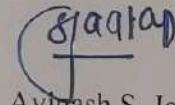Department of Statistics
Date: 07/04/2021

To,
The Secretary,
The Academic Council,
Tuljaram Chaturchand College of Arts, Science and Commerce,
Baramati

Subject: Submission BoS Meeting Report, Syllabus of T.Y.B.Sc., T.Y.B.Com. Statistics (SEM-V) and Academic Framework of T.Y.B.Sc. (SEM- VI) Statistics.

Respected Sir,

The Meeting of Board of Studies in Statistics was held on 6th April, 2021 to design the Syllabus of T.Y.B.Sc., T.Y.B.Com. Statistics (SEM-V) and Academic Framework of T.Y.B.Sc. (SEM- VI) Statistics. In this connection, we have submitting herewith the syllabus of Syllabus of T.Y.B.Sc., T.Y.B.Com. Statistics (SEM-V) and Academic Framework of T.Y.B.Sc. (SEM- VI) Statistics, for approving in the Academic Council of our college. Kindly do the needful in this matter and oblige. Thanking you,

Yours faithfully

Dr. Avinash S. Jagtap
Chairman, BoS Statistics

Encl. :

1. BoS Meeting Report
2. Attendance of BoS Members
3. Syllabus of T.Y.B.Sc. and T.Y.B.Com. (SEM-V) Statistics
4. Academic Framework of TYBSc (SEM-VI) Statistics

Anekant Education Society's
Tuljaram Chaturchand College of Arts, Science and Commerce, Baramati
(Autonomous Status)
(Affiliated to Savitribai Phule Pune University, Pune)

A REPORT
MEETING OF BOARD OF STUDIES IN STATISTICS

Before conducting BoS meeting we have received suggestions during online Google meet scheduled on 06/04/2021, regarding proposed syllabus of the courses T.Y.B.Sc., T.Y.B.Com. Statistics (SEM-V) and Academic Framework of T.Y.B.Sc. (SEM- VI) Statistics. We have made corrections in the proposed syllabus of the mentioned courses accordingly. The Meeting of Board of Studies in Statistics was held online through Google Meet on 6th April , 2021 during 10.00 am to 11.30 am.

AGENDA

1. Confirmation of the minutes of the previous meeting.
2. To design the syllabus of T. Y. B. Com. (Semester V) and T. Y. B.Sc. (Semester V).
3. To design the academic framework of T. Y. B. Sc. (Semester VI)
1. Any other matter with the permission of the chair.

BoS Body :

1.   Dr. Avinash S. Jagtap - Chairman
2.   Mr. Vikas C. Kakade - 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.   Mrs. Trupti S. Arekar – Member (Ad hoc)
8.   Miss. Nilambari A. Jagtap– Member (Ad hoc)
9.   Ms. Priti M. Mohite– Member (Ad hoc)
10. Dr. Akanksha S. Kashikar - Member (Expert from SPPU, Pune)
11. Dr. Vikas B. Ghute - Member (Expert from other university)
12. Dr. Rajendra G. Gurao - Member (Expert from other university)
13. Mr. Saurabh Kadam - Member (Representative from Industry)
14. Mr. Rohan Koshti - Member (Meritorious Alumni)
15. Dr. Jaya L. Limbore – Invitee

The following points were discussed during the BoS meeting :

1. At the beginning of the meeting welcome speech was delivered by Dr. A. S. Jagtap.
2. In this meeting we focused on corrections made in the proposed syllabus according to the suggestions given by BoS members during online Google meet.
3. Syllabus of mentioned courses are explained by our BoS members as follows:

T.Y.B.Sc. Courses :

Semester	Paper Code	Title of Paper	No. of Credits	Name of the Teacher
V	STAT3501	Distribution Theory	3	Dr. Avinash Jagtap
	STAT3502	Statistical Inference- I	3	Dr. Neeta Dhane
	STAT3503	Sampling Methods	3	Dr. Vaishali Patil
	STAT3504	Design of Experiments	3	Mr. Chandrashekhar Swami
	STAT3505	C- Programming	3	Ms. Sarita Wadkar
	STAT3506(A)	Introduction to Stochastic Processes Or	3	Ms. Sarita Wadkar
	STAT3506(B)	Actuarial Statistics		Ms. Aparna Mind
	STAT3507	Statistics Practical- I	2	Mr. Chandrashekhar Swami
	STAT3508	Statistics Practical- II	2	ASJ + NKD + VVP
	STAT3509	Statistics Practical- III	2	Ms. Sarita Wadkar

