

5

Minutes of the Board of Studies (Mathematics, UG & PG)
held on 20-4-2015.

Members Present.

1. Dr. E. Krishnan.
Rtd Professor & Head
University College T.V.M.
2. Dr. M.N. Narayanan Nambuthiri
Professor (Rtd)
Dept of Mathematics, Cusat.
3. K.G. Sudharani
4. Dr. George Mathew
5. P.V. Mathai
6. T.M. Safia
7. Geya Augustine
8. M.Mali I.K.

E. Krishnan

M.N. Narayanan Nambuthiri

K.G. Sudharani

George Mathew

P.V. Mathai
T.M. Safia
Geya Augustine
M.Mali I.K.

The first meeting of the Board of Studies (Mathematics UG and PG) was held at 10 Am on 20-4-2015.

Dr. E. Krishnan presided over the meeting.

Subject expert Dr M.N. Narayanan Nambuthiri Rtd Prof Cusat was also present in the meeting.

The meeting began with Silent Prayer.

Copies of the syllabus of BSc degree programme and MSc degree programme were distributed to the members. General

discussions on the syllabi, the challenges in restructuring the syllabus and curriculum was held.

We have decided to change the Thomas Calculus text for the BSc Programme to

Lindsay N. Childs (2nd edition).

For the Msc Course after discussion, we concluded the changes as follows.

Semesters - I

1. Abstract Algebra. (Previous is Semesters-2)
2. Real Analysis. (")
3. Measure Theory I (New paper introduced)
Text -
4. Mechanics - (Elective I). (")
5. Complex Analysis.

Semesters - II

6. Linear Algebra. (Previous is Semesters-1)
7. Metric space. (New paper introduced)
8. Advanced Complex Analysis.
9. Measure Theory - II (New paper introduced)
10. Graph Theory - (Elective-II) (Previous is Semesters-1).

Semesters - III

11. Multi Variate Calculus and Integral Transforms.
12. Functional Analysis - I. (Newly introduced)
13. Differential Geometry.
14. Analytic Number Theory (Elective III) (Previous is IV semester)
15. Topology - I. (Previous is Ist Semester).

Semesters - IV

16. Functional Analysis - II. (Newly introduced)
17. O.D.E. (")
18. Topology - II. - (Previous is II semester)
19. P.D.E. - (Previous is II semester)
20. Lie Algebra - (Elective IV)

7

As of now we are
planning to make the above changes
to the Academic year 2016-2017.
Because of the unavailability of Text-
Books and need of more detailed
discussions.

The meeting came to a
close at 4.30 pm

K. G. S. dhu

K. G. S. dharani

Minutes of the Department Council meeting held on 18-8-15

Agenda - Selection of Resource person for curriculum restructuring workshop proposed to be held on 9th & 10th Sep 2015

Members Present: -

- | | |
|----------------------|-----------------------|
| 1) T-M. Safiya | <u>Isfn</u> |
| 2) Dr. Bloomy Joseph | <u>Bloomy B.J.</u> |
| 3) Jyo Augustine | <u>Jyo. Augustine</u> |
| 4) Jaya S. | <u>Jaya S.</u> |
| 5) Thasneem T.R. | <u>Thasneem</u> |
| 6 Murali T. Kr. | <u>Murali</u> |

The meeting started by 3:30 p.m.

Prof. K.G. Sudharani (Principal, Kodencherry Govt. College)
Dr. George Mathew (Professor, CPTC, Perumbavoor)
P. Padmanabhan (Rtd ISRO Scientist), Dr. Mary Matilda
(Rtd Principal), Prof. Ashakumari (Rtd. Professor)
Dr. Vinodkumar (Professor & HOD Rajagiri College)
Dr. Paul Isaac (Associate Professor, Bharat Matha College)
are selected as resource persons for Linear
Algebra, Topology, Computer Application, discrete Mathematics
calculus, Differential Geometry, Abstract algebra
respectively. In order to go deep into each & every
paper it is also decided to conduct parallel
sessions chaired by each of these resource person.
The meeting come to a close by 4:30 p.m.

