B.O.S Meeting dated 29 August 2016

SAURASHTRA UNIVERSITY



Accredited Grade 'A' by NAAC

Faculty of Science Revised Syllabus and Ordinances for B.Sc. / M.Sc. (Applied Physics) Integrated (Based on UGC-CBCS- Template 2015)

Under

Department of Nano science & Advanced Materials

Saurashtra University, University Road, University Campus Rajkot– 360005 Gujarat, India

www.saurashtrauniversity.edu

B.Sc./M.Sc. (Applied Physics) Integrated Course

Bachelor of Science (B.Sc.) / Master of Science (M.Sc.) in Applied Physics of Saurashtra University is a Choice Based Credit System (CBCS) programming comprising of total **forty (40) theory papers** and **twenty-two (22) practicals** [twenty-four (24) theory papers and eighteen (18) practical for B.Sc. degree (Sem I-VI) and sixteen (16) theory paper and four (04) Practical for M.Sc. degree]. During M.Sc. programme (sem VII-X), under CBCS pattern, a student can select any FOUR elective papers out of set of TWELVE elective papers offered (Group A, B, C & D) and TWO interdisciplinary papers.

During B.Sc. Programme, each semester will have FOUR theory papers and three practical course whereas, M.Sc. Programme, each semester will have FOUR theory papers and one practical course. Each theory paper will be of 100 marks with external examination of 70 marks of 2:30 hrs. duration and internal examination of 30 marks of 1 hr. duration. In B.Sc. Programme, each practical examination will be of 50 marks of practical while, in M.Sc. Programme, each practical examination will be of 200 marks with 150 marks of practical and/or project work and 50 marks for viva – voice examination.

(B.Sc.) / M.Sc. (Applied Physics) Integrated CBCS is a fulltime dual degree course and is divided into TEN Semesters (Sem. I-VI for B.Sc. degree and Sem. I-X for M.Sc. Integrated degree). Term grant (admission to examination) will be based on the satisfactory attendance of the student, as per Saurashtra University rules.

The course structure for B.Sc. / M.Sc. (Applied Physics) Integrated CBCS program semester I to X has been summarized as below.

SAURASHTRA UNIVERSITY RAJKOT-360005

Faculty of Science

Ordinances & Regulations for the Degree of B.Sc. / M.Sc. (Applied Physics) Integrated (As per Choice Based Credit System)

Effective from June - 2016

<u>O. M. Sc. App.Phy. Int – 1</u>

- **I.** For the eligibility of the admission for the Degree of B.Sc. / M.Sc. (Applied Physics) Integrated, the candidate must have passed 12th Science examination or any other equivalent examination recognized by the University/UGC. For determining the merit for admission, 100% weightage will be given to the marks obtained by the candidate at an entrance test conducted by the University.
- **II.** The candidate having passed Std. 12th (Science) based Diploma in technical education by Government of Gujarat shall also be eligible for admission to Degree of B.Sc. / M.Sc. (Applied Physics) Integrated. For determining the merit for admission, 100% weightage will be given to the marks obtained by the candidate at entrance test conducted by the University.
- **III.** The relaxation for reserved category candidate regarding minimum marks to be obtained by the candidate at the entrance test shall be as per the state government/ UGC policy.

<u>O. M. Sc. App.Phy. Int – 2</u>

B.Sc. / M.Sc. (Applied Physics) Integrated programme is a dual degree programme of FIVE academic years duration consisting of TEN semesters, which will be required to be completed within SEVENyears from the date of his/her first admission in the semester - I.

However, on successful completion of semesters I-VI, the candidate will be eligible to apply for the award of B.Sc. (Applied Physics) Degree.

<u>O. M. Sc. App.Phy. Int – 3</u>

B.Sc. / M.Sc. (Applied Physics) Integrated programme is a regular fulltime programme and therefore, admitted candidate cannot join any other course of study without prior permission of the University.

<u>O. M. Sc. App.Phy. Int – 4</u>

The medium of instruction & Examination shall be English.

O. M. Sc. App.Phy. Int – 5

The Choice Based Credit System (CBCS) programme of the University is a comprehensive and continuance evolutionary programme and minimum 75% attendance is mandatory for the students. Non – Compliance of this requirement may amount in to rejection of the concerned term (Semester).

<u>O. M. Sc. App.Phy. Int – 6</u>

Head of Department shall have to take appropriate measures against Ragging & Gender problems arising in the University Department. In case of occurrence of any such incidence, the violator shall be dealt with very seriously and appropriate stringent action be taken by the Head of Department by observing principle of natural justice. Head of Department may appoint a committee to inquire in to the matter which will also observe the principle of natural justice. The committee will submit its report to the Head of Department who will forward the, same with his comment there upon to the University Registrar, for taking further necessary action in the matter.

