1.1.3 & 1.2.1

# Supporting Documents- Mathematical Sciences

## Approved MoMs of BoS / Academis council highlighting the name of new courses introduced_ 1.2.1

# I. K. Gujral Punjab Technical University

## Department of Mathematical Sciences

### Minutes of the meeting of Board of Studies (BOS) of Mathematics held on July 11, 2017

The meeting of Board of studies of Mathematics was held on 11/07/2017. The following members were present in the meeting

1. Prof. Vinay Kanwar
2. Prof. D. S. Pathania
3. Dr. S. K. Srivastava
4. Dr. Ashish Aarora
5. Dr. Arvind Sharma
6. Dr. Honey Sharma
7. Dr. Harpreet Kaur
8. Dr. Vikramjeet Singh
9. Dr. Gurjinder Singh
10. Dr. Rajesh Narula (Special Invitee)
11. Dr. Megha Goyal (Special Invitee)

The following recommendations were given by the Board:

**Agenda 1.** The board recommended the reshuffling of subjects of various semesters as follows:

**Semester-I:**

(i) Fundamentals of Computer and C programming (MMS-105) is recommended to be replaced by Mathematical Methods (MMS-402). Hence the subject Mathematical Methods now may be given new code of MMS-105.

(ii) Fundamentals of Computer and C Programming Lab (MMS-106) is recommended to be replaced with Mathematical Software Lab and may be assigned the code MMS-106.

**Semester-II:**

(i) Tensors and Differential Geometry (MMS-204) is recommended to be replaced by Partial Differential Equations (MMS-403). Hence the subject Partial Differential Equations now may be given new code of MMS-204.

**Semester-III:**

(i) Operations Research (MMS-302) is recommended to be replaced with Number Theory and Cryptography (MMS-508). The Operations Research is recommended to be incorporated in the list of Elective-I. Subject code of Operations Research may be assigned as MMS-503 and subject code of Number theory and cryptography may be given as MMS-302.

**Semester-IV:**

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(i) Discrete Mathematics (MMS-401) is recommended to be replaced by Mechanics-II. Hence the subject Mechanics-II now may be given new code of MMS-401.
(ii) Mathematical Methods (MMS-402) is recommended to be replaced by Mathematical Statistics-II. Hence the subject Mathematical Statistics-II now may be given new code of MMS-402.
(iii) Partial Differential equations (MMS-403) is recommended to be replaced by Tensors and Differential Geometry (MMS-204). Hence the subject Tensors and Differential Geometry (MMS-204) now may be given new code of MMS-402.

**Elective Subjects:**
The list of Electives was reviewed by the Board and following changes/incorporations were suggested

**Elective-I**

**MMS-501 Wavelet Theory**
**MMS-502 Coding Theory**
**MMS-503 Operations Research**
**MMS-504 Advanced Linear Algebra**

**Elective-II**

**MMS-505 Advanced Complex Analysis**
**MMS-506 Advanced Operations Research**
**MMS-507 Advanced Fluid Mechanics**
**MMS-508 Advanced Solid Mechanics**

**Elective-III**

**MMS-509 Theory of Linear Operators**
**MMS-510 Advanced Numerical Methods**
**MMS-511 Topological Vector Spaces**
**MMS-512 Fractional Calculus**

**Revision of Instructions for paper setters and candidates:**

The following changes were recommended by the Board for examination of M.Sc. (Mathematics)
(i) The entire question paper should be distributed into three sections viz. Section-A, Section-B, Section-C
(ii) Section-A should contain eight question of two marks each. This section should cover the entire syllabus. All questions in this section should be compulsory.
(ii) Section-B and Section-C should contain three questions each carrying 16 (sixteen) marks.

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(iii) Student should be asked to attempt at least two questions from Section-B and Section-C each.
(iv) The awards for internal and external examination should be in 20:80 ratio.

**Revision of course contents:**
It was recommended by the Board that for revision of course contents external experts of different Universities may be requested.
(i) The following is the list of courses and the corresponding experts as recommended by the Board:

| S. No | Course Code | Course Title | Expert | University |
|---|---|---|---|---|
| 1. | MMS-101 | Algebra-I | Prof. D. K. Khurana | Panjab University |
| 2. | MMS-201 | Algebra-II | Prof. D. K. Khurana | Panjab University |
| 3. | MMS-102 | Real Analysis-I | Dr. Vikas Bist | Panjab University |
| 4. | MMS-202 | Real Analysis-II | Prof. T. D. Narang | Guru Nanak Dev University |
| 5. | MMS-103 | Complex Analysis | Prof. S.S. Dhaliwal | SLIET, Longowal |
| 6. | MMS-104 | Ordinary Differential Equations and Special Functions | Dr. S.K. Srivastav | BCET, Gurudaspur |
| 7. | MMS-106 | Software Lab | Dr. Honey Sharma, Dr. Arvind Sharma, Dr. Gurjinder Singh | Main Campus and affiliated colleges |
| 8. | MMS-205 | Numerical Analysis | Prof. Vinay Kanwar | Panjab University |
| 9. | MMS-206 | Numerical Analysis Lab | Prof. Vinay Kanwar | Panjab University |
| 10 | MMS-203 | Mechanics-I | Prof. S. K. Tomar | Panjab University |
| 11. | MMS-401 | Mechanics-II | Prof. S. K. Tomar | Panjab University |
| 12. | MMS-301 | Topology | Dr. N. S. Noorie | Punjabi University |
| 13. | MMS-302 | Number Theory and Cryptography | Prof. A. K. Agarwal | Panjab University |

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| | | | | |
|---|---|---|---|---|
| 14. | MMS-303 | Mathematical Statistics-I | Prof. Narinder Kumar | Panjab University |
| 15. | MMS-402 | Mathematical Statistics-II | Prof. Narinder Kumar | Panjab University |
| 16. | MMS-403 | Tensors And Differential Geometry | Prof. R. K. Nagaich | Punjabi University |

It was also recommended by the Board that the course contents of the subjects of Electives shall be discussed in detail in the next meeting. It was also recommended that the changes in Semester-I should be implemented with immediate effect in anticipation of the approval of Academic Council as the changes are quite necessary and the semester is scheduled to begin from August 1, 2017. The course contents of Number Theory and Cryptography (MMS-302) and Functional Analysis (MMS-304) should be reviewed immediately and necessary changes must be incorporated with immediate effect.

**Agenda 2.**

After discussion the board recommended the following changes in credit of various subjects

(i) In Semesters-III, for the subject Elective-I (MMS-XXX), one tutorial period is recommended to be added. Now, the subject Elective-I is recommended to be of 5 credits.

(ii) In Semesters-IV, for the subject Elective-III (MMS-ZZZ), one tutorial period is recommended to be added. Now, the subject Elective-III is recommended to be of 5 credits.

(iii) It was also recommended that the course codes henceforward be changed. MMS in all course codes may be replaced with MSM to avoid any further confusion.

