

# **Bachelor of Science**

**(Non- Medical)**

## **SCHEME AND SYLLABUS**



**Kaithal (Haryana)**

**(2017)**

**(Recognized by UGC & Approved by Govt. of Haryana)  
(Web: [www.niilmuniversity.in](http://www.niilmuniversity.in))**

### Scheme of Examination

Papers	Marks		Total Marks	Duration(Hrs.)
	Written	Internal Assessment		
<b>Semester I</b>				
Inorganic Chemistry	34	16	50	3
Physical Chemistry	34	16	50	3
Organic Chemistry	32	18	50	3
Classical mechanics & theory of relativity	50	25	75	3
Properties of matter & kinetic theory of gases	50	25	75	3
Algebra	34	16	50	3
Calculus	34	16	50	3
Solid geometry	32	18	50	3
English-I	30	20	50	3
Total			500	
<b>Semester II</b>				
Inorganic Chemistry	34	16	50	3
Physical Chemistry	34	16	50	3
Organic Chemistry	32	18	50	3
Chemistry Lab-I	80	20	100	3
Electricity, magnetism & electromagnetic theory	50	25	75	3
Semiconductor devices	50	25	75	3
Physics lab-I	80	20	100	3
Number theory and trigonometry	34	16	50	3
Ordinary differential equation	34	16	50	3
Vector calculus	32	18	50	3
English-II	30	20	50	3
Total			700	
<b>Semester III</b>				
Inorganic Chemistry	32	18	50	3
Physical Chemistry	34	16	50	3
Organic Chemistry	34	16	50	3

Computer programming & thermodynamics	50	25	75	
Wave and optics - I	50	25	75	3
Advanced calculus	34	16	50	3
Partial differential equation	34	16	50	3
Statics	32	18	50	3
Hindi	30	20	50	3
Total			500	
<b>Semester IV</b>				
Inorganic Chemistry	32	18	50	3
Physical Chemistry	34	16	50	3
Organic Chemistry	34	16	50	3
Chemistry Lab-I	80	20	100	3
Statistical Physics	50	25	75	3
Wave and Optics - II	50	25	75	3
Physics lab-I	80	20	100	3
Sequences and Series	34	16	50	3
Special function and Integral	34	16	50	3
Programming in C & Numerical methods	32	18	50	3
Hindi	30	20	50	3
Total			700	
<b>Semester V</b>				
Inorganic Chemistry	34	16	50	3
Physical Chemistry	32	18	50	3
Organic Chemistry	34	16	50	3
Quantum and Laser Physics	50	25	75	3
Nuclear Physics	50	25	75	3
Real Analysis	34	16	50	3
Group & Rings	34	16	50	3
Numerical Analysis	32	18	50	3
Total			450	
<b>Semester VI</b>				
Inorganic Chemistry	34	16	50	3
Physical Chemistry	32	18	50	3
Organic Chemistry	34	16	50	3

Chemistry Lab-I	80	20	100	3
Solid state and Nanophysics	50	25	75	3
Atomic and Molecular Spectroscopy	50	25	75	3
Physics Lab-I	80	20	100	3
Real & Complex Analysis	34	16	50	3
Linear Algebra	34	16	50	3
Dynamics	32	18	50	3
Total			650	
Grand Total			3500	