T.Y.B.Com. Courses:
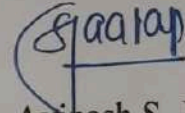
Semester	Paper Code	Title of Paper	No. of Credits	Name of the Teacher
V	STAT-3505 D	Business Statistics II	3	Dr. Vaishali Patil
	STAT-3506 D	Business Statistics III	3	Miss. Nilambari Jagtap

4. Academic framework of TYBSc courses are explained by our BoS members as follows:

TYBSc Courses:

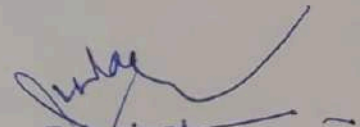| Semester	Paper Code	Title of Paper	No. of Credits
VI	STAT3601	Introduction to Regression Analysis	3
	STAT3602	Statistical Inference- II	3
	STAT3603	Statistical Quality Control and Reliability	3
	STAT3604	Operations Research	3
	STAT3605	Statistical Computing Using R- Software	3
	STAT3606(A)	Official Statistics Or	3
	STAT3606(B)	Biostatistics	
	STAT3607	Statistics Practical- IV	2
	STAT3608	Statistics Practical- V	2
	STAT3609	Project	2

5. During discussion of the syllabus of above motioned courses, the BoS members Dr. Akanksha S. Kashikar, Dr. Rajendra G. Gurao and Mr. Rohan Koshti have given suggestions regarding some new techniques to be introduced in the syllabus as per the Actuarial Society and Competitive Exams in Statistics. We have made changes to the syllabi accordingly of all the mentioned courses.

6. Meeting was ended with the vote of thanks proposed by Prof. V. C. Kakade.

Dr. Avinash S. Jagtap
Chairman,
BoS Statistics

Coordinator
Internal Quality Assurance Cell
Tuljaram Chaturchand College of
Arts,Science and Commerce,
Baramati (Pune)-413102

Principal
Tuljaram Chaturchand College
Baramati

6.3 Multiple logistic regression model.

    6.3.1 Fitting the logistic regression model

    6.3.3 Interpretation of parameters

    6.3.3 Testing of hypothesis in Logistic Regression

6.4 AIC and BIC criteria for model selection.

6.5 Interpretation of output produced by glm command in R

6.6 Examples and illustrations.

Books Recommended

1. Draper, N. R. and Smith, H. (1998) Applied Regression Analysis (John Wiley) Third Edition.

2. Hosmer, D. W. and Lemeshow, S. (1989) Applied Logistic Regression (Wiley). Add Categorical data analysis by Alan Agresti

3. Montgomery, D. C., Peck, E. A. and Vining, G. G. (2003) Introduction to Linear Regression Analysis (Wiley).

4. Neter, J., W., Kutner, M. H., Nachtsheim, C.J. and Wasserman, W. (1996) Applied Linear Statistical Models, fourth edition, Irwin USA.

5. Hosmer, D. W., Lemeshow S., and Sturdivant R. X. (1989) Applied Logistic Regression Wiley

6. Chatterjee S. and Hadi A. S. (2012) Regression Analysis by Example, 5th Edition, Wiley.

7. Kleinbaum G. and Klein M. (2011): Logistic Regression, IIIrd Edition A Self learning text, Springer.

3. Students should be understanding the phases of clinical trials and the types of study designs typically used in clinical trials, use of randomization and blinding.

4. Students should be understanding the purposes for conducting clinical trials.

B) Learning outcomes:

1. Students will be able to understand the basic concept of clinical trials.
2. Students will be able to identify epidemic events in real life situations.
3. Students will be able to understand the designs which typically used in clinical trials.
4. Students will be able to apply appropriate design from clinical trials.

TOPICS/CONTENTS:

Unit-1 Epidemiology (16 L)

1.1 Introduction to Epidemiology

1.2 Odds, odds ratio, relative risk.

1.3 Estimation of odds ratio (OR), Confidence interval for OR. Relation

1.4 Symmetry in square contingency tables, collapsing tables and Simpson's paradox.

Unit-2 Clinical trials (12 L)

2.1 General information on history of drug discovery including Louis Pasteur (rabies and small pox), Ronald Ross and malaria, Alexander Fleming and penicillin, Jonas Salk and polio, cholera, asthma, diabetes, blood pressure, heart attack, arthritis.

2.2 Phases of clinical trial, purpose, duration, cost, drug regulatory bodies, ICH, statistical analysis plan, clinical study report.

Unit-3 Design of clinical trials (15 L)

3.1 Phases of clinical trial, purpose, duration, cost, drug regulatory bodies, ICH, statistical analysis plan, clinical study report.