The meeting ended with the vote of thanks,

Prof. Vinay Kanwar — Prof. D. S. Pathania — Dr. S. K. Srivastva 11-7-17

Dr. Ashish Arora — Dr. Honey Sharma — Dr. Arvind Sharma 11/07/17

Dr. Harpreet Kaur 11.07.2017 — Dr. Vikramjeet Singh — Dr. Gurjinder Singh 11/7/17

Dr. Rajesh Narula 11.7.2017 — Dr. Megha Goyal 11/7/2017

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Attendance Sheet

Meeting of...BOS Mathematics.....

held on ..11/07/2017..... at .....11:00 AM..... meeting hall, Academic Deptt. IKG PTU

| Sr. No. | Name & Address | Contact Number | E-Mail I.D. | Signature |
|---|---|---|---|---|
| 1 | Prof. V. Kumar P.U. CHD | 9878369[illegible] | vmittal@yahoo.co.in | V.Kumar |
| 2 | Dr D.S. Pathania Professor GNDEC LDH | 9878634245 | despathania@yahoo.com | |
| 3 | Dr. [illegible] Srivastava BCET Gurdaspur | 9855745832 | [illegible]@yahoo.co.in | |
| 4. | Dr. Rajeev Nasula IKGPTU, Campus | 94780 98073 | dr.[illegible]@gmail.com | |
| 5 | Dr. Honey Sharma GGI, Ludhiana | 98887-61500 | pro.sharma.n@gmail.com | |
| 6. | Dr. Arvind Sharma CEC, Landran | 93161 54500 | arvindkamalsharma@gmail.com | 11/07/17 |
| 7 | Dr. Vikramjeet Singh IKGPTU. Campus Batala | 9988600180 | Vikram31782@gmail.com | |
| 8. | Dr. Harpreet Kaur IKGPTU, Main Campus | 9465884840 | maanh5k@gmail.com | 11.07.2017 |
| 9. | DR. MEGHA GOYAL IKGPTU, MAIN CAMPUS | 94640-53322 | meghagoyal2021@gmail.com | 11/7/2017 |
| 10. | Dr. Gurjinder Singh IKGPTU, Main Campus | 93156-58555 | gurjinder11@gmail.com | 11/7/2017 |
| 11. | Dr. Ashish Arora | 9478098067 | dr.ashisharora@hotmail.com | 11/7/2017 |

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# IK GUJRAL PUNJAB TECHNICAL UNIVERSITY
## (Department of Mathematical Sciences)

Ref. No. IKG-PTU/ DoMS/116 Date: 07/07/2017

Dr. Ashish Arora, Head, Department of Mathematical Science, IKGPTU -Kapurthala
Dr. D.S Pathania, GNDEC Ludhiana
Dr. G.N. Verma, SSIET, Derabassi
Dr. Joginder Singh, CGC Landran
Dr. Arvind Sharma, CEM, Kapurthala
Dr. Honey Sharma, GIT, Khanna
Dr. Sanjeev Kumar Srivastava, BCET Gurdaspur
Dr. Vikramjeet Singh, IKGPTU, Kapurthala
Dr. Harpreet Kaur, IKGPTU, Kapurthala
Dr. Gurjinder Singh, IKGPTU, Kapurthala
Dr. Om Parkash, GNDU, Amritsar
Prof. Vinay Kanwar, UIET, PU,Chd
Dr. N. S. Noorie, PU, Patiala
S. Navdeepak Sandhu, IKGPTU, Kapurthala

**Subject:** **Meeting of Board of Studies Mathematics**

**Sir/ Madam**

A meeting of the above said members of Board of Studies **Mathematics** is scheduled to be held on **July 11th 2017** at **11:30** in the conference hall, 2nd floor, department of Academics, IK Gujral Punjab Technical University main Campus, Jalandhar-Kapurthala highway, Punjab.

The agenda of the meeting is as follows:

1. Restructuring of the curriculum of M.Sc. Mathematics
2. Review and formulation of CBCS for M.Sc. Mathematics
3. Review of the syllabus of different subjects being taught in M.Sc. Mathematics
4. Any other matter with the permission of Chair.

You are requested to participate and contribute through your suggestions. Kindly confirm your participation in the said meeting through e-mail Dr.ashish10@htmail.com or through SMS at 9478098067.

TA & DA / Honorarium will be paid as per the University rules.

**HOD Mathematical Sciences**
**Chairman BOS Mathematical Sciences**

**Cc:**

- **Dean Academics** for information.

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3/7/2017

# I. K. Gujral Punjab Technical University

## Department of Mathematical Sciences

Ref. No: IKGPTU/DMS/111 Date: 03/07/17

**Subject: Meeting of BOS of Mathematics on 11/07/2017**

A meeting of Board of studies of Mathematics is being organized on 11/07/2017 at 10:30 am..
The agenda of the meeting is as follows:

1. Restructuring of the curriculum of M. Sc. Mathematics
2. Review and formulation of CBCS for M. Sc. Mathematics
3. Review of the syllabus of different subjects being taught in M. Sc. Mathematics
4. Any other as desired by the members of BOS and the Chairperson

You are requested to make necessary arrangements for the meeting

Dr. Ashish Arora

Head

~~Co-ordinator~~ BOS
(Incharge)

CC: Dean Academics

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# I. K. Gujral Punjab Technical University
## Department of Mathematical Sciences

Ref No.: IKGPTU/DMS/356

Dated: 15/03/2018

## Minutes of the meeting of Board of Studies (BOS) of Mathematics held on March 15, 2018

The meeting of Board of studies of Mathematics was held on 15/03/2018. The following members were present in the meeting

1. Prof. Om Prakash
2. Prof. Vinay Kanwar
3. Dr. G.N. Verma
4. Dr. S. K. Srivastava
5. Dr. Ashish Aarora
6. Dr. Honey Sharma
7. Dr. Harpreet Kaur
8. Dr. Gurjinder Singh
9. Dr. Rajesh Narula (Special Invitee)
10. Dr. Megha Goyal (Special Invitee)

The following recommendations were given by the Board:

**Agenda 1.** The board confirmed the minutes of last BOS meeting which was held on July 11, 2017.

**Agenda 2.Revision of course contents:**
It was recommended by the Board that for revision of course contents of remaining subjects of third and fourth semesters of M. Sc. (Mathematics) external experts of different Universities may be requested.
The following is the list of courses and the corresponding experts as recommended by the Board:

| S. No | Course Code | Course Title | Expert | University |
|---|---|---|---|---|
| 1. | MSM-301 | Topology | Dr. N. S. Noorie | Punjabi University |
| 2. | MSM-303 | Mathematical Statistics-I | Prof. Narinder Kumar | Panjab University |
| 3. | MSM-401 | Mechanics-II | Prof. S.K. Tomar | Panjab University |
| 4. | MSM-402 | Mathematical Statistics-II | Prof. Narinder Kumar | Panjab University |
| 5. | MSM-403 | Tensors And Differential Geometry | Prof. R. K. Nagaich | Punjabi University |

**Agenda 3. Finalizing the scheme of M.Sc. (Mathematics) for batch 2018 onwards.**

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1) **Change of Elective Courses:**

The Elective-II course Advanced Operations Research (MSM-506) should be replaced by Advanced Number Theory and the course code MSM-506 may be assigned to Advanced Number Theory for the batch 2018 onwards. And the syllabus of Advanced Number Theory may be reviewed by subject expert Prof. A.K. Agarwal, Department of Mathematics, Panjab University, Chandigarh.Board also suggested that Discrete Mathematics should be added in the list of Elective-I subjects and the course code MSM-500 may be given to this subject.

2) **Inclusion of Course objectives & Program Objectives:**

It was recommended by the members of board that course objectives and outcomes should also be provided by the experts developing the course contents.

3) **Change of Credits for Theory and Labs:**

The Board recommended that the credits of Theory lectures should be changed from 5 (five) credits to 4 (four) credits and the credits of Labs should be changed from 1 (one) credit to 2 (two) credits. Also, the teaching hours of Labs should now be increased to 4 (four) hrs./week as per the increase in credits. The revised structure and scheme of M. Sc Mathematics for the batch 2018 onwards as recommended by board should be as under.