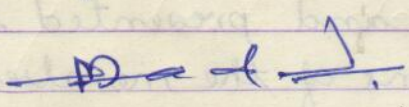
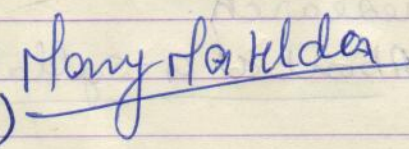
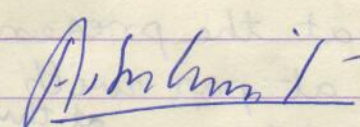
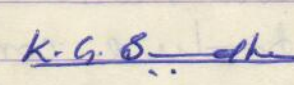
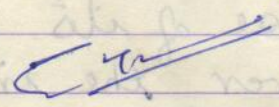
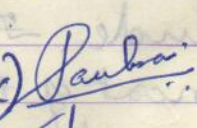
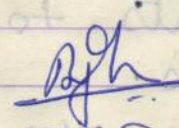
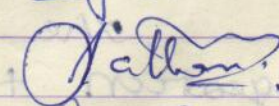
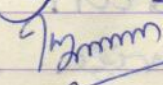
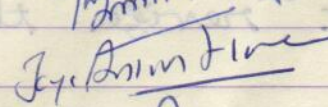
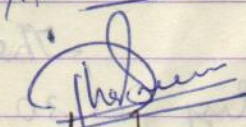
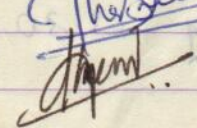
Bloomy B.J.
Dr. Bloomy Joseph

Minutes of the Board of studies (Mathematics UG & PG)

Held on 08-09-'15 at H.O.D's chamber

Agenda:- ~~The~~ Revision of UG & PG Syllabus.

Members Present

- 1) P. Padmanabhan 
Rtd. ISRO Scientist
Director
Sankya Systems & Objectives Ltd.
Bangalore - 560078
2. Dr. Mary Mathilda P.V 
CRtd Principal - Maharaja's College)
3. Asha Kumari K. (CRtd Professor) 
4. K. G. Shantha Rao (Principal) 
Kodencherry College
5. Dr. George Mathew (Professor) 
CPTC Perumbavoor
6. Dr. Paul Isaac (Associate Professor, BMC) 
7. T. M. Safiya 
8. Dr. Bloomy Joseph 
9. P. V. Mathai 
10. Jaya S 
11. Jey Augustine 
12. Thasneem T.R 
13. Murali T.R. 

The meeting started at 9.30 a.m.

As per the direction of BOS members based on the meeting held on 20-4-'15, PG syllabus was outlined and presented before the BOS members.

But some of the members opined that all UGC-CSIR syllabus may be covered by 3rd semester. So that students are able to attend CSIR-UGC exam after their 3rd semester itself, and that will enhance the students to open the door of research.

About U.G. syllabus

Most of the BOS members ~~have~~ the opinion that the present M.C. university curriculum is at par with most of the highly ranked universities in India. So ^{at this stage} ~~no~~ drastic changes are ^{not} required.

Board member Sri. P. Padmanabhan opined to introduce computer programming and Mechanics because of its significance in this present era. Moreover the internal Board members suggest to include Fourier & Laplace transforms. Also most of them suggested to add Numerical Analysis. So as to equip the students to compete in national level exams.

The meeting conclude with the suggestion to include the above topics & revise the existing syllabus.

The meeting came to a close by 3.30 pm.

Bloomy P. J.
Dr. Bloomy Joseph.

Curriculum Restructuring Workshop (9-10 Sept. 2015)

09/09/2015

Members Present-

- 1) K. G. Sunda Rani ~~K. G. Sunda Rani~~
PRINCIPAL
KODENCHERRY.
2. Dr Mary Mathilda PV Mary Mathilda
3. Dr. Vinod Kumar P. S
Principal in Mathematics
Rajagiri School of Engineering
Cochin - 39 Vinod
4. Asha Kumari K. A. K. Kumari
5. Dr. George Mathew George Mathew
6. Dr. Paul Isaac Paul Isaac
7. Dr. Ramkumar P. B. Ramkumar
8. T. M. Safiya T. M. Safiya
9. Dr. Bloomy Joseph Bloomy Joseph
10. P. V. Mathew P. V. Mathew
11. Jaya S Jaya S
12. Jy. Brindine Jy. Brindine
13. Thasneem T. R Thasneem
14. M. Mali T. K. M. Mali T. K.

14
Report (Program schedule attached)

3 sessions were handled by Prof. Ashakumari and she explained ^{the} relevance of limit & continuity in UG level.

3 sessions were handled by Dr. Mary Matilda suggested to include basic ideas of Graph theory, Lattice theory in UG level. She also suggested to include advance level ^{topic} of graph theory in PG level, so as to equip the students for research.