<u>O. M. Sc. App.Phy. Int – 7</u>

In case a candidate at an University Semester End Examination fails to obtain minimum marks for passing in particular course, he/she will be required to reappear in that course without keeping term for that semester. The candidate will have to reappear in the semester end examination by paying fresh examination fee along with an application form. Such a candidate when obtains minimum or more than minimum marks for passing in the course, his/her marks of reappearance will be carried forward for award of class/CGPA.

O. M. Sc. App.Phy. Int – 8

Admission granted by the University Department to any student shall be provisional till the enrolment/registration/enlistment is made by the University & in case of admission is granted on the bases of provisional eligibility certificate, the conditions & instructions given by the University should be complied within the time limit fixed by the University or latest by the beginning of next semester, otherwise term kept by the such a student will be forfeited and no fees on any account will be refunded.

<u>O. M. Sc. App.Phy. Int – 9</u>

The Dissertation/Project shall be on one of the topics approved by the committee of post-graduate teachers teaching in the Department. The student will submit the same for approval to the Head of post-graduate Department not later than the beginning of next semester. A supervisor/guide shall be appointed

by the HOD & then the student will have to complete the dissertation under the guidance of the Supervisor/Guide.

<u>O. M. Sc. App.Phy. Int – 10</u>

All admitting authorities (Including the College/University Department/ P. G. Centre/Institute or centralized admission committee etc.) will have to strictly observe the provisions of reservation policy of the Govt./U.G.C./Rehabilitation Council of India etc, before admission process is under taken. The authority will ascertain quota & number of seats available for reserved class candidates and allotted to the eligible candidates. The data based information should also be provided to the University only after conclusion of entire process of admission.

<u>O. M. Sc. App.Phy. Int – 11</u>

B.Sc. / M.Sc. (Applied Physics) Integrated is a double degree programme divided into TEN semesters. However, if candidate opts to be out of programme on successful completion of semesters I-VI, he/she shall be entitled to apply for award of B.Sc. (Applied Physics) degree as per statutes and rules of the University/ and UGC.

To pass M.Sc. (Applied Physics) Integrated Examination, student should clear all the TEN semester examinations within a period of **seven years** from the date of his/her first admission in the programme. After this stipulated period he/she shall be required to get reregister himself/herself as per the rules of university.

<u>O. M. Sc. App.Phy. Int – 12</u>

For obtaining B.Sc. / M. Sc. (Applied Physics) Integrated Degree, a candidate shall be required to obtain separately 40% of the total marks/ grade points in each of the theory papers, practical, project, dissertation, term work, viva voce (if any) and same is also applicable for internal evaluation i.e. 40% passing in internal as well as external examinations (28 out of 70 in external examination and 12 out of 30 in internal examination). The student should earn minimum required credits from each semester. The total number of credits to be earned for B.Sc. (Applied Physics) degree are 180 while for M. Sc. (Applied Physics) Integrated Degree, the total number of credits to be earned at least 40% aggregate marks in Semester I-VI examination while 40% marks in Semester VII-X examination.

<u>O. M. Sc. App.Phy. Int – 13</u>

The department may organize an educational tour comprising of visit to Industry/National Institute/ National laboratories etc. at the end of semester V and Semester IX. The department will arrange the educational tour at the risk and cost of the students excluding contributory share of the University as per provision made in PG rules of the University.

<u>O. M. Sc. App.Phy. Int – 14</u>

Each of the admitting authority shall have to prepare and publish the merit list in the three fold as mentioned below :-

- (1) Candidates who have passed the 12th Science examination of Gujarat Board or any other recognized board provided the parent/guardian of the candidate is a domicile of Gujarat State, indicating category against each of the name in the last column such as General/S.T./S.C./S.E.B.C./P.H./Widow/Divorce etc.
- (2) Candidate who has passed the 12th Science examination from other state boards recognized equivalent by University/UGC.

<u>O. M. Sc. App.Phy. Int – 15</u>

Every candidate admitted in FIRST semester shall have to pass the examination of "Environmental Protection Course" as prescribed by the Hon. Supreme Court of India and course curriculum shall be the same as it is prescribed by the U.G.C. The examination for the same will be conducted by the Department as per circulars issued by the University time to time.

<u>O. M. Sc. App.Phy. Int – 16</u>

The minimum requirement for the attendance is 75% in each of the theory, lectures, and practical, etc.