**Contact Hours: 27 Hrs.**

**First Semester**

| Course Code | Course Title | Load Allocation | | | Marks Distribution | | | Credits |
|---|---|---|---|---|---|---|---|---|
| | | L | T | P | Internal | External | Total | |
| MSM-101 | Algebra-I | 4 | 1 | 0 | 30 | 70 | 100 | 5 |
| MSM -102 | Real Analysis-I | 4 | 1 | 0 | 30 | 70 | 100 | 5 |
| MSM -103 | Complex Analysis | 4 | 1 | 0 | 30 | 70 | 100 | 5 |
| MSM -104 | Ordinary Differential Equations and Special Functions | 4 | 1 | 0 | 30 | 70 | 100 | 5 |
| MSM -105 | Mathematical Methods | 4 | 1 | 0 | 30 | 70 | 100 | 5 |
| MSM -106 | Introduction to Computer Algebra System (Lab) | 0 | 0 | 4 | 30 | 20 | 50 | 2 |
| Total | | 20 | 05 | 04 | 180 | 370 | 550 | 27 |

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## Department of Mathematical Sciences

**Second Semester** **Contact Hours: 27 Hrs.**

| Course Code | Course Title | Load Allocation | | | Marks Distribution | | | Credits |
|---|---|---|---|---|---|---|---|---|
| | | L | T | P | Internal | External | Total | |
| MSM -201 | Algebra-II | 4 | 1 | 0 | 30 | 70 | 100 | 5 |
| MSM -202 | Real Analysis-II | 4 | 1 | 0 | 30 | 70 | 100 | 5 |
| MSM -203 | Mechanics-I | 4 | 1 | 0 | 30 | 70 | 100 | 5 |
| MSM -204 | Partial Differential Equations | 4 | 1 | 0 | 30 | 70 | 100 | 5 |
| MSM -205 | Numerical Analysis | 4 | 1 | 0 | 30 | 70 | 100 | 5 |
| MSM -206 | Numerical Analysis (Lab) | 0 | 0 | 4 | 30 | 20 | 50 | 2 |
| Total | | 20 | 5 | 4 | 180 | 370 | 550 | 27 |

The board recommended to bifurcate the 30 marks of internal examination as under.

| Assignment/seminar/Attendance | MST | Total |
|---|---|---|
| 10 | 20 | 30 |

The board decided to update the scheme of 3rd and 4th semester for 2018 batch onwards in next meeting. It was also recommended by the board that credit of each core subject should be 5 and the policy document stating (100 marks=4 credits; Skeleton of M.Sc.) should be reviewed.

4) **Revision of Instructions for paper setters and candidates:**

The following changes were recommended by the Board for examination of M.Sc. (Mathematics) for the batch 2018 onwards.

a) The entire question paper should be distributed into three sections viz. Section-A, Section-B, Section-C.
b) Section-A should contain five questions of two marks each. This section should cover the entire syllabus. All questions in this section should be compulsory.
c) Section-B and Section-C should contain three questions each carrying 15 (fifteen) marks.
d) Student should be asked to attempt at least two questions from Section-B and Section-C each.

5) **Revision in the list of recommended books of various courses:**

The Board suggested the following books to be incorporated in the list of Recommended books of various courses.

| S. No | Course Code | Course Title | Recommended Book |
|---|---|---|---|

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| | | | |
|---|---|---|---|
| 1. | MSM-510 | Advanced Numerical Methods | 1. M. K. Jain, S. R. K Iyengar and R. K. Jain, Computational Methods for Partial Differential Equations, New Age International Publishers, 2nd Ed. 2016.<br>2. Curtis F. Gerald, Applied Numerical Analysis, Pearson Education, 7th Ed. |
| 2. | MSM-103 | Complex Analysis | 1. R. Roop Kumar, Complex Analysis, Pearson Education, 2015 |
| 3. | | Engineering Mathematics | 1.Das and Vijay Kumari, Engineering Mathematics, Pearson Education |

**Agenda 4. Finalizing the syllabus of B.Tech (all semesters) as per AICTE guidelines.**

The Board recommended that the syllabus of B. Tech (all semesters) as recommended by AICTE will be adopted as such. But keeping in view that the syllabus is too vast to be covered in 3+1 and 2+1 systems, and also keeping in view thestudent's previous knowledge in the field of Mathematicsand the difficulty of the course contents of Maths-I, Maths-II, Maths Paper-1, Maths Paper-2 etc., the Board suggested that the recommended Scheme and Credit of these courses as suggested by AICTE

| L | T | P | Credits |
|---|---|---|---|
| 3 | 1 | 0 | 4 |

may be replaced by

| L | T | P | Credits |
|---|---|---|---|
| 4 | 1 | 0 | 5 |

It was also noted by the board that in the model curriculum developed by AICTE, the credits and teaching hours are not compatible for Mathematics-2 and Mathematics-III given on page number 16 and 90, respectively.

The meeting ended with the vote of thanks.

Prof. Om Prakash

Prof. Vinay Kanwar

Dr. G.N. Verma

Dr. S. K. Srivastva

Dr. Ashish Arora

Dr. Honey Sharma

Dr. R.K. Narula

Dr. Harpreet Kaur

Dr. Gurjinder Singh

Dr. Megha Goyal

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# I. K. Gujral Punjab Technical University
## Department of Mathematical Sciences

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Ref No.: IKGPTU/DMS/501

Dated: 24/07/2018

**Minutes of the meeting of Board of Studies (BOS) of Mathematics held on July 24, 2018**

The meeting of Board of studies of Mathematics was held on 24/07/2018. The following members were present in the meeting

1. Prof. D.S. Pathania
2. Dr. Ashish Aarora
3. Dr. Honey Sharma
4. Dr. Harpreet Kaur
5. Dr. Gurjinder Singh
6. Dr. Vikramjeet Singh
7. Dr. Rajesh Narula (Special Invitee)
8. Dr. Megha Goyal (BOS Coordinator)

The following recommendations were given by the Board:

**Agenda 1. Finalizing the scheme of M.Sc. (Mathematics) for batch 2018 onwards:**

The board finalized the scheme and syllabus of 3rd and 4th semester of M.Sc. (Mathematics) for batch 2018 onwards. The Board recommended that on page 1 of the scheme and structure of M.Sc. Mathematics for Batch 2018 onwards, the word "Course" should be replaced with "Program" and the objectives of the Program may be extended including teaching as one of the objectives. Eligibility condition for admission in M.Sc. Mathematics should be read as "B.A./B.Sc. or equivalent from a recognized university with Mathematics as one of the major subjects with at least 50% marks in aggregate".

**Agenda 2. Revision of the course contents of the subjects Mathematical Statistics and Mechanics-II of M.Sc. (Mathematics) for batch 2018 onwards:**

It was recommended by the Board that for revision and formation of course contents of subjects Mathematical Statistics and Mechanics-II, external experts of different Universities may be requested.
The following is the list of courses and the corresponding experts as recommended by the Board:

| S. No | Course Code | Course Title | Expert | University |
|---|---|---|---|---|
| 1. | MSM-303, MSM-402 | Mathematical Statistics | Prof. Narinder Kumar | Panjab University |
| 2. | MSM-401 | Mechanics-II | Prof. S.K. Tomar | Panjab University |

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The syllabus of the subject Mathematical Statistics-I & II with subject codes MSM-303 and MSM-402 should be merged and may be assigned a single subject code, that is, MSM303-18. The subject code of Mechanics-II should be MSM305-18.

**Agenda 3. To introduce the subject Differential Geometry as Core subject and Advanced Topology as Elective subject in Semester IV for batch 2018 onwards.**

It was recommended by the Board that the subject Differential Geometry should be introduced as a core subject and Advanced Topology as an Elective subject in Semester IV for batch 2018 onwards. The subject code MSM401-18 may be assigned to the subject Differential Geometry and MSM513-18 may be assigned to the subject Advanced Topology. For revision and formation of course contents of these subjects, the following subject experts are recommended by the Board:

| | | | | |
|---|---|---|---|---|
| 1. | MSM401-18 | Differential Geometry | Dr. Rakesh Kumar | Punjabi University |
| 2. | MSM513-18 | Advanced Topology | Prof. N.S. Noorie | Panjabi University |

**Agenda 4. To revise and merge the list of Elective-I, II and III subjects of various courses of M.Sc. (Mathematics) for the batch 2018 onwards.**

It was recommended by the board to merge the list of Elective-I, II, III and make one comprehensive list of electives to be offered in 4th semester.

