OJT/FP	On Job Training Field Project	Training/Project	04
			Total Credits Semester-II		**20**
			Cumulative Credits Semester I and II		**40**

Course Structure for M.Sc. Part II Data Science

Sem	Course Type	Course Code	Course Title	Theory/ Practical	No. of Credits
III	Major (Mandatory)	DSC-601-MJM	Exploratory Multivariate Data Analysis	Theory	04
	Major (Mandatory)	DSC -602-MJM	Time Series Analysis and Forecasting	Theory	04
	Major (Mandatory)	DSC -603-MJM	Data Science Practical – V	Practical	02
	Major (Mandatory)	DSC -604-MJM	Data Science Practical – VI	Practical	02
	Major (Elective)	DSC-611-MJE(A)	Machine Learning	Theory	02
		DSC -611-MJE(B)	Text Mining and Natural Language Processing	Theory	
		DSC-612-MJE (A)	Machine Learning: Techniques and Applications	Practical	02
		DSC -612-MJE (B)	Practical Based on Text Mining and NLP	Practical	
	Research Project (RP)	DSC -621-RP	Research Project	Project	04

					Total Credits Semester III	20
IV	Major (Mandatory)	DSC -651-MJM	Artificial Intelligence		Theory	04
	Major (Mandatory)	DSC-652-MJM	Deep Learning		Theory	04
	Major (Mandatory)	DSC-653-MJM	Data Science Practical – VI		Practical	02
	Major (Elective)	DSC -661-MJE (A)	Supply Chain and Logistics Analytics		Theory	02
		DSC -661-MJE (B)	Discrete Data Analysis		Theory	
		DSC -662-MJE (A)	Introduction to Hadoop		Practical	02
		DSC -662-MJE (B)	Web Application Development		Practical	
	Research Project (RP)	DSC -581-RP	Research Project		Project	06
					Total Credits Semester-IV	20
					Cumulative Credits Semester III and IV	40

Resolution No. 2: The course and credit structure for the F.Y.B.Sc., F.Y.B.Sc. (Comp. Sci.) and M. Sc. Statistics and M.Sc. Data Science programme in accordance with NEP 2023 pattern has been unanimously approved by all members of the BOS.

3. **To prepare and approve curriculum of F.Y.B.Sc., F.Y.B.Sc. (CS) Semester-I (2023 pattern) to be implemented from the academic year 2023-2024.**

The Board of Studies (BoS) members meticulously designed and crafted the curriculum for Semester I of the F.Y.B.Sc., F.Y.B.Sc.(CS) program well in advance of the BoS meeting. This preliminary draft was then shared with all BoS members for their input and suggestions to enhance its quality. During the meeting, Dr. Viaks Kakde presented the curriculum of F.Y.B.Sc., F.Y.B.Sc.(CS) course-by-course basis, and the recommendations and valuable insights provided by the BoS members were thoughtfully incorporated into the curriculum. Dr. Akanksh Kashikar, Dr. Rohan Koshti, Dr. Rajendra Gurao and Mr. Saurabh Kadam specifically recommended maintaining consistency in the sub-points of all chapters.

In light of the constructive suggestions offered by the BoS members, the curriculum structure underwent necessary corrections. After thorough deliberation and careful consideration, the curriculum of following courses was presented for approval during the BoS meeting.

Course Structure for F.Y.B. Sc. STATISTICS

Sem	Course Type	Course Code	Course Name	Theory / Practical	Credits
I	Major Mandatory	STA-101-MJM	Descriptive Statistics – I	Theory	02
	Major Mandatory	STA-102-MJM	Discrete Probability and Probability Distributions – I	Theory	02
	Major Mandatory	STA-103-MJM	Statistics Practical – I	Practical	02
	Open Elective (OE)	STA-116-OE	Commercial Statistics	Theory	02
	Open Elective (OE)	STA-117-OE	Introduction to MS-Excel and Statistical Computing	Practical	02
	Vocational Skill Course (VSC)	STA-121-VSC	Introduction to R Programming Language	Theory	02
	Skill Enhancement Course (SEC)	STA-126-SEC	Statistical Computing Using MS-Excel	Practical	02
	Indian Knowledge System (IKS)	STA-137-IKS	Evolution of Science and Statistics in India	Theory	02

Course Structure for F.Y.B. Sc.(CS) STATISTICS

Sem	Course Type	Course Code	Course Name	Theory / Practical	Credits
I	Skill Enhancement Course (SEC)	COS-126-SEC-ST	Introduction to MS Excel and R-Software	Practical	02

Resolution No. 3: The curriculum for F.Y.B.Sc., F.Y.B.Sc. (CS) Semester- I (NEP 2023 pattern) has been unanimously approved by all members of the BoS.