<u>O. M. Sc. App.Phy. Int – 17</u>

A candidate will be entitled for the award of B.Sc. (Applied Physics) Degree on successful completion of semesters I-VI and of M.Sc. (Applied Physics) degree on successful completion of semesters I-X. The result of SEE of the candidate will not be declared if candidate is having any backlog at semesters VI/X.

R. M. Sc. App.Phy. Int - 1

The B.Sc. / M. Sc. Degree may be awarded by written examination and practical or partly by papers including practical and Project/dissertation, etc.

<u>R. M. Sc. App.Phy. Int – 2</u>

The detail scheme of examination:

Scheme of Examination

Sem-I to VI (SEE)

Subject	Title of the	Тс	otal mai	rks	Passing	g Standa	rd	Duration	No.
Code	Course	CCA (Internal)	SEE (External)	Total	CCA	SEE	Total	of SEE	of credits
		30	70	100	12	28	40	2 ½ hours	3
		30	70	100	12	28	40	2 ½ hours	6
		30	70	100	12	28	40	2 ½ hours	6
		30	70	100	12	28	40	2 ½ hours	6
		15	35	50	06	14	20	3 hours	3
		15	35	50	06	14	20	3 hours	3
		15	35	50	06	14	20	3 hours	3
				550				Total Credits	30

Sem-VII to X (SEE)

Subject Code	Title of the Course	1	Total marks Passing Standard			Duration of SEE	No. of credits		
		CCA (Internal)	SEE (External)	Total	CCA	SEE	Total		
		30	70	100	12	28	40	2 ½ hours	4
		30	70	100	12	28	40	2 ½ hours	4
		30	70	100	12	28	40	2 ½ hours	4
		30	70	100	12	28	40	2 ½ hours	4
		-	75 + 25 (viva)	100	-	28	40	3 hours	4
		-	75 + 25 (viva)	100	-	28	40	3 hours	4
		Tot	al Marks	600				Total Credits	24

R. M. Sc. App.Phy. Int – 3

There will be theory and practical examination at the end of each semester. The viva voce examination will be conducted at the end of each semester.

R. M. Sc. App.Phy. Int - 4

No student shall be allowed to fill up the University SEE Examination form unless he/she satisfy attendance requirements and his/her journals certified by the Department. Noncompliance of this, student will be required to get his/her name re-register and keeping the relevant term in the ensuing academic year by obtained a fresh admission.

<u>R. M. Sc. App.Phy. Int - 5</u> Promotion to next higher semester

(1) For admission to second semester:

The candidate will be admitted to the second semester provided he/she has (i) secured 40% marks/equivalent grades in CCA (internal) of the first semester and (ii) has appeared in the semester end examinations of the first semester irrespective of the result of the semester end examination of the first semester.

(2) For admission to third semester:

The candidate will be admitted to third semester irrespective of the results of the semester end examination of second semester provided (i) he/she has cleared all the courses of the first semester and (ii) obtained minimum 40% marks or equivalent grades in the CCA of the second semester.

<u>R. M. Sc. App.Phy. Int -6</u>: Duration of Degree

The degree of M.Sc. (Applied Physics) shall have duration of TEN semesters. To pass the whole M.Sc. Examination, student should clear all the TEN semester examinations.

R.M. Sc. App.Phy. Int -7: Term keeping

The candidate, who fulfills the requirements of minimum attendance satisfactorily, completed CCA component and observed other rules of the Department would be said to have kept the terms for that semester.

The minimum requirement for the term keeping is 75% of the total number of teaching sessions conducted in each of the semester. Any candidate who does not fulfill this requirement will not be permitted to appear in the concerned Semester End Examination.

If a student goes out of class officially to represent the University / Department with the permission of the Head of the Department in local / state / national/ international activities his/her attendance would be compensated for that stipulated period.

R. M. Sc. App.Phy. Int 8: Examinations

A External Examinations

There will be an examination at the end of each of the semester (SEE) and student shall have to appear in theory papers, practical/project/dissertation/term work and viva-voce if any, for which he/she has kept the terms in accordance with the regulations.

B Internal examinations

In order to help the students to evaluate and improve continuously, the internal examinations would be arranged and conducted throughout the semester by the Department as per policy of the University.

- C For obtaining M. Sc. Degree the candidate shall be required to obtain separately 40% of the total marks/ grade points in each of the theory papers, practical, project, dissertation, term work, viva voce (if any) and same is also applicable for internal evaluation i.e. 40% passing in internal as well as external examinations (SE) (28 out of 70 for external and 12 out of 30 for internal). The
 - student should earn minimum required credits for each semester and the total number of credits for B.Sc. (Applied Physics) degree are 180 and for M. Sc. (Applied Physics) Integrated Degree the total number of credits to be earned are 276.
- **D** If the candidate is failed to obtain minimum passing marks in any course (either in Internal or External evaluation) he/she would be required to pass the same by reappearing in the concern subject without keeping term. The passing marks obtained by the candidate will be carried forward for awarding class.