2 sessions were handled by Dr. Paul Isaac & explained relevance of Abstract algebra in UG & PG.

one session was handled by Dr. George Mathew & he explained the importance of studying Metric space in detail.

one session was handled by Prof K.G. Sudha Rani and she explained importance of Linear Algebra in PG level

One session was handled by P. Padmanabhan & he explained the applications of mathematics in Space Science

Bloomy Joseph
Dr. Bloomy Joseph

Curriculum Restructuring Workshop 10th Sept 2015

Members Present

- 1) Asha Kumari K. A. Kumari
- 2) K.G. Susha Rani K.G. Susha
- 3) Dr. George Mathew G. Mathew
- 4) P. J. Manojkumar P. P. J. Manojkumar
- 5) Dr. Paul Isaac Paul Isaac
- 6) Dr. Ramkumar P.B. Ramkumar
7. T.M. Safiya T.M. Safiya
8. Dr. Bloomy Joseph Bloomy Joseph
9. P. V. Mutha P. V. Mutha
10. Jaya S. Jaya S.
11. Jaya Augustine Jaya Augustine
13. Thasneem T.R. Thasneem

Report (10/9/15)

3 sessions of the 10th 2nd day's workshop were handled by Dr. P.B. Vinodkumar & he explained the relevance of calculus on Manifolds in PG level.

2 sessions were handled by P. Padmanabhan & he explained the importance of computer application.

2 sessions were handled by Dr. Paul Isaac & explained the relevance of topology in PG level.

Sudha Teacher & Asha Teacher explained the importance of complex analysis & operation Research respectively in their sessions.

Bloomy B. J.
Dr. Bloomy Joseph

September 11 - 2015

Board Of Studies Meeting

Agenda - Finalization of curriculum syllabi (pc)
and presentation of draft of the UG syllabus

Members Present

- 1) Padmanabhan P.
- 2) Dr. M.N. Narayanan. Nambuthiri
- 3) Mary Mathilda P.V
4. Paul Isaac
5. Asha Kumari K.
6. T.H. Safiya
7. Dr. Bloomy Joseph
8. R.V. Mathan.
9. Jaya S.
10. Jaya Augustine
11. Thasneem T.R
12. Murali T.K.

~~Dr. M.N. Narayanan~~

Mary Mathilda

Jaya S.

Paul Isaac

Dr. Bloomy

Thasneem

R.V. Mathan.

Jaya Augustine

Murali T.K.

Board meeting started at 9.30 a.m.

In continuation of the meeting held on 08-09-'15 PC syllabus is finalized in the following manner.

M.Sc. Mathematics Program (syllabus attached)

PC means program course (core)

PE means program elective

Semester - I

PC1 - Linear Algebra

PC2 - Metric Space

PC3 - Real Analysis

PC4 - Graph Theory

PC5 - Complex Analysis

Semester - II

PC6 - Abstract algebra

PC7 - Topology I

PC8 - Advanced Complex Analysis

PC9 - Ordinary differential equations

PC10 - Measure theory and integration

Semester - III

PC11 - Number theory & cryptography

PC12 - Functional Analysis

PC13 - Topology - II

PC14 - Partial Differential equations

PC15 - Optimization Techniques

Semester - IV

PC16 - Spectral Theory

4 should be selected from 12 electives
 (According to the preference of majority)

PE1 Analytic Number theory

PE2 multivariate calculus, Integral transform & principles of Manifolds.

PE3 Differential Geometry

PE4 Theory of wavelet

PE5 classical mechanics

PE6 Probability theory

PE7 Special functions

PE8 Commutative Algebra

PE9 Algebraic Geometry

PE10 Fractal Geometry

PE11 Coding Theory

PE12 Lie Algebra

And it is decided to send the ~~draft~~
~~of the~~ syllabus to all the BOS members. The
 revised syllabus is appended herewith.

Draft of the UG syllabus is prepared
 with the modification & rearrangement of topics
 in the existing M.G. university syllabus.

Main additions ^{include} computer programming
~~and~~, some topics like Fourier series
 transforms & Numerical Analysis ~~and~~.

Slight modifications are
 also done in complementary program.

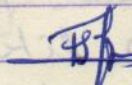
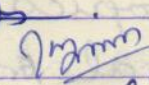
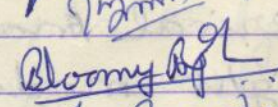
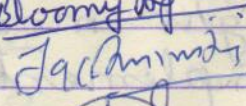
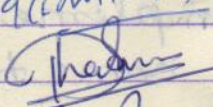
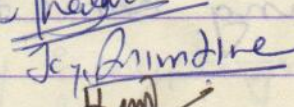
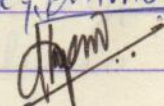
The meeting came to an end by 2pm.