**Agenda 5. To finalize the Choice based credit scheme of M.Sc. (Mathematics) as per the approved skeleton of M.Sc. courses by IKG Punjab Technical University.**

The board recommended the changes in credits as per the approved system of 25 marks equal to one credit for all theory and lab courses. A lab on Number theory and Cryptography was recommended by the board to be introduced in third semester and the subject code MSM306-18 may be assigned to it. The revised structure and scheme of M. Sc Mathematics for the batch 2018 onwards as recommended by board should be as under.

**First Semester** **Contact Hours: 28 Hrs.**

| Course Code | Course Title | Load Allocation | | | Marks Distribution | | | Credits |
|---|---|---|---|---|---|---|---|---|
| | | L | T | P | Internal | External | Total | |

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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| MSM101-18 | Algebra-I | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM102-18 | Real Analysis-I | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM103-18 | Complex Analysis | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM104-18 | Ordinary Differential Equations and Special Functions | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM105-18 | Mathematical Methods | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM106-18 | Introduction to Computer Algebra System (Lab) | 0 | 0 | 3 | 50 | 25 | 75 | 3 |
| Total | | 20 | 05 | 03 | 200 | 375 | 575 | 23 |

**Second Semester** **Contact Hours: 28 Hrs.**

| Course Code | Course Title | Load Allocation | | | Marks Distribution | | | Credits |
|---|---|---|---|---|---|---|---|---|
| | | L | T | P | Internal | External | Total | |
| MSM201-18 | Algebra-II | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM202-18 | Real Analysis-II | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM203-18 | Mechanics-I | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM204-18 | Partial Differential Equations | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM205-18 | Numerical Analysis | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM206-18 | Numerical Analysis (Lab) | 0 | 0 | 3 | 50 | 25 | 75 | 3 |
| Total | | 20 | 5 | 3 | 200 | 375 | 575 | 23 |

**Third Semester** **Contact Hours: 27 Hrs.**

| Course Code | Course Title | Load Allocation | | | Marks Distribution | | | Credits |
|---|---|---|---|---|---|---|---|---|
| | | L | T | P | Internal | External | Total | |

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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| MSM301-18 | Topology | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM302-18 | Number Theory and Cryptography | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM303-18 | Mathematical Statistics | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM304-18 | Functional Analysis | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM305-18 | Mechanics-II | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM306-18 | Number Theory and Cryptography (Lab) | 0 | 0 | 2 | 33 | 17 | 50 | 2 |
| Total | | 20 | 05 | 03 | 183 | 367 | 550 | 22 |

**Fourth Semester** **Contact Hours: 35 Hrs.**

| Course Code | Course Title | Load Allocation | | | Marks Distribution | | | Credits |
|---|---|---|---|---|---|---|---|---|
| | | L | T | P | Internal | External | Total | |
| MSM401-18 | Differential Geometry | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM WWW | Elective | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM XXX | Elective | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM YYY | Elective | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM ZZZ | Elective | 4 | 1 | 0 | 30 | 70 | 100 | 4 |
| MSM601-18 | Dissertation | 0 | 0 | 10 | 250 | - | 250 | 10 |
| Total | | 20 | 05 | 8 | 400 | 350 | 750 | 30 |

**Agenda 6. To revise the course and syllabus of Mathematics of B.Tech-I semester civil engineering as per AICTE model curriculum.**

On the basis of queries received from various colleges, the Board recommended that the syllabus of B. Tech 1st semester Civil branch as recommended by AICTE should be revised and modules 4b-d of Matrices and Vector Spaces should be deleted.

**Agenda 7. Rectification of the nomenclature of M.Sc. program on examination portal of IKGPTU.**

The board taken a serious note of the appearance of M. Sc. (Applied Mathematics) on the examination portal ptudocs.com of IKGPTU. The terminology Applied Mathematics was never

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# I. K. Gujral Punjab Technical University

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The board taken a serious note of the appearance of M. Sc. (Applied Mathematics) on the examination portal ptudocs.com of IKGPTU. The terminology Applied Mathematics was never approved by the board and is misleading and must be rectified. The word applied should be removed as the nomenclature of the program is M.Sc. (Mathematics).

The meeting ended with the vote of thanks.

Dr. D.S. Pathania

Dr. Ashish Arora

Dr. Honey Sharma

Dr. R.K. Narula 24/7/2018

Dr. Harpreet Kaur

Dr. Gurjinder Singh

Dr. Vikramjeet Singh

Dr. Megha Goyal

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# I. K. Gujral Punjab Technical University
## Department of Mathematical Sciences

Ref No.: IKGPTU/DMS/834 Dated: 01-03-2019

**Minutes of the meeting of Board of Studies (BOS) of Mathematics held on March 01, 2019**

The meeting of Board of studies of Mathematics was held on 01/03/2019. The following members were present in the meeting

1. Dr. Tejwant Singh, Retd. Professor, PAU, Ludhiana, Ex-Chairman BoS
2. Dr. Vinay Kanwar, Professor, PU, Chandigarh, Outside Expert
3. Dr. D.S. Pathania, Professor, GNDEC, Ludhiana,
4. Dr. G.N. Verma, Professor, SSIET, Dera Bassi
5. Dr. Sanjeev Kumar Srivastava, Asso. Prof., BCET, Gurdaspur
6. Dr. Ashish Arora, IKGPTU, Kapurthala, Chairman (Ex-officio)
7. Dr. Vikramjeet Singh, Asst. Prof., IKGPTU, Batala
8. Dr. Rajesh Kumar Narula, Special Invitee, IKGPTU, Kapurthala
9. Dr. Gurjinder Singh, Asst. Prof., IKGPTU, Kapurthala
10. Dr. Megha Goyal, Bos Coordinator, IKGPTU, Kapurthala

The following recommendations were given by the Board:

**Agenda 1. To finalize the Program objectives, Program Outcomes and Program Specific Outcomes, Course objectives and Course outcomes of M.Sc. (Mathematics):**

The board suggested some significant changes in Course outcomes, Course objectives and Program objectives of M.Sc. (Mathematics) for batch 2018 onwards. It was recommended that the faculty member teaching the particular course shall make the requisite changes in the course objectives and course outcomes. The final document should be sent to all board members through e-mail with in a week of the meeting for approval. After the approval of all board members, the final document should be sent to competent authority for further action.

**Agenda 2. Framing the course contents of the subject Number Theory & Cryptography (LAB) for the batch 2018 and onwards.**

It was recommended by the Board that Dr. Megha Goyal, Assistant Professor, Department of Mathematical Sciences shall formulate the course contents of Number Theory and Cryptography (LAB) for the batch 2018 onwards. After formulation of contents, the document should be sent to all board members for further suggestion or modifications if any and ratification thereafter.

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**Agenda 3. To introduce value added courses in Semester IV of M.Sc. (Mathematics) for the batch 2018 and onwards.**

It was recommended by the Board that a value-added course should be introduced as an audit course in M.Sc. Mathematics for batch 2018 onwards. The value-added course should consists of Latex and Maple-soft software. The course contents shall be formulated by Dr. Gurjinder Singh, Assistant Professor, Department of Mathematical Sciences. The subject code MSMVA-18 may be assigned to the value-added course. This course should also be sent to all board members for ratification through e-mail.

**Agenda 4. To formulate the bridge courses for change of B.Tech branches.**

The board recommended that two bridge courses, namely, Bridge Course-I and Bridge course-II should be formulated as per the recommendations given by the committee formulated by the registrar of the University for this case. The Board recommended the following subject codes for Bridge Courses.

| | | |
|---|---|---|
| 1. | BTAMBC1-18 | Bridge Course-I |
| 2. | BTAMBC2-18 | Bridge Course-II |

The board further recommended that these courses should be formulated at departmental level and sent to the board members through e-mail for further suggestions and ratification.