R. M. Sc. - App.Phy. Int 9:

No student will be allowed to reappear in a course or practical or viva-voce or Semester End Examination once he/she has passed it.

R. M. Sc. App.Phy. Int -10:

A student will be declared to have passed the final examination leading to the award of Degree of Master of Science in first class with distinction or first class or second class as the case may be, provided he/she passes the examination in all the concerned subjects in each of the semesters.

PROCEDURE FOR AWARDING THE GRADES

10.1 The computation for the Semester Grade Point Average (SGPA) and cumulative grade point average (CGPA) shall be as follows:

The raw marks scored by the student (CCA + SEE) shall be indicated as M.

The 'Grade Point' and the grade letter that shall be awarded to the student on the bases of the range in which **M** is found is given in the following Table:

Different Weightage Scales:

(For awarding	grades to C	ombined.	Internal and	Semester	End Exam	Scores)
(i or awaraing	BIGUES LO C	omonica,	internar ana	Jennester		5001037

	Different Scales					
Combined	Internal	Semester End Exam				
90 <x<=100< td=""><td>27<x<=30< td=""><td>63<x<=70< td=""><td>0</td><td>10</td></x<=70<></td></x<=30<></td></x<=100<>	27 <x<=30< td=""><td>63<x<=70< td=""><td>0</td><td>10</td></x<=70<></td></x<=30<>	63 <x<=70< td=""><td>0</td><td>10</td></x<=70<>	0	10		
80 <x<=90< td=""><td>24<x<=27< td=""><td>56<x<=63< td=""><td>Α</td><td>9</td></x<=63<></td></x<=27<></td></x<=90<>	24 <x<=27< td=""><td>56<x<=63< td=""><td>Α</td><td>9</td></x<=63<></td></x<=27<>	56 <x<=63< td=""><td>Α</td><td>9</td></x<=63<>	Α	9		
70 <x<=80< td=""><td>21<x<=24< td=""><td>49<x<=56< td=""><td>В</td><td>8</td></x<=56<></td></x<=24<></td></x<=80<>	21 <x<=24< td=""><td>49<x<=56< td=""><td>В</td><td>8</td></x<=56<></td></x<=24<>	49 <x<=56< td=""><td>В</td><td>8</td></x<=56<>	В	8		
60 <x<=70< td=""><td>18<x<=21< td=""><td>42<x<=49< td=""><td>С</td><td>7</td></x<=49<></td></x<=21<></td></x<=70<>	18 <x<=21< td=""><td>42<x<=49< td=""><td>С</td><td>7</td></x<=49<></td></x<=21<>	42 <x<=49< td=""><td>С</td><td>7</td></x<=49<>	С	7		
50 <x<=60< td=""><td>15<x<=18< td=""><td>35<x<=42< td=""><td>D</td><td>6</td></x<=42<></td></x<=18<></td></x<=60<>	15 <x<=18< td=""><td>35<x<=42< td=""><td>D</td><td>6</td></x<=42<></td></x<=18<>	35 <x<=42< td=""><td>D</td><td>6</td></x<=42<>	D	6		
40 <x<=50< td=""><td>12<x<=15< td=""><td>28<x<=35< td=""><td>E</td><td>5</td></x<=35<></td></x<=15<></td></x<=50<>	12 <x<=15< td=""><td>28<x<=35< td=""><td>E</td><td>5</td></x<=35<></td></x<=15<>	28 <x<=35< td=""><td>E</td><td>5</td></x<=35<>	E	5		
Less than 40	Less than 12	Less than 28	F	4		