Bloomy ^{BGL}
 or Bloomy Joseph

Minutes of the Department Council meeting held on 16-10-'15

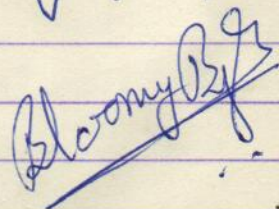
Agenda - Selection of the Resource person for curriculum restructuring workshop proposed to be held on 26th & 27th October 2015.

Members Present

1. T.M. Safiya 
2. Jaya S. 
3. Dr. Bloomy Joseph 
4. Jaya Augustine 
5. Thasneem T.R. 
6. Jay Augustine 
7. Mmalik T.K. 

The meeting started by 3.30 p.m.
 Prof. Ashakumari, Dr. Ramkumar P.B.
 (Cst. Albert's College), Pramadha Ramachandran
 (Cst. Paul's College), Dr. Paul Isaac are selected
 as resource persons to handle
 Transforms, Numerical Analysis, Differential
 Equations, Real Analysis respectively.
 In order to go deep into each & every
 paper it is also decided to conduct
 parallel sessions with these resource
 persons.

The meeting came to a close by 4.30 pm.



PA

PE 7

PE 8

PE 9

PE 10

PE 11

SA

CO

Curriculum Restructuring Workshop on 26-10-15

Members present

1) Poornada Ramachandran

Poornada

2) Dr. Paul Isaac

Paul Isaac

3) Dr. Ramesh P. B

Ramesh

4) Ashakumari K

Ashakumari

5) T. M. Safiya

T.M. Safiya

6) Dr. Bloomy Joseph

Bloomy Joseph

7) Jaya S

Jaya S

8) Jaya Augustine

Jaya Augustine

9) Thasneem T.R

Thasneem

10) Murali T.K.

Murali T.K.

Report (26/10-'15) program schedule attached

Prof. Ashakumari explained the necessity of reording the topics of present M.A. university UG syllabus for both core & complementary.

Prof. Pramadha emphasised the importance of Differential Equations in UG level during her session.

Dr. Paul Isaac explained the relevance of combinatorics in UG level during his session.

In his session, Dr. Ramkumar pointed out the importance of fuzzy Mathematics in the curriculum.

Alamy B

Curriculum Restructuring Workshop on 27-10-15

Members present

Pramada Ramachandran

Pramada

Dr. Paul Isaac

Paul Isaac

Dr. Ramkumar P.B

Dr. Ramkumar

Ashakumari K.

Ashakumari K.

T. H. Saffiyi

T. H. Saffiyi

Dr. Bloomy Joseph

Bloomy Joseph

Jaya S.

Jaya S.

Jaya Augustine

Jaya Augustine

Thasneem T.R

Thasneem T.R

Murali T.K.

Murali T.K.

Report.

Prof. Ashakumari suggested to some topics of core and complimentary in the existing syllabus, during her sessions.

Prof. Pramada suggested to include Fourier & Laplace transforms in UG level, during her sessions.

Dr. Paul Isaac suggested to include Numerical Analysis as core paper during his sessions.

Dr. Ramkumar P.B. suggested to include LATEX & any programming language in UG level.

Bloomy Joseph

Minutes of the Department Council meeting held on 27-11-15

Agenda - selection of Resource person for curriculum restructuring workshop on Question Paper Setting Proposed to be held on 7th December 2015.

Members Present -

- 1) T.M. Sajeji
- 2) Jaya S
- 3) Dr. Bloomy Joseph
- 4) Jaya Augustine
- 5) Thasneem T. R
- 6) Murali - T.K.

Bps

Jmm

Bloomy Aji

Jaya Augustine

Thasneem

Murali

The meeting started by 3:30pm.

Dr. Paul Isaac, Dr. Assia N.V. (Professor, Naval Academy, Ezhymala) Prof. Ashakumari K, P. Padmanabhan, Pramada Ramachandran Dr. George Mathew are selected as Resource Person for Question Paper Setting in Algebra, Topology, Calculus computer programming, Differential Equations Number theory respectively. In order to go deep into each topic. It is also decided to conduct parallel sessions, for completing the workshop within time.

The meeting came to a close by 4:30pm.