**Agenda 5. To revise the course of Mathematics in 3rd semesters of B.Tech (all branches) as per AICTE model curriculum.**

The board finalized the syllabus of Mathematics Courses for B.Tech 3rd semester, batch 2018 onwards for all branches as per AICTE model curriculum. The Board recommended the following subject codes for Mathematics Courses for B.Tech 3rd semester, batch 2018 onwards.

| S.No. | Subject Code | Subject Title | Branch |
|---|---|---|---|
| 1. | BTAM301-18 | Mathematics-III (Vector & Transform Calculus) | Civil Engineering |
| 2. | BTAM302-18 | Mathematics-III (Probability and Statistics) | Electrical Engineering |
| 3. | BTAM303-18 | Mathematics-III (PDE, Probability & Statistics) | Mechanical Engineering |
| 4. | BTAM304-18 | Mathematics-III (Calculus and Ordinary Differential Equations) | Computer Science Engineering |
| 5. | BTAM302-18 | Mathematics-III (Probability and Statistics) | Electronics and Communications Engineering |

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It was also decided by the board that remaining syllabus of B.Tech. for 4th semester and onwards will be discussed and ratify in the next meeting. The percentage of change in curriculum of M. Sc. Will also be discussed in next meeting.

The meeting ended with the vote of thanks.

Dr. Ashish Arora

Dr. Tejwant Singh

Dr. D.S. Pathania

Dr. Vinay Kanwar

Dr. G.N. Verma

Dr. Vikramjeet Singh

Dr. R.K. Narula 1/3/2019

Dr. Gurjinder Singh

Dr. Megha Goyal

Dr. Sanjay Kumar Srivastava

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# I. K. Gujral Punjab Technical University
## Department of Mathematical Sciences

Ref No.: IKGPTU/DMS/1000 Dated:11/07/2019

**Minutes of the meeting of Board of Studies (BOS) of Mathematics held on July 11, 2019**

The meeting of Board of studies of Mathematics was held on 11/07/2019. The following members were present in the meeting

1. Dr. Vinay Kanwar, Professor, PU Chandigarh, Outside Expert
2. Dr. Amritbir Singh, Professor, BBSBEC, Fatehgarh Sahib
3. Dr. Manoranjan Mishra, Associate Professor, IIT Ropar
4. Dr. Ashish Arora, IKGPTU, Kapurthala, Chairman (Ex-officio)
5. Dr. Rajesh Kumar Narula, Asst. Prof, IKGPTU Kapurthala
6. Dr. Megha Goyal, BoS Coordinator, IKGPTU, Kapurthala
7. Dr. Gurjinder Singh, Special invitee, , IKGPTU, Kapurthala

The following recommendations were given by the Board:

**Agenda 1. Framing the Structure and course contents of the subjects of B.Sc (Mathematics) Ist semester for the batch 2019 and onwards.**

The Board finalized the Structure/Scheme and course contents of the subjects of B.Sc (Mathematics) Ist semester for the batch 2019 and onwards. The recommended course contents of the subjects of B.Sc (Mathematics) Ist semester will be formulated as per the suggestions of BOS and shall be sent to the members for their consent through email.

**Agenda 2. To Finalize the pattern of Question papers of B.Sc (Mathematics) and M.Sc. (Mathematics) for the batch 2019 and onwards.**

The Board discussed pattern of examination of B.Sc.(Hons.) Mathematics & M.Sc. Mathematics for batch 2019 onwards. The ratio of marks for external and internal exam as recommended by BOS will be 60:40. Also board recommended the following style of external paper (60 marks) for both B.Sc. and M.Sc. courses:

- 50 percent content of the external examination will be conceptual/numerical in nature and remaining 50 percent will be from theory.
- There should be three sections A, B and C in the question paper. Each section should be of twenty marks.
- Section A will contain ten objective type questions covering the whole syllabus and having two marks each.
- Section B will contain four questions having eight marks each. This section will cover the unit I & II of syllabus.

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- Section C will contain four questions having eight marks each. This section will cover the unit III & IV of syllabus.
- Sub-parts of the questions in Section B and C should be preferred for numerical/conceptual questions.

Section A will be compulsory. Students shall be asked to attempt any five questions from section-B and C, selecting at least two from each section.

While discussing the standard of question settings for the final examination, the board recommended that, for each course, COE may collect the question papers from more than one external experts to make a pool of question paper bank. The committee consisting of COE, HOD and one (more) external expert(s) avoiding any conflict of interest may be constituted to select the final question papers.

Internal marks (40) will be bifurcated as follow:

| | | |
|---|---|---|
| Average of Two MSTs | - | 24 |
| Assignments (Minimum two) | - | 10 |
| Attendance/General behavior | - | 06 |

**Agenda 3. To revisit the Syllabus/structure of M.Sc. (Mathematics) of batch 2018 onwards.**

The board recommended the minor changes in the syllabus of certain subjects M.Sc (Mathematics) course of batch 2018 onwards and removal of number theory and cryptography lab.

**Agenda 4: To revise the list of core subjects to be offered for pre-Ph.D course work (Mathematics)**

The Board recommended the addition of subject of specialization of each faculty of the department in the list of core subjects to be offered for Pre-Ph.D course work of Mathematics. The board recommended that the concerned faculty member shall prepare the course contents of the subjects to be incorporated in the list of pre-Ph.D course work and e-mail to the members of BOS for their consent/suggestions

The meeting ended with the vote of thanks.

Dr. Vinay Kanwar

Dr. Amritbir Singh

Dr. Manoranjan Mishra

Dr. Ashish Arora

Dr. R.K. Narula

11/7/2019

Dr. Megha Goyal

Dr. Gurjinder Singh

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**I.K. Gujral Punjab Technical University, Jalandhar**

**(Department Of Mathematical Sciences)**

**B.Sc. (Hons.)In Mathematics**

**Program Structure & Syllabus**

**(Choice Based Credit System)**

**For Batch 2019 Onwards**

**Title Of the Program:** B.Sc. (Hons.) In Mathematics

**Duration :** 3 Years (6 Semesters)

**Eligibility:** 50% in 10+2 in any stream with Mathematics as one of the main subjects.

First Semester Total Credits:

| Course Code | Course Title | Load Allocation | | | Marks Distribution | | | Credits |
|---|---|---|---|---|---|---|---|---|
| | | L | T | P | Internal( MST) | External (EST) | Total | |
| | Calculus -1 | 4 | 1 | 0 | 40 | 60 | 100 | 4 |
| | Co-ordinate Geometry | 4 | 1 | 0 | 40 | 60 | 100 | 4 |
| | Programming-I | 0 | 0 | 2 | | | | 1 |
| | Physics | | | | | | | |
| | Chemistry/Managerial Economics-I | | | | | | | |
| | Communicative English | 2 | 0 | 0 | | | | 2 |
| | Punjabi/Punjab History and Culture | 2 | 0 | 0 | | | | 2 |

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- List of Practicals for Programming-I
  - i) Introduction to programming through (FORTRAN and C etc.)
  - ii) Matrix Operation ( Addition ,Multiplication, inverse, Transpose)
  - iii) Plotting of graphs of algebraic and transcendental function. (For example, $e^{ax+b}$, $\log(ax+b)$, $\frac{1}{ax+b}$, with constants a, b etc. )
  - iv) Obtaining Surface of revolution of curves.
  - v) Tracing of conics in Cartesian Coordinates /Polar Coordinates.
  - vi) Applications of derivative.

