

Chaudhary Bansi Lal University, Bhiwani

(A State University established under Haryana Act No. 25 of 2014)



**Examination Scheme
&
Syllabus
For
M.Sc. - MATHEMATICS
(SEMESTER- I to IV)
(w.e.f. 2018-19)**

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Study & Evaluation Scheme
of
M.Sc. Mathematics
Summary

Programme	: M.Sc. Mathematics
Duration	: Two year full time (Four Semesters)
Medium	: English
Minimum Required Attendance	: 75%
Total Credits	: 114
Assessment/Evaluation	

Internal Marks	Major Test (End Semester Exam) Marks	Total Marks
20	80	100

Internal Evaluation

Minor Test	Attendance	Assignment	Total Marks
10	5	5	20

Duration of Examination

Major Test (End Semester Exam)	Internal (Minor Test)
3 hrs.	1 ½ hrs.

To qualify the course, a student is required to secure a minimum of 40% marks in aggregate including the Major Test (End Semester Examination) and internal evaluation. A candidate who secures less than 40% of marks in a course shall be deemed to have failed in that course. The student should have obtained at least 40% marks in aggregate to qualify the semester.

***Note:** From session 2019-20 students should be involved in extracurricular activities through Hobbies Club (Non credit) such as Poetry, Science Club, Drama etc. and will be awarded a letter grade at the completion of M. Sc.*

Question Paper Structure

There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.

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Chaudhary Bansi Lal University, Bhiwani
Scheme of Examination for M.Sc.-MATHEMATICS
Semester-I (w.e.f. 2018-19) Credits= 29

Sr. No.	Course/Paper Code	Courses	Type of Course	Credit			Contact Hours/Per Week			Examination Scheme				Total Marks
				Theory	Practical /Seminar	Total	Theory	Practical /Seminar	Total	Major Test (End Semester Exam)	Internal Assessment	Practical/ Seminar		
1	18MTH-101	Abstract Algebra -I	C.C.	4	--	4	4	--	4	80	20	--	100	
2	18MTH-102	Ordinary Differential Equations	C.C.	4	--	4	4	--	4	80	20	--	100	
3	18MTH-103	Mechanics	C.C.	4	--	4	4	--	4	80	20	--	100	
4	18MTH-104	Measure and Integration	C.C.	4	--	4	4	--	4	80	20	--	100	
5	18MTH-105	Mathematical Statistics	C.C.	4	--	4	4	--	4	80	20	--	100	
6	18MTH-106	Computing Lab-I (Introduction To MS Excel and Programming in Fortran)	S.E.C.	--	2	2	--	4	4	--	20	80	100	
7	18MTH-107	Mathematical Lab -I & Seminar	S.E.C.	-	5	5	-	2x5=10	10	-	20	80	100	
8		Open Elective-I	O.E.C.	2	--	2	2	--	2	80	20	--	100	
		Total				29			36				800	

C.C. = Core Course

Note: 1. 18MTH-107 (Mathematical Lab -I & Seminar) is based on courses 18MTH-101 to 18MTH-105 and two contact hours per week for each course.

2. For Open Elective-I, Students will have to choose a course from the list of open electives offered by other Departments of University.

S.E.C.=Skill Enhancement Course

O.E.C. = Open Elective Course

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Scheme of Examination for M.Sc.-MATHEMATICS
Semester-II (w.e.f. 2018-19)