	Semester End SGPA	Programme End CGPA	Grade	Description
1	9.0 <sgpa <="10</td"><td>9.0 <cgpa <="10</td"><td>0</td><td>Outstanding</td></cgpa></td></sgpa>	9.0 <cgpa <="10</td"><td>0</td><td>Outstanding</td></cgpa>	0	Outstanding
2	8.0 <sgpa <="9.0</td"><td>8.0 <cgpa <="9.0</td"><td>Α</td><td>Upper Distinction</td></cgpa></td></sgpa>	8.0 <cgpa <="9.0</td"><td>Α</td><td>Upper Distinction</td></cgpa>	Α	Upper Distinction
3	7.0 <sgpa <="8.0</td"><td>7.0 <cgpa <="8.0</td"><td>В</td><td>Distinction</td></cgpa></td></sgpa>	7.0 <cgpa <="8.0</td"><td>В</td><td>Distinction</td></cgpa>	В	Distinction
4	6.0 <sgpa <="7.0</td"><td>6.0 <cgpa <="7.0</td"><td>С</td><td>First Class</td></cgpa></td></sgpa>	6.0 <cgpa <="7.0</td"><td>С</td><td>First Class</td></cgpa>	С	First Class
5	5.0 <sgpa <="6.0</td"><td>5.0 <cgpa <="6.0</td"><td>D</td><td>Second Class</td></cgpa></td></sgpa>	5.0 <cgpa <="6.0</td"><td>D</td><td>Second Class</td></cgpa>	D	Second Class
6	4.0 <sgpa <="5.0</td"><td>4.0 <cgpa <="5.0</td"><td>E</td><td>Passed</td></cgpa></td></sgpa>	4.0 <cgpa <="5.0</td"><td>E</td><td>Passed</td></cgpa>	E	Passed
7	SGPA Less than 4.0	CGPA Less than 4.0	F	Failed

Scale for Awarding Grades based on SGPA & CGPA:

The Candidatewho fails to obtain less than 40% raw marks in any individual paper/course shall have to clear the same in ensuing attempt and the marks of his/her previous attempt in which his/she have obtain more than 40% of marks will be carry forwarded for calculating his/her CGPA/SGPA & class.

10.2 The Semester Grade Point Average (SGPA) shall be based on aggregate marks of CCA and SEE.

If G is the grade point awarded to the candidate as described in the above table in a particular course and if Cr is the Credit Value for the course (for instance Cr=4) then the **grade** credit point (Gr Cr Pt) in that paper is given by

Grade Credit Points (Gr Cr Pt) = Credit of the course (Cr) x Grade secured in that course (G)

Sum of all Grade Credit Points secured each course

of the relevant semester by the student

SGPA=-----

Sum of Credits assigned to all Courses in this Semester

Sum of all Grade Credit Points of the entire Programme

CGPA=-----

Sum of Credits all semesters of the Programme

The CGPA shall be expressed to an accuracy of three decimal digits.

The percentage equivalence shall be obtained by multiplying CGPA with 10.

<u>R. M. Sc. App.Phy. Int – 11</u>

The Ordinances and Regulations are also applicable to the P.G. Master Degree Programme being conducted at the University Department and Centre mentioned below.

Faculty of Science offers the following programme in post graduate courses:

	Sr. No.	PG Department / PG Center	Programme
<u>R. M.</u>	1	P.G. Centre of Bioinformatics	M. Sc. Bioinformatics
	2	Department of Chemistry	M. Sc. Chemistry/Biochemistry
	3	Department of Computer Science & Applications	MCA (As per scheme of the GTU) M. Sc. (I.T.)
	4	PG Center of Industrial Chemistry	M. Sc. Industrial Chemistry
5 Department of Life S		Department of Life Sciences	M. Sc. Botany / Microbiology / Zoology/Biotechnology
	6	Department of Marine Sciences	M. Sc. Marine Sciences
	7	Department of Mathematics	M. Sc. Mathematics
	8	Department of Physics	M. Sc. Physics
	9	Department of Statistics	M. Sc. Statistics
	10	Department of Electronics	M. Sc. (E.C.I.)
11		Wild Life Institute/Dehradun	M. Sc. (Wild Life)
	12	Department of Nano Science and Advanced Materials	B.Sc. / M.Sc. (Applied Physics) Integrated

Sc.App.Phy. Int -12

Candidate must forward their application for admission to University examination to the Registrar on or before the prescribed date with a Certificate of attendance duly signed by the Head of the Department along with the examination fees fixed by the University.

R. M. Sc. App.Phy. Int -13

Thirty percent (30%) internal evaluation shall be within the exclusive purview of the concerned Department which requires purity, transparency accuracy in the evaluation & assessment of the students. Benefits of re-assessment/verification scheme will not be made available to the students in this regards.

R. M. Sc. App.Phy. Int -14

In addition to the above Ordinances and Regulations, the provisions made in the detailed syllabus of the concerned Degree programme is also part of the above Ordinances & Regulations and therefore, such provisions, schemes & instructions etc. are also required to be implemented by all concerned. So far there is no inconsistency with the above referred Ordinances & Regulations.



B.Sc. / M.Sc. (Applied Physics)Integrated Semester-I

Sr.	Paper No.	Title	Credits	Det	ails
No				Theory	Lab
1	Paper-I	Foundation course (Communication Skills)	03	03	
2	Paper-II	Fundamentalof Mathematics	09	