Vinay Kumar

11/7/2019

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# I. K. Gujral Punjab Technical University
## Department of Mathematical Sciences

Ref No.: IKGPTU/DMS/1655 Dated: 04/012/2019

**Minutes of the meeting of Board of Studies (BOS) of Mathematics held on December 4th, 2019**

The meeting of Board of studies of Mathematics was held on 04/12/2019. The following members were present in the meeting

1. Dr. Ashish Arora, IKGPTU, Kapurthala, Chairman
2. Dr. Vinay Kanwar, Professor, PU Chandigarh, Outside Expert
3. Dr. D. S. Pathania, Professor, GNE, Ludhiana
4. Dr. Amritbir Singh, Professor, BBSBEC, Fatehgarh Sahib
5. Dr. Satish Kumar Sharma, Assoc. Professor, TIET, Patiala
6. Dr. S.K. Srivastva, Prof. BCET, Gurdaspur
7. Dr. Rajesh Kumar Narula, Asst. Prof., IKGPTU Kapurthala
8. Dr. Harpreet Kaur, BOS Coordinator, IKGPTU, Kapurthala
9. Dr. Gurjinder Singh, Special Invitee IKGPTU, Kapurthala

The following recommendations were given by the Board:

**Agenda 1. Framing the Structure and course contents of the subjects of B.Sc (Mathematics) 2nd semester for the batch 2019 and onwards.**

The Board finalized the Structure/Scheme and course contents of the B.Sc (Mathematics) 2nd semester for the batch 2019 and onwards. The syllabus of Calculus-II, Solid geometry and Programming Lab-II were formulated. The board also passed the course contents of the subjects offered by other departments.

**Agenda 2. Decision on equivalency of syllabus of Mathematics of B.Tech Mechanical(2012-2016 batch) and B.Sc/B.A Mathematics**

The Board discussed on equivalency of the mathematics syllabus of B.Tech Mechanical with B.Sc./B.A. The content of syllabus of subject mathematics in B.Tech. Mechanical Engineering is based on applications of mathematics in engineering, but B.Sc./B.A syllabus is designed from

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theoretical point of view and basic sciences oriented. Also Mathematics is a subsidiary subject in the case of B. Tech (Mechanical Engineering) whereas Mathematics is a major subject in case of B.Sc./ B.A. The board recommended that the equivalency cannot be given of the subject mathematics in B.Tech. and B.Sc./B.A.

The meeting ended with the vote of thanks.

Dr. Vinay Kanwar 4/12/19

Dr. Amritbir Singh 04/12/2019

Dr. D.S. Pathania 04.12.19

Dr. Satish Kumar Sharma

Dr. S.K. Srivastva 4/12/19

Dr. Ashish Arora 4/12/2019

Dr. R.K. Narula 4/12/19

Dr. Harpreet Kaur 4/12/19

Dr. Gurjinder Singh 4/12/19

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File No. I/398/2020-MATH SCI (Computer No. 16799 )

File No. I/398/2020-MATH SCI

# Autonomous

Universities of Punjab

PTU-DEPT

Dept of Mathematical Sciences

## SUBJECT

| | | |
|---|---|---|
| Main Category | : | Boards Of Studies |
| Sub Category | : | Meetings |
| Description | : | Regarding Minutes of BOS and Updated syllabus of B.Sc.(Hons.) Mathematics |

## OTHER DETAILS

| | | |
|---|---|---|
| Retention | : | |
| Priority | : | |
| Language | : | English |
| Remarks | : | |

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File No. I/398/2020-MATH SCI (Computer No. 16799 )

Receipt No : 19913/2020/Dept of Mathematical Sciences

# I. K. Gujral Punjab Technical University

## Department of Mathematical Sciences

Dated: 18/05/2020

**Minutes of the meeting of Board of Studies (BOS) of Mathematics held online on May 18th, 2020**

The meeting of Board of studies of Mathematics was held on 18/05/2020. The following members were present in the meeting

1. Dr. Ashish Arora, Associate Professor, IKGPTU, Kapurthala, Chairman
2. Dr. Vinay Kanwar, Professor, PU Chandigarh, Outside Expert
3. Dr. D. S. Pathania, Professor, GNE, Ludhiana
4. Dr. Amritbir Singh, Professor, BBSBEC, Fatehgarh Sahib
5. Dr. Satish Kumar Sharma, Associate Professor, TIET, Patiala
6. Dr. S.K. Srivastva, Professor, BCET, Gurdaspur
7. Dr. Jitender Singh, GNDU, Amritsar
8. Dr. Rajesh Kumar Narula, Asst. Prof., IKGPTU Kapurthala
9. Dr. Harpreet Kaur, BOS Coordinator, IKGPTU, Main Campus, Kapurthala
10. Dr. Megha Goyal, Asst. Prof, IKGPTU, Kapurthala
11. Dr. Gurjinder Singh, Special Invitee IKGPTU, Kapurthala

The following recommendations were given by the Board:

**Agenda 1. Framing the Structure and course contents of the subjects of B.Sc Hons. (Mathematics) 3rd and 4th semester for the batch 2019 and onwards.**

The Board finalized the Structure/Scheme and course contents of the subjects of B.Sc Hons. (Mathematics) 3rd and 4th semester for the batch 2019 and onwards. It was decided that course curriculum shall be developed as per the recommendations of the members of the board and shall be sent to all members for approval through e-mail.

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**Agenda 2. List of Examiners**

The board also finalized the list of examiners for May-2020 examination as under:

| Sr. No. | Name | Institute | Mobile | Email |
|---|---|---|---|---|
| 1. | Dr. Ashish Arora | Department of Mathematical Sciences, IKGPTU-Main Campus | dr.ashish10@hotmail.com | 9478098067 |
| 2. | Dr. Jitender Singh | Department of Mathematics, GNDU Amritsar | sonumaths@gmail.com | 8146907778 |
| 3. | Dr. Rajesh Narula | Department of Mathematical Sciences, IKGPTU-Main Campus | dr.rknarula@gmail.com | 9478098073 |
| 4. | Dr. Satish Kumar | School of Mathematics Thapar University, Patiala | Satishk.sharma@thapar.edu | 9780493782 |
| 5. | Dr. Harpreet Kaur | Department of Mathematical Sciences, IKGPTU-Main Campus | maanh57@gmail.com | 9465884840 |
| 6. | Dr. Sukhjit Singh | Department of Mathematics, NIT, Jalandhar | sukhjitmath@gmail.com | 7872001816 |
| 7. | Dr. Divya Taneja | Department of Applied Sciences, YCoE, Talwandi Saboo | dtaneja25@yahoo.co.in | 98555-26296 |
| 8. | Dr. Gurjinder Singh | Department of Mathematical Sciences, IKGPTU-Main Campus | gurjinder11@gmail.com | 98156-58551 |
| 9. | Dr. Megha Goyal | Department of Mathematical Sciences, IKGPTU-Main Campus | meghagoyal2021@gmail.com | 9464053322 |
| 10. | Dr. Suraj Goyal | Department of Mathematics, JCB YMCA University, Faridabad | surajgoyal87@gmail.com | 9417728292 |
| 11. | Dr. Mahendra Kumar Gupta | Department of Mathematics, NIT Jamshedpur | mkgupta.math@nitjsr.ac.in, mahendra14389@gmail.com | 9414333978 |
| 12. | Dr. Rachna Sachdeva | Department of Mathematics, Jammu University, Jammu | surajgoyal87@gmail.com | 9417728292 |
| 13. | Dr. Rabia Kamra | Department of Applied Sciences, PEC, Chandigarh | karma.rabia@gmail.com | 9555982876 |
| 14. | Dr. Monika Rani Assistant Prof. | Department of Mathematics, Kanya Maha Vidyalaya, Jalandhar | gargnitk24@gmail.com | 9317820270 |
| 15. | Dr. Sarita Pippal | Department of Mathematics, Panjab University, Chandigarh | saritamath@pu.ac.in | 9870841523 |
| 16. | Dr. D.S. Pathania | Department of Applied Sciences, GNE, Ludhiana | despathania@yahoo.com | 9878634245 |
| 17. | Dr. Himani Arora Assistant Prof. | Department of Mathematics, GNDU, Amritsar | arorahimani362@gmail.com | 9988214199 |
| 18. | Dr. Munish Kansal | School of Mathematics, Thapar University, Patiala | munish.kansal@thapar.edu | 9855087206 |
| 19. | Rajat Singla | Department of Mathematics Akal University, Talwandi Sabo | rajat_math@auts.ac.in | 9914966789 |
| 20. | Komalpreet Kaur | Department of Mathematical Sciences, IKGPTU-Main Campus | komal2581516@gmail.com | 9914533423 |

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| | | | | |
|---|---|---|---|---|
| 21. | Dr. Paramjeet Singh | School of Mathematics Thapar University, Patiala | paramjeet.singh@thapar.edu | 9646056500 |
| 22. | Akansha Mehta | Department of Mathematical Sciences, IKGPTU-Main Campus | mehta.akansha49@gmail.com | 9888195725 |

The meeting ended with the vote of thanks.

Dr. Vinay Kanwar

Dr. Amritbir Singh

Dr. D.S. Pathania

Dr. Satish Kumar Sharma

Dr. S.K. Srivastva

Dr. Jitender Singh

Dr. Ashish Arora

Dr. R.K. Narula

Dr. Harpreet Kaur

Dr. Gurjinder Singh

Dr. Megha Goyal

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**File No. I/398/2020-MATH.SCI (Computer No. 16799 )** 31 5

**Receipt No : 19913/2020/Dept of Mathematical Sciences**

Gmail

Harpreet Maan <maanh57@gmail.com>

## BOS Meeting id and password

**Amritbir Singh** <amritbir.singh@bbsbec.ac.in> Sat, Jun 13, 2020 at 7:32 PM
To: Harpreet Maan <maanh57@gmail.com>

Dear Madam

Thanks for sending me the minutes of the meeting of BOS in Mathematics, held online on 18-5-2020. Minutes are well prepared and points discussed in the meeting have been incorporated in the syllabus discussed. I am giving my consent for the attached syllabus of B.Sc Hons. Mathematics 3rd & 4th semester.

With regards

Dr Amritbir Singh
Prof. & Head
Department of Applied Sciences
B.B.S.B. Engg. College Fatehgarh Sahib

On Mon, 8 Jun, 2020, 1:39 PM Harpreet Maan, <maanh57@gmail.com> wrote:

> Respected Sir,
>
> The meeting of Board of studies of Mathematics was held on 18/05/2020. The minutes of meeting and syllabus of B.Sc. Hons. Mathematics 3rd and 4th semester are attached herewith. This is submitted for your kind consent.
>
> --
> Thanks and Regards
> Dr. Harpreet Kaur
> Assistant Professor
> Dept. of Mathematical Sciences
> I.K. Gujral Punjab Technical University, Jalandhar

Head
Department of Mathematical Sciences
I.K. Gujral Punjab Technical University
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6/19/2020 **File No. I/398/2020-MATH SCI (Computer No. 16799 )** Gmail - Re: BOS Minutes

**Receipt No : 19913/2020/Dept of Mathematical Sciences**

Gmail

Harpreet Maan <maanh57@gmail.com>

## Re: BOS Minutes

**Satishk sharma** <satishk.sharma@thapar.edu> Sun, Jun 14, 2020 at 9:08 AM
To: Harpreet Maan <maanh57@gmail.com>

Dear Harpreet
I give my consent to the minutes and the syllabus of B.Sc. Hons. Mathematics 3rd and 4th semester.
Thanks and regards

Dr. Satish kumar
TIET, Patiala

On Sat, 13 Jun 2020, 18:38 Harpreet Maan, <maanh57@gmail.com> wrote:

> ---------- Forwarded message ---------
> From: **Harpreet Maan** <maanh57@gmail.com>
> Date: Mon, 8 Jun 2020, 13:36
> Subject: Re: BOS Meeting id and password
> To: <despathania@yahoo.com>, Amritbir Singh <amritbir.singh@bbsbec.ac.in>, <satishk.sharma@thaper.edu>, vinay kanwar <vmithil@yahoo.co.in>, Jitender Singh <sonumaths@gmail.com>, <Sks64_bcet@yahoo.co.in>, Gurjinder Singh <gurjinder11@gmail.com>, Dr. Rajesh Narula <dr.rknarula@gmail.com>, Megha Goyal <meghagoyal2021@gmail.com>
> Cc: Dr. Ashish Arora <Dr.Ashish10@hotmail.com>
>
> Respected Sir,
> The meeting of Board of studies of Mathematics was held on 18/05/2020. The minutes of meeting and syllabus of B.Sc. Hons. Mathematics 3rd and 4th semester are attached herewith. This is submitted for your kind consent.
>
> --
> Thanks and Regards
> Dr. Harpreet Kaur
> Assistant Professor
> Dept. of Mathematical Sciences
> I.K. Gujral Punjab Technical University, Jalandhar

Head
Department of Mathematical Sciences
I.K. Gujral Punjab Technical University
Kapurthala-144603 Pb. (India)

**Receipt No : 19913/2020/Dept of Mathematical Sciences**

Gmail

Harpreet Maan <maanh57@gmail.com>

## BOS Meeting id and password

Mon, Jun 8, 2020 at 4:01 PM

**vinay kanwar** <vmithil@yahoo.co.in>
Reply-To: vinay kanwar <vmithil@yahoo.co.in>
To: Harpreet Maan <maanh57@gmail.com>

Respected Madam Harpreet

Good evening.

Thanks for your mail and information. I have gone through the proposed mathematics syllabus for third and fourth semester of B.Sc. (Hons) students. Syllabus is OK from my side, however, there are some minor typographically mistakes in the proposed syllabus (Please see the attached file).

With best wishes,
V. Kanwar

Dr. V.Kanwar
Professor (Mathematics),
University Institute of Engineering and Technology,
Panjab University, Chandigarh-160 014, India.
Phone NO:09878369981, Fax: 0172-2547986.

[Quoted text hidden]

**2 attachments**

**DA-PTU(BOS).pdf**
570K

**Minor Corrections related to 3rd and 4th Seme.docx**
13K

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6/19/2020 File No. I/398/2020-MATH SCI (Computer No. 16799 ) Gmail - BOS Meeting id and password

**Receipt No : 19913/2020/Dept of Mathematical Sciences**

Gmail

Harpreet Maan <maanh57@gmail.com>

## BOS Meeting id and password

**Harpreet Maan** <maanh57@gmail.com>
To: vinay kanwar <vmithil@yahoo.co.in>

Mon, Jun 8, 2020 at 8:39 PM

Respected Sir,

Very good evening. Thank you so much for kind response and valuable corrections. Please get the corrected syllabus of 3rd and 4th semester of B.Sc. Hons. mathematics as per your suggested corrections in attachment.

[Quoted text hidden]

**Updated B.Sc.(Hons.) 1st and 2nd Year University Campus.pdf**
2201K

Head
Department of Mathematical Sciences
I.K. Gujral Punjab Technical University
Kapurthala-144603 Pb. (India)

Gmail

Harpreet Maan <maanh57@gmail.com>

## BOS Meeting id and password

**Dr. Rajesh Narula** <dr.rknarula@gmail.com> Fri, Jun 19, 2020 at 11:18 AM
To: Harpreet Maan <maanh57@gmail.com>

It seems ok.