St. No.	Course/Paper Code	Courses	Type of Course	Credit		Contact Hours Per Week			Examination Scheme			Total Marks
				Theory	Practical /Seminar	Total	Theory	Practical /Seminar	Total	Major Test (End Semester Exam)	Internal Assessment	
1	18MTH-201	Abstract Algebra -II	C.C.	4	--	4	--	4	80	20	--	100
2	18MTH-202	Complex Analysis	C.C.	4	--	4	--	4	80	20	--	100
3	18MTH-203	Topology	C.C.	4	--	4	--	4	80	20	--	100
4	18MTH-204	Operations Research Techniques	C.C.	4	--	4	--	4	80	20	--	100
5	18MTH-205	Computational Techniques	C.C.	4	--	4	--	4	80	20	--	100
6	18MTH-206	Computing Lab-II (Programming in C)	S.E.C.	--	2	--	4	4	--	20	80	100
7	18MTH-207	Mathematical Lab - II & Seminar	S.E.C.	-	5	-	2x5=10	10	-	20	80	100
8	18CS-100	Communication Skills	A.E.C.C.	--	1	--	2	2	--	50	--	50
Total						28		36				750

C.C. = Core Course

S.E.C. = Skill Enhancement Course

A.E.C.C. = Ability Enhancement Compulsory Course

Note: 1. 18MTH-207 (Mathematical Lab -II & Seminar) is based on courses 18MTH-201 to 18MTH-205 and two contact hours per week for each course.

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Chaudhary Bansi Lal University, Bhiwani
Scheme of Examination for M.Sc.- MATHEMATICS

Semester-III (w.e.f.2019-20)

Credits= 29

Marks=800

Sr. No.	Course/ Paper Code	Courses	Type of Course	Credit		Contact Hours Per Week			Examination Scheme			Total Marks
				Theory	Practical, /Seminar	Total	Theory	Practical /Seminar	Total	Major Test (End Semester Exam)	Internal Assessment	
1	18MTH-301	Partial Differential Equations	C.C.	4	--	4	--	4	80	20	--	100
2	18MTH-302	Differential Geometry	C.C.	4	--	4	--	4	80	20	--	100
3	18MTH-303	Mechanics of Solids-I	C.C.	4	--	4	--	4	80	20	--	100
4		Discipline Elective-I	D.S.E	4	--	4	--	4	80	20	--	100
5		Discipline Elective-II	D.S.E.	4	--	4	--	4	80	20	--	100
6	18MTH-311	Computing Lab-III (Programming in MATLAB)	S.E.C.	--	2	2	4	4	--	20	80	100
7	18MTH-312	Mathematical Lab -III & Seminar	S.E.C.	-	5	5	2x5=10	10	-	20	80	100
8		Open Elective-II	O.E.C.	2	--	2	--	2	80	20	--	100
		Total			29	29	36	36				800

C.C. = Core Course, O.E.C. = Open Elective Course, D.S.E. = Discipline Specific Elective, S.E.C. = Skill Enhancement Course
List of courses for Discipline Elective I&II: (a) 18MTH-304 Fluid Dynamics

- (b) 18MTH-305 Discrete Mathematics
- (c) 18MTH-306 Analytical Number Theory
- (d) 18MTH-307 Coding Theory
- (e) 18MTH-308 Applied Statistics
- (f) 18MTH-309 Financial Mathematics
- (g) 18MTH-310 Bio- Mathematics

Note:1. 18MTH-312 (Mathematical Lab -III & Seminar) is based on Courses 18MTH-301 to 18MTH-303 & Discipline Elective-I & Discipline Elective-II and two contact hours per week for each course.
2. The Discipline Elective Courses can be offered depending upon the availability of the resources and faculties.

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Syllabi, Department of Mathematics, CBLU

w.e.f. session 2018-19

3. For Open Elective-II, Students will have to choose a course from the list of open electives offered by other Departments of University.

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Chaudhary Bansi Lal University, Bhiwani

Scheme of Examination for M.Sc. - MATHEMATICS.