4. **To prepare and approve curriculum of M.Sc.-I Statistics and M.Sc.-I Data Science Semester-I (2023 Pattern) to be implemented from the academic year 2023-2024.**

The Board of Studies (BoS) members meticulously designed and crafted the curriculum for M.Sc.-I Statistics and M.Sc.-I Data Science Semester-I (2023 pattern) program well in advance of the BoS meeting. This preliminary draft was then shared with all BoS members for their input and suggestions to enhance its quality. During the meeting, Mr. Chandrashekhar Swami presented the curriculum on a course-by-course basis, and the recommendations and valuable insights provided by the BoS members were thoughtfully incorporated into the curriculum. During the discussion, some minor changes were suggested

by the board members. The board thoroughly discussed and finalized the syllabus for the courses of M.Sc.-I Statistics and M.Sc.-I Data Science Semester-I.

In light of the constructive suggestions offered by the BoS members, the curriculum structure underwent necessary revisions. After thorough deliberation and careful consideration, the curriculum of following courses was presented for approval during the BoS meeting.

Course Structure for M.Sc. Part I STATISTICS

Sem	Course Type	Course Code	Course Title	Theory/ Practical	No. of Credits
I	Major (Mandatory)	STA-501-MJM	Linear Algebra	Theory	04
	Major (Mandatory)	STA -502-MJM	Probability Distributions	Theory	04
	Major (Mandatory)	STA -503-MJM	Statistics Practical – I	Practical	02
	Major (Mandatory)	STA -504-MJM	Statistics Practical – II	Practical	02
	Major (Elective)	STA-511-MJE (A)	Mathematical Analysis	Theory	04
		STA-511-MJE(B)	Calculus and Statistical Computing	Theory	
	Research Methodology (RM)	STA -521-RM	Research Methodology	Theory	04

Course Structure for M.Sc. Part I Data Science

Sem	Course Type	Course Code	Course Title	Theory/ Practical	No. of Credits
I	Major (Mandatory)	DSC-501-MJM	Probability Distributions	Theory	04
	Major (Mandatory)	DSC -502-MJM	Statistical Inference	Theory	04
	Major (Mandatory)	DSC -503-MJM	Data Science Practical – I	Practical	02
	Major (Mandatory)	DSC -504-MJM	Data Science Practical – II	Practical	02
	Major (Elective)	DSC-511-MJE (A)	Data Base Management System	Theory	04
		DSC -511-MJE (B)	Stochastic Models and Applications	Theory	
	Research Methodology (RM)	DSC -521-RM	Research Methodology	Theory	04

Resolution No. 4: The curriculum for M.Sc.-I Statistics and M.Sc.-I Data Science Semester-I. (2023 pattern) has been unanimously approved by all members of the BoS.

5. **To introduce MOOC Certificate courses from SWAYAM platform for the S.Y.B.Sc and T.Y.B.Sc as per 2022 pattern**

The Board of Studies (BoS) members meticulously to introduce MOOC Certificate courses from SWAYAM platform for the S.Y.B.Sc and T.Y.B.Sc as per 2022 pattern in advance of the BoS meeting. During the meeting, Dr. Viaks Kakade has discussed and valuable insights provided by the BoS members were thoughtfully incorporated.

Resolution No. 5: Considered and Approved

6. **To discuss and incorporate the relevant feedbacks of the stakeholders (students, teachers, parents, alumni and employers) in the curriculum.**

The Chairman initiated the discussion by highlighting the importance of incorporating feedback from both Alumni and current students in the syllabus design process. The department created a curriculum feedback form and distributed it to students, teachers, parents, alumni, and employers. Subsequently, the stakeholders filled out the feedback forms. It was noted that their insights and suggestions would greatly contribute to creating a curriculum that aligns with the needs and expectations of the students. Therefore, the BOS members reviewed the feedback and suggestions given by the alumni and students and incorporated the relevant suggestions into the curriculum of F.Y.B.Sc., M.Sc. Statistics and M.Sc. Data Science.

Resolution No. 6: Considered and Approved

7. **Any other matter with the consent of Chairman.**

During discussion of the syllabus of above motioned courses, the BoS members Dr. Akanksha S. Kashikar, Dr. Rajendra G. Gurao and Mr. Saurabh Kadam have given suggestions regarding some new techniques to be introduced in the syllabus as per the NET / SET and Competitive Exams in Statistics. Also some reference books are suggested in the UG / PG syllabi. We have made changes to the syllabi accordingly of all the mentioned courses.

Resolution No. 7: Considered and Approved

Our BoS members have sent their suggestions regarding UG / PG syllabus through e-mail to BoS Chairman. Dr. Vikas C. Kakade read those suggestions and accordingly relevant changes were made in the syllabi.

Meeting was ended with the vote of thanks proposed by Dr. Neeta Dhane.

Chairman
Board of Studies

IQAC
Coordinator

Principal