On Mon, Jun 8, 2020, 1:39 PM Harpreet Maan <maanh57@gmail.com> wrote:

> Respected Sir,
>
> The meeting of Board of studies of Mathematics was held on 18/05/2020. The minutes of meeting and syllabus of B.Sc. Hons. Mathematics 3rd and 4th semester are attached herewith. This is submitted for your kind consent.
>
> –
> Thanks and Regards
> Dr. Harpreet Kaur
> Assistant Professor
> Dept. of Mathematical Sciences
> I.K. Gujral Punjab Technical University, Jalandhar

Head
Department of Mathematical Sciences
I.K. Gujral Punjab Technical University
Kapurthala-144603 Pb. (India)

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Gmail - BOS Meeting id and password

**Receipt No : 19913/2020/Dept of Mathematical Sciences**

Gmail Harpreet Maan <maanh57@gmail.com>

## BOS Meeting id and password

**devinder singh** <despathania@yahoo.com>
To: Harpreet Maan <maanh57@gmail.com>
Tue, Jun 9, 2020 at 12:35 PM

(Syllabus was discussed and it is fine) Dr DSPathania

---- Forwarded Message ----
**From:** Harpreet Maan <maanh57@gmail.com>
**To:** Amritbir Singh <amritbir.singh@bbsbec.ac.in>; vinay kanwar <vmithil@yahoo.co.in>; Jitender Singh <sonumaths@gmail.com>; Satishk sharma <satishk.sharma@thapar.edu>; "sks64_bcet@yahoo.co.in" <sks64_bcet@yahoo.co.in>; "despathania@yahoo.com" <despathania@yahoo.com>
**Sent:** Monday, June 8, 2020, 01:47:25 PM GMT+5:30
**Subject:** Fwd: BOS Meeting id and password

Respected Sir,

All are requested please send the duly filled and signed DA form. Kindly mention honorarium amount Rs. 5000. The formulated Syllabus and scheme with minutes of meeting has sent you late. Beacuse in this programme various subjects are from other departments. We have received syllabus and mapping of courses with programme outcomes of their subjects in the last week.

Join Zoom Meeting
https://us04web.zoom.us/j/72703194508?pwd=ckhiQUxJWVZPU0FJb1pReTRuQW4vZz09

Meeting ID: 727 0319 4508
Password: 9ynidk

On Fri, 15 May 2020, 18:47 Harpreet Maan, <maanh57@gmail.com> wrote:

Respected Sir,

The meeting of the Board of Studies of the department of **Mathematical Sciences, IKGPTU Main Campus** is scheduled to be held online at Zoom app on **May 18th, 2020 at 11:00 AM.** The meeting id and password will be shared with you. The agenda of the meeting to be discuss

1. The study scheme and syllabus of B. Sc.(Hons.) Mathematics 3rd and 4th semester for batch 2019 and onwards.
2. List of examiners
3. Any other matter with the permission of Chair.

You are requested to participate and contribute through your suggestions. Kindly confirm your participation in the said meeting through e-mail or SMS at 9478098067 or 9465884840.

Thanks and Regards
Dr. Harpreet Kaur
Assistant Professor
Dept. of Mathematical Sciences
I.K. Gujral Punjab Technical University, Jalandhar

--
Thanks and Regards
Dr. Harpreet Kaur

cc

Head
Department of Mathematical Sciences
I.K. Gujral Punjab Technical University
Kapurthala-144603 Pb. (India)

**File No. I/398/2020-MATH.SCI (Computer No. 16799 )**

**Receipt No : 19913/2020/Dept of Mathematical Sciences**

Assistant Professor
Dept. of Mathematical Sciences
I.K. Gujral Punjab Technical University, Jalandhar

--

Thanks and Regards
Dr. Harpreet Kaur
Assistant Professor
Dept. of Mathematical Sciences
I.K. Gujral Punjab Technical University, Jalandhar
[Quoted text hidden]

DA form-1.pdf
747K

Head
Department of Mathematical Sciences
I.K. Gujral Punjab Technical University
Kapurthala-144603 Pb. (India)

File No. I/398/2020-MATH SCI (Computer No. 16799 )

6/19/2020
Receipt No : 19913/2020/Dept of Mathematical Sciences



Gmail

Harpreet Maan <maanh57@gmail.com>

## BOS Meeting id and password

Fri, Jun 19, 2020 at 11:19 AM

**Gurjinder Singh** <gurjinder11@gmail.com>
To: Harpreet Maan <maanh57@gmail.com>

Dear Madam

I have gone through the file. The syllabus is ok.

Sincerely
Gurjinder Singh

On Mon, 8 Jun 2020, 1:39 pm Harpreet Maan, <maanh57@gmail.com> wrote:

> Respected Sir,
>
> The meeting of Board of studies of Mathematics was held on 18/05/2020. The minutes of meeting and syllabus of B.Sc. Hons. Mathematics 3rd and 4th semester are attached herewith. This is submitted for your kind consent.
>
> --
> Thanks and Regards
> Dr. Harpreet Kaur
> Assistant Professor
> Dept. of Mathematical Sciences
> I.K. Gujral Punjab Technical University, Jalandhar

Head
Department of Mathematical Sciences
I.K. Gujral Punjab Technical University
Kapurthala-144603 Pb. (India)

Receipt No : 19913/2020/Dept of Mathematical Sciences File No. I/398/2020-MATH.SCI (Computer No. 16799 )

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Gmail

Harpreet Maan <maanh57@gmail.com>

## BOS Meeting id and password

**Megha Goyal** <meghagoyal2021@gmail.com>
To: Harpreet Maan <maanh57@gmail.com>

Fri, Jun 19, 2020 at 11:58 AM

I have read the MoMs... it is Ok...

On Mon, 8 Jun 2020 at 1:39 PM, Harpreet Maan <maanh57@gmail.com> wrote:

> Respected Sir,
>
> The meeting of Board of studies of Mathematics was held on 18/05/2020. The minutes of meeting and syllabus of B.Sc. Hons. Mathematics 3rd and 4th semester are attached herewith. This is submitted for your kind consent.
>
> –
> Thanks and Regards
> Dr. Harpreet Kaur
> Assistant Professor
> Dept. of Mathematical Sciences
> I.K. Gujral Punjab Technical University, Jalandhar

–
Dr. Megha Goyal
Assistant Professor,
Department of Mathematical Sciences,
IKG Punjab Technical University, Jalandhar-144603

Head
Department of Mathematical Sciences
I.K. Gujral Punjab Technical University
Kapurthala-144603 (Punjab) (India)

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Receipt No : 19913/2020/Dept of Mathematical Sciences

Gmail - BOS Meeting id and password

Gmail Harpreet Maan <maanh57@gmail.com>

## BOS Meeting id and password

**Jitender Singh** <sonumaths@gmail.com>
To: Harpreet Maan <maanh57@gmail.com>

Tue, Jun 9, 2020 at 12:21 PM

**Dear Dr. Harpreet**

**Thank you for the minutes of the meeting and the copy of the Syllabi discussed during the BOS.**
**Attached herewith the filled DA form mentioning the Honorarium amount.**

**Sincerely**
–


**Jitender Singh**
**Assistant Professor**
**Department of Mathematics**
**Guru Nanak Dev University Amritsar-143005**
**Punjab, INDIA**
http://sites.google.com/site/sonumaths2/homeJitender-Singh


–

Never take some one for granted.Hold every person Close to your Heart because "You might wake up one day and realize that you have lost a diamond while you were too busy in collecting stones." Remember this always happens in life.

[Quoted text hidden]

DA form_JitenderSinghGNDUv2.pdf
866K

Head
Department of Mathematical Sciences
I.K. Gujral Punjab Technical University
Kapurthala-144603 Pb. (India)

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Receipt No : 19913/2020/Dept of Mathematical Sciences

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Gmail

Harpreet Maan <maanh57@gmail.com>

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## BOS Meeting id and password

**sanjay srivastava** <sks64_bcet@yahoo.co.in>
To: Harpreet Maan <maanh57@gmail.com>

Mon, Jun 15, 2020 at 12:33 PM

I give my consent for this minutes of meeting and formulated contents of these attached subjects.

[Quoted text hidden]

Head
Department of Mathematical Sciences
I.K. Gujral Punjab Technical University
Kapurthala-144603 Pb. (India)