3.2 Parallel designs, case control studies, longitudinal studies, safety studies

3.3 Treatments, 2 periods cross over design.

Unit-4 Bioequivalence and bio-availability (5 L)

4.1 Bioequivalence and bio-availability, non-inferiority trial

4.2 Practice based medical research, evidence-based medicine

Can we add unit that deals with sample size estimation in clinical trials? Deciding sample size for each phase of trial is key input from Statistician.

≡ **M** Gmail

🔍 Search mail

Compose

Inbox 99

Starred

Snoozed

Sent

Drafts 13

Meet

New meeting

Join a meeting

Hangouts

Something's not right.

We're having trouble connecting to Google. We'll keep trying....

to me

Respected Sir,

I have listed some of the following topics/references which may be added in the respective syllabus of T.Y.B.Sc. (Statistics) course with permission of the Chairman.

Sr.No.	Paper Code	Following topics/references may be added in the syllabus
1	STAT-3502	Invariance property of MLEs (Statement and examples only)
2	STAT-3502	Mukhopadhyay, N. (2020). *Probability and Statistical Inference.* CRC Press. Dixit, U. J. (2016). *Examples in Parametric Inference with R.* Singapore: Springer.
3	STAT-3508	Estimation of population proportion under simple random sampling Study of sampling distribution of estimators, Plotting likelihood functions for standard probability distributions
4	STAT-3503	In Unit 1 of the syllabus the topic 'Unequal Probability Sampling Designs' (Fundamental concepts only) may be added.

Thank you.

--
Rohan D. Koshti

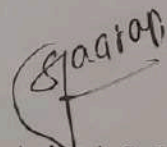Assistant Professor.

Department of Statistics
Date: 09/12/2021

To,
The Secretary,
The Academic Council,
Tuljaram Chaturchand College of Arts, Science and Commerce,
Baramati

Subject: Submission BoS Meeting Report, Revise academic framework of T. Y. B. Sc. Statistics (Semester V and Semester VI), Syllabus of T.Y.B.Sc. Statistics (SEM-VI), and T.Y.B.Com. Statistics (SEM-VI).
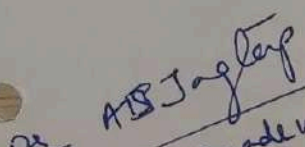
Respected Sir,

The Meeting of Board of Studies in Statistics was held on 08th Dec., 2021 to design the revise academic framework of T. Y. B. Sc. Statistics (Semester V and Semester VI), Syllabus of T.Y.B.Sc. Statistics (SEM-VI) and T.Y.B.Com. Statistics (SEM-VI). In this connection, we have submitting herewith the revise academic framework of T. Y. B. Sc. Statistics (Semester V and Semester VI), Syllabus of T.Y.B.Sc. Statistics (SEM-VI) T.Y.B.Com. Statistics (SEM-VI), for approving in the Academic Council of our college. Kindly do the needful in this matter and oblige. Thanking you,

Yours faithfully

Dr. Avinash S. Jagtap
Chairman, BoS Statistics

Encl. :

1. BoS Meeting Report
2. Attendance of BoS Members
3. revised academic framework of T. Y. B. Sc. Statistics (Semester V and Semester VI),
3. Syllabus of T.Y.B.Sc. Statistics (SEM-VI) and T.Y.B.Com. (SEM-VI) Statistics

Tuljaram Chaturchand College of Arts, Science and Commerce, Baramati
(Autonomous Status)
(Affiliated to Savitribai Phule Pune University, Pune)

A REPORT
MEETING OF BOARD OF STUDIES IN STATISTICS

Before conducting BoS meeting we have received suggestions during online Google meet scheduled on 08/12/2021, regarding proposed syllabus of the courses T.Y.B.Sc., T.Y.B.Com. Statistics (SEM-VI) and revised Academic Framework of T.Y.B.Sc. (SEM- V and SEM- VI) Statistics. We have made corrections in the proposed syllabus of the mentioned courses accordingly. The Meeting of Board of Studies in Statistics was held online through Google Meet on 08th Dec., 2021 during 12.00 Noon to 01.30 PM.

AGENDA
1. Confirmation of the minutes of the previous meeting.
2. To revise the academic framework of T. Y. B. Sc. (Semester V and Semester VI)
3. To design the syllabus of T. Y. B. Com. (Semester VI) and T. Y. B.Sc. (Semester VI).
4. Any other matter with the permission of the chair.