Semester-IV (w.e.f. 2019-20)

Sr. No.	Course/Paper Code	Courses	Type of Course	Credit			Contact Hours Per Week			Examination Scheme				Total Marks
				Theory	Practical/Seminar	Total	Theory	Practical/Seminar	Total	Major Test (End Semester Exam)	Internal Assessment	Practical/Seminar		
1	18MTH-401	Functional Analysis	C.C.	4	--	4	4	--	4	80	20	--	100	
2	18MTH-402	Integral Equations and Calculus of Variations	C.C.	4	--	4	4	--	4	80	20	--	100	
3	18MTH-403	Mechanics of Solids-II	C.C.	4	--	4	4	--	4	80	20	--	100	
4		Discipline Elective-III	D.S.E.	4	--	4	4	--	4	80	20	--	100	
5		Discipline Elective-IV	D.S.E.	4	--	4	4	--	4	80	20	--	100	
6	18MTH-411	Computing Lab-IV (Programming in LaTeX and Mathematica)	S.E.C.	--	2	2	--	4	4	--	20	--	100	
7	18MTH-412	Mathematical Lab-IV & Seminar	S.E.C.	-	5	5	--	2x5=10	10	--	20	80	100	
8	18MTH-413	Self-Study Paper	A.E.C.C.	--	1	1	--	2	2	--	--	50	50	
Total						28			36				750	

Marks=750

Credits=28

C.C. = Core Course, D.S.E. = Discipline Specific Elective, S.E.C.= Skill Enhancement Course, A.E.C.C.= Ability Enhancement Compulsory Course

List of Courses for Discipline Elective III&IV:

- (a) 18MTH-404 Advanced Fluid Dynamics
- (b) 18MTH-405 Mathematical Aspects of Seismology
- (c) 18MTH-406 Mathematical Modeling
- (d) 18MTH-407 Advanced Coding Theory
- (e) 18MTH-408 Statistical Inference
- (f) 18MTH-409 Fourier and Wavelet Analysis

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(g) 18MTH 410 Bio-Mechanics

Note:1. 18MTH-412 (Mathematical Lab -IV & Seminar) is based on Courses 18MTH-401 to 18MTH-403, Discipline Elective-III, Discipline Elective-IV and two contact hours per week for each Course.

2. The Discipline Elective Courses can be offered depending upon the availability of the resources and faculties.

Duration - 2 Years (4 Semesters)

Total Marks - 3100

Total credits-114

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GENERAL INSTRUCTIONS

I. SELF-STUDY PAPER:

Maximum Marks-50

Objective: This course intends to create habits of reading books and to develop writing skills in a manner of creativity and originality. The students are to emphasis his/her own ideas/words which he/she has learnt from different books, journals and newspapers and deliberate the same by adopting different ways of communication techniques and adopting time scheduling techniques in their respective fields.

This course aims:

- To motivate the students for innovative, research and analytical work
- To inculcate the habit of Self-Study and comprehension
- To infuse the sense of historical back ground of the problems
- To assess intensity of originality and creativity of the students

Students are guided to select topic of their own interest in the given area in consultation with their teachers/Incharge/Resource Person.

Instructions for Students

1. Choose the topic of your interest in the given areas and if necessary, seek the help of your teacher.
2. Select a suitable title for your paper.
3. You are expected to be creative and original in your approach.
4. Submit your paper in two typed copies of A4 size 5-6 pages (both sides in 1.5 line spaces in Times New Roman Font size 12).
5. Organize your paper in three broad steps:
 - (a) Introductions
 - (b) Main Body
 - (c) Conclusions
6. Use headings and sub-headings

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7. Use graphics wherever necessary
8. Give a list of books/references cited/used
9. The external examiner will evaluate the self study paper in two ways i.e. Evaluation 30 Marks and Viva-Voce 20 marks.

Distribution of Marks

1. The evaluation is divided into different segments as under : **30 Marks**
The 30 marks evaluation is further subdivided as under:
 - (i) Selection of Topic - 6 Marks
 - (ii) Logical Organization of subject matter - 10 Marks
 - (iii) Conclusions - 10 Marks
 - (iv) References - 4 Marks
2. Viva-Voce: **20 Marks**

The external examiner will hold Viva-Voce based on contents of the student's Self Study Paper focusing upon the description by the Candidate.

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