Bloomy Aji
Dr. Bloomy Aji

Workshops on Question Paper Setting on 7-12-15

Members present

- | | |
|-------------------------|--------------------------|
| 1. Parnada Ramachandran | <u>Parnada</u> |
| 2. Prof. N.V. Asim | <u>Prof. N.V.</u> |
| 3. Dr. George Mathew | <u>Dr. G. Mathew</u> |
| 4. Dr. Mary Mathilda | <u>Mary Mathilda</u> |
| 5. P. P. of musliman | <u>P. P. of musliman</u> |
| 6. Dr. Paul Isaac | <u>Dr. Paul Isaac</u> |
| 7. Dr. Ramkumar P B | <u>Dr. Ramkumar P B</u> |
| 8. Asha Kumari K. | <u>Asha Kumari K.</u> |
| 9. T.M. Safiyi | <u>T.M. Safiyi</u> |
| 10. Dr. Bloomy Joseph | <u>Dr. Bloomy Joseph</u> |
| 11. Jaya S | <u>Jaya S</u> |
| 12. Jaya Augustine | <u>Jaya Augustine</u> |
| 13. Thasneem T.R | <u>Thasneem T.R</u> |
| 14. Musali T.K. | <u>Musali T.K.</u> |

Report (7-12-'15) Program schedule attached

Dr. Paul Isaac gave his views in Question paper setting in Algebra. ~~He also suggested that the importance of~~
Algebra paper.

Dr. Assia suggested ^{that of the questions} 30% should be of difficult level / application level. She also gave her expert views in setting Question Paper in Topology.

In programming ^{Paper}, Padmanabhan suggested ^{that} 60% of the questions should be problems in programming. And also gave his views in setting Problems.

In Differential ^{Paper}, Pramadha suggested ^{that} 80% of the questions should be problems in D.E in UG level. And in P.G level 20% should be direct problems, 20% should be application level problems and ~~rest~~.

Dr. George Mathew gave his expert views in setting Question Paper in Number theory.

Bloomy B J
Dr. Bloomy Joseph

BOS meeting on 10-12-15

Agenda - Finalization of U.G. Syllabus

Members present.

- | | |
|-------------------------|-----------------------|
| 1. Prof. N.V. Arora | <u>Prof. N.V.</u> |
| 2. Dr. George Mathew | <u>Dr. Mathew</u> |
| 3. Dr. Mary Mathew P.V. | <u>Mary Mathew</u> |
| 4. P. P. S. S. S. S. | <u>P. P. S. S. S.</u> |
| 5. Dr. Paul Isaac | <u>Paul Isaac</u> |
| 6. Asha Kumari K. | <u>A. Kumari</u> |
| 7. T. H. Saffy | <u>T. H. Saffy</u> |
| 10. Dr. Bloomy Joseph | <u>Bloomy Joseph</u> |
| 11. Jaya S | <u>Jaya S</u> |
| 12. Jaya Augustine | <u>Jaya Augustine</u> |
| 13. Thasneem T.R. | <u>Thasneem</u> |
| 14. Murali T.K. | <u>Murali</u> |

Board meeting started at 9.30 a.m.
In continuation of the workshops & meeting held on previous days UG syllabus is finalized in the following manner.

Details (BSc Mathematics - core course)

Semester	Title of the course
1	Foundation of Mathematics
2	Analytic Geometry, Trigonometry and Matrices.
3	Calculus
4	Vector Calculus, Theory of Equations & Numerical
5	(1) Mathematical Analysis
	(2) Differential Equations
	(3) Abstract Algebra
	(4) Fourier Series and Numerical Analysis
	(5) Elective core Course should be selected from following list)
6	(i) Fuzzy Sets (ii) C-Programming (iii) Mechanics
	(1) Real Analysis
	(2) Complex Analysis
	(3) Discrete Mathematics
	(4) Linear Algebra & Metric Spaces
	(5) Elective core Course should be selected from following list)
	(i) Operations Research (ii) Computer Programming
	(iii) Combinatorics
	(6) Project

And it is decided to send the syllabus to all the BOS members. The revised syllabus is appended herewith.

The meeting came to an end by 2 p.m.

[Signature]

BOS meeting on 29/01/2016

Agenda - Finalization of UG & PG syllabus by external experts (AC)

Members Present:-

1. E. K. K. K.
2. M. N. N. Nambodir
3. T. M. Safiya
4. Dr. Bloomy Joseph
5. Jaya S
6. Jaya Augustine
7. Murali T.K.
8. Thasneem T.R.