BoS Members Attendance:
1. Dr. Avinash S. Jagtap - Chairman
2. Mr. Vikas C. Kakade - 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. Miss. Nilambari A. Jagtap– Member (Ad hoc)
8. Ms. Priti M. Mohite– Member (Ad hoc)
9. Dr. Akanksha S. Kashikar - Member (Expert from SPPU, Pune)
10. Dr. Rajendra G. Gurao - Member (Expert from other university)
11. Mr. Saurabh Kadam - Member (Representative from Industry)
12. Mr. Rohan Koshti - Member (Meritorious Alumni)
13. Dr. Jaya L. Limbore – Invitee

The following points were discussed during the BoS meeting :

1. At the beginning of the meeting welcome speech was delivered by Dr. A. S. Jagtap.
2. In this meeting we focused on corrections made in the proposed syllabus according to the suggestions given by BoS members during online Google meet.
3. Syllabus of mentioned courses are explained by our BoS members as follows:

Academic Framework of T.Y.B.Sc. (SEM- V and SEM- VI) Statistics

Semester	Paper Code	Title of Paper	No. of Credits
V	STAT3501	Distribution Theory	3
	STAT3502	Statistical Inference- I	3
	STAT3503	Sampling Methods	3
	STAT3504	Design of Experiments	3
	STAT3505	C- Programming	3
	STAT3506(A) STAT3506(B)	Introduction to Stochastic Processes Or Biostatistics	3
	STAT3507	Statistics Practical- V	2
	STAT3508	Statistics Practical- VI	2
	STAT3509	Statistics Practical- VII	2
	CC	Certificate Course	2
VI	STAT3601	Introduction to Regression Analysis	3
	STAT3602	Statistical Inference- II	3
	STAT3603	Statistical Quality Control and Reliability	3
	STAT3604	Operations Research	3
	STAT3605	Statistical Computing Using R- Software	3
	STAT3606(A) STAT3606(B)	Actuarial Statistics Or Official Statistics	3
	STAT3607	Statistics Practical- VIII	2
	STAT3608	Statistics Practical- IX	2
	STAT3609	Project	2

Note:

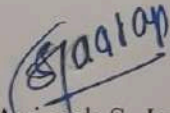| Paper Code	Title of Paper	Practical Based on Paper
STAT3507	Statistics Practical- I	Design of Experiments
STAT3508	Statistics Practical- II	Distribution Theory, Statistical Inference- I and Sampling Methods
STAT3509	Statistics Practical- III	C- Programming
STAT3607	Statistics Practical- IV	Introduction to Regression Analysis and Operations Research
STAT3608	Statistics Practical- V	Statistical Inference- II and Statistical Quality Control and Reliability

T.Y.B.Sc. Courses :

Class	Sem	Paper Code	Title of Paper		Credits	Name of the Teacher
T.Y.B.Sc.	VI	STAT3601	Introduction to Regression Analysis		3	Ms. P. M. Mohite
		STAT3602	Statistical Inference- II		3	Dr. N. K. Dhane
		STAT3603	Statistical Quality Control and Reliability		3	Dr. V. V. Patil
		STAT3604	Operations Research		3	Mr. C. P. Swami
		STAT3605	Statistical Computing Using R-Software		3	Dr. V. C. Kakade
		STAT3606(A) STAT3606(B)	Official Statistics Actuarial Statistics	Or	3	Dr. V. V. Patil Ms. A. S. Mind
		STAT3607	Statistics Practical- VIII		2	Mr. C. P. Swami
		STAT3608	Statistics Practical- IX		2	Dr. N. K. Dhane
		STAT3609	Project		2	Dr. V. C. Kakade
T.Y.B.Com.	VI	STAT-3605 D	Business Statistics V		3	Dr. V. V. Patil
		STAT-3606 D	Business Statistics VI		3	Miss. N. A. Jagtap

T.Y.B.Com. Courses:
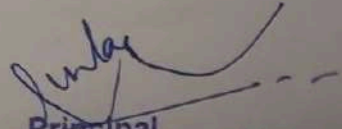
Semester	Paper Code	Title of Paper	No. of Credits	Name of the Teacher
V	STAT-3605 D	Business Statistics V	3	Dr. V. V. Patil
	STAT-3606 D	Business Statistics VI	3	Miss. N. A. Jagtap

4. During discussion of the syllabus of above-mentioned courses, the BoS members Dr. Akanksha S. Kashikar, Dr. Rajendra G. Gurao, Mr. Rohan Koshti 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. We have made changes to the syllabi accordingly of all the mentioned courses.

5. Meeting was ended with the vote of thanks proposed by Prof. V. C. Kakade.

Coordinator
Internal Quality Assurance Cell
Tuljaram Chaturchand College of
Arts,Science and Commerce,
Baramati (Pune)-413102

Dr. Avinash S. Jagtap
Chairman,
BoS Statistics

Principal
Tuljaram Chaturchand College
Baramati