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**Master of Science**

**In**

**(Chemistry)**

**SCHEME AND SYLLABUS**



**(2017)**

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### Scheme of Examination

Papers	Marks		Total Marks	Duration (Hrs.)
	Written	Internal Assessment		
<b>Semester I</b>				
Inorganic Chemistry General	60	20	80	3
Organic Chemistry General	60	20	80	3
Physical Chemistry General	60	20	80	3
Mathematics for Chemists/ Chemistry of Life Science	60	20	80	3
Total			320	
<b>Semester II</b>				
Inorganic Chemistry General	60	20	80	3
Organic Chemistry General	60	20	80	3
Physical Chemistry General	60	20	80	3
Computer for Chemists	60	20	80	3
Inorganic Chemistry Lab	80	20	100	3
Organic Chemistry Lab	80	20	100	3
Physical Chemistry Lab	80	20	100	3
Total			620	
<b>Semester III</b>				
Spectroscopy	60	20	80	3
Inorganic Chemistry-I /Physical Chemistry-I/ Organic Chemistry-I	60	20	80	3
Inorganic Chemistry-II /Physical Chemistry-II/ Organic Chemistry-II	60	20	80	3
Inorganic Chemistry-III /Physical Chemistry-III/ Organic Chemistry- III	60	20	80	3
Total			320	
<b>Semester IV</b>				
Instrumental Method of Analysis	60	20	80	3
Spectroscopy-II	60	20	80	3
Inorganic Chemistry-I /Physical Chemistry-I/ Organic Chemistry-I	60	20	80	3
Inorganic Chemistry-II /Physical Chemistry-II/ Organic Chemistry-II	60	20	80	3

Inorganic Chemistry-III /Physical Chemistry-III/ Organic Chemistry-III	60	20	80	3
Inorganic Chemistry Lab-I/Physical Chemistry Lab-I/ Organic Chemistry Lab-I	80	20	100	3
Inorganic Chemistry Lab-II /Physical Chemistry Lab-II/ Organic Chemistry Lab-II	80	20	100	3
Inorganic Chemistry Lab-III /Physical Chemistry Lab-III/ Organic Chemistry Lab-III	80	20	100	3
Seminar			40	
Total			740	
Grand Total			2000	

**Master of Science**

**In**

**(MATHEMATICS)**

**SCHEME AND SYLLABUS**



**(2017)**

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# NIILMUNIVERSITY KAITHAL

## SCHEME OF STUDIES & EXAMINATIONS

**DEPARTMENT: - M.SC. MATHEMATICS**

**Semester – I**  
**Effective from Session, 2017-2019**

Sr. No.	Paper title (Nomenclature)	Teaching Scheme				Examination Scheme			Duration Of Exam.
		L	T	P	Credit	Internal Marks	External Marks	Total	
1	Advanced Abstract Algebra - I	5	0	0	5	30	70	100	3 Hours
2	Real Analysis - I	5	0	0	5	30	70	100	3 Hours
3	Topology	5	0	0	5	30	70	100	3 Hours
4	Complex Analysis - I	5	0	0	5	30	70	100	3 Hours
5	Differential Equations - I	5	0	0	5	30	70	100	3 Hours
6	Practical-I	0	0	5	5	-----	-----	100	4 Hours
Total		25	0	5	30	150	350	600	

- Notes: 1. For internal assessment, two compulsory minor tests of 20 marks each will be conducted for each theory paper and for remaining 10 marks, evaluation will be done on the basis of class performance through quiz / seminar / assignment etc.
2. Optional can be offered subject to availability of requisite resources/ faculty in the department.

**Semester - II**  
**Effective from Session, 2017-2019**

Sr. No.	Paper title (Nomenclature)	Teaching Scheme				Examination Scheme			Duration Of Exam
		L	T	P	Credit	Internal Marks	External Marks	Total	
1	Advanced Abstract Algebra - II	5	0	0	5	30	70	100	3 Hours
2	Real Analysis - II	5	0	0	5	30	70	100	3 Hours
3	Computer Programming (Theory)	5	0	0	5	30	70	100	3 Hours
4	Complex Analysis - II	5	0	0	5	30	70	100	3 Hours
5	Differential Equations - II	5	0	0	5	30	70	100	3 Hours
6	Practical-II	0	0	5	5	-----	-----	100	4 Hours
Total		25	0	5	30	150	350	600	

- Notes: 1. For internal assessment, two compulsory minor tests of 20 marks each will be conducted for each theory paper and for remaining 10 marks, evaluation will be done on the basis of class performance through quiz / seminar / assignment etc.
2. Optional can be offered subject to availability of requisite resources/ faculty in the department.

**Semester - III**  
**Effective from Session, 2017-2019**

Sr. No.	Paper title (Nomenclature)	Teaching Scheme				Examination Scheme			Duration Of Exam
		L	T	P	Credit	Internal Marks	External Marks	Total	
1	Functional Analysis	5	0	0	5	30	70	100	3 Hours
2	Analytical Mechanics and Calculus of Variations	5	0	0	5	30	70	100	3 Hours
3	Elasticity	5	0	0	5	30	70	100	3 Hours
4	Fluid Mechanics - I	5	0	0	5	30	70	100	3 Hours
5	Integral Equations	5	0	0	5	30	70	100	3 Hours
6	Practical-III	0	0	5	5	-----	-----	100	4 Hours
Total		25	0	5	30	150	350	600	

- Notes: 1. For internal assessment, two compulsory minor tests of 20 marks each will be conducted for each theory paper and for remaining 10 marks, evaluation will be done on the basis of class performance through quiz / seminar / assignment etc.
2. Optional can be offered subject to availability of requisite resources/ faculty in the department.

**Semester - IV**  
Effective from Session, 2017-2019

Sr. No.	Paper title (Nomenclature)	Teaching Scheme				Examination Scheme			Duration Of Exam.
		L	T	P	Credit	Internal Marks	External Marks	Total	
1	General Measure and Integration Theory	5	0	0	5	30	70	100	3 Hours
2	Partial Differential Equations	5	0	0	5	30	70	100	3 Hours
3	Mechanics of Solids	5	0	0	5	30	70	100	3 Hours
4	Boundary Value Problems	5	0	0	5	30	70	100	3 Hours
5	Mathematical Aspects of Seismology	5	0	0	5	30	70	100	3 Hours
6	Practical-IV	0	0	5	5	-----	-----	100	4 Hours
Total		25	0	5	30	150	350	600	

Notes: 1. For internal assessment, two compulsory minor tests of 20 marks each will be conducted for each theory paper and for remaining 10 marks, evaluation will be done on the basis of class performance through quiz / seminar / assignment etc.

2. Optional can be offered subject to availability of requisite resources/ faculty in the department.

	THEORY	PRACTICAL	TOTAL
1 <sup>ST</sup> SEMESTER TOTAL MARKS :	350	150	600
2 <sup>ND</sup> SEMESTER TOTAL MARKS :	350	150	600
3 <sup>RD</sup> SEMESTER TOTAL MARKS :	350	150	600
4 <sup>TH</sup> SEMESTER TOTAL MARKS :	350	150	600



NIILM UNIVERSITY, KAITHAL

SYLLABUS

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TWO-YEAR MASTER  
COURSE OF STUDIES



PHYSICS

2014



## Scheme of Examination

15  
20  
15  
15  
15

Papers	Marks		Total Marks	Duration(Hrs.)
	Written	Internal Assessment		
<b>Semester I</b>				
Classical Mechanics	60	20	80	3
Mathematical Physics	60	20	80	3
Electronic Devices and Circuits-I	60	20	80	3
Quantum Mechanics-I	60	20	80	3
Practical	120	40	160	3
Total			480	
<b>Semester II</b>				
Quantum Mechanics-II	60	20	80	3
High Energy Physics	60	20	80	3
Electronic Devices and Circuits-II	60	20	80	3
Solid State Physics	60	20	80	3
Practical	120	40	160	3
Seminar			40	
Total			520	
<b>Semester III</b>				
Statistical Mechanics	60	20	80	3
Advanced Quantum Mechanics	60	20	80	3
Paper III	60	20	80	3
Paper IV	60	20	80	3
Practical	120	40	160	3
Total			480	
<b>Semester IV</b>				
Electrodynamics and Plasma Physics	60	20	80	3
Atomic and Molecular Physics	60	20	80	3
Paper III	60	20	80	3
Paper IV	60	20	80	3
Practical	120	40	160	3
Seminar			40	
Total			520	
<b>Grand Total</b>			<b>2000</b>	

**Optional Papers: Student need to opt one paper from each set for III and IV Semester.**

**Semester-III**

- (i) Paper-III option I:Nuclear Physics-I
- (ii) Paper-III option II:Material Science-I
  
- (iii)Paper-IV option I:Computational Methods and Programming-I
- (iv)Paper-IV option II: Electronics-I

**Semester-IV**

- (v) Paper-III option I:Nuclear Physics-II
- (vi)Paper-III option II:Material Science-II
  
- (vii) Paper-IV option I:Computational Methods and Programming-II
- (viii) Paper-IV option II:Electronics-II