E. K. K. K.
M. N. N. Nambodir
T. M. Safiya
Dr. Bloomy Joseph
Jaya S
Jaya Augustine
Murali T.K.
Thasneem T.R.

Board meeting started at 1 p.m. Draft the syllabus was almost finalized in the light of the discussions held in the previous BOS meetings & workshops. But the external experts were not present in most of these meetings. Under the above circumstance, the syllabus was presented before the subject experts only on 29th January 2016 and a thorough discussion was held. The following suggestions were emerged in the discussion.

- (i) for the second core course 'Analytic Acrometry', text book of Thomas or Anton would be better than the proposed one by Manikavachagom Pillai.

content of IIIrd & IVth semester papers are to be corrected accordingly.

- (iii) for 5th / 6th semester elective, C-programming is to be replaced with 'Python' / Latex
- (iv) for sixth semester the paper 'discrete mathematics' is to be replaced with 'combinatorics / trans forms / Number Theory / Graph theory / Numerical Analysis'
- (v) for 5th semester 'gussy mathematics' is to be replaced with one of the above papers

Accordingly these are incorporated and syllabus correction is done and the revised syllabus is attached herewith for the approval of academic Council.

UG syllabus - Mathematics

Semester	Title of the course
1	Foundation of Mathematics
2	Analytic Geometry & Matrices
3	Calculus
4	Vector & Integral Integral Calculus, Theory of Equations & Numerical Methods
5	(1) Mathematical Analysis
	(2) Differential Equations
	(3) Abstract-Algebra
	(4) Fourier Series & Numerical Analysis
	(5) (Elective) choice Based Paper I
	one should be selected from the following list.
	(i) Combinatorics
	(ii) Introduction to Higher Algebra (iii) Mechanics

- 6.
- (1) Real Analysis
 - (2) Complex Analysis
 - (3) Transforms & special functions
 - (4) Linear Algebra
 - (5) choice Based Paper II

One should be selected from the following list

- (i) Operations Research
- (ii) Graph Theory
- (iii) Computer Programming (Practical)

The Draft of the P.G. Syllabus is unanimously accepted (Draft is given in BOS meeting on 11th September 2015) by the external experts and the meeting came to a close by 4.30 pm.

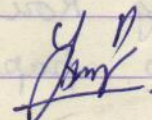
Bloomy B. J.
 Dr. Bloomy Joseph.

BOS meeting on 6-7-'18

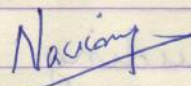
Agenda - Modification of existing Autonomy P.G. syllabus, in light of total performance of 1st P.G. Autonomy batch.

Members Present-

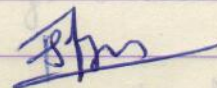
1. Dr. Vinod Kumar. P. B



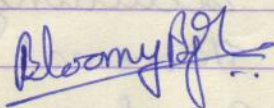
2. Dr. K. P. Naveena Chandran



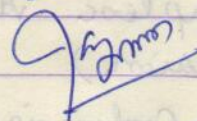
3. T. M. Safiya



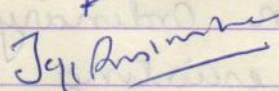
4. Dr. Bloomy Joseph



5. Dr. Jaya S



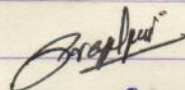
6. Jaya Augustine



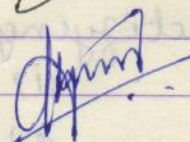
7. Thasneem T. R.



8. Dr. Pramod



9. Murali T. K.



10. Viji E. B.



The meeting started at
In the light of the total performance of the 1st Autonomy P.G. batch, it is decided to modify the existing autonomy syllabus.

In continuation to this members made the following recommendations.

- (1) changing the text books of Topology from Willard to Joshy without altering the content
- (2) Including Rouchi's thm in Module 3 of Complex Analysis paper.
- (3) ~~Excluding~~ ^{En}cluding proof of Sylow's theorems in Module 3 of Abstract Algebra.
- (4) Excluding proof of "The Riemann Mapping Theorems" in Module 1 of Advanced Complex Analysis and Maximum Principle (2nd Version.)
- (5) In Ordinary differential equations, chapter 1 of existing syllabus, sections 1 to 1.5 can be taken as pre-requisite and no question should be asked under this sections.
- (6) Rectifying the corrections in,
 - (i) Question paper pattern
 - (ii) sections of some modules
 - (iii) Time durations allotted for Modules.

Based on this the board decided to modify the syllabus & meeting came to an end at 5pm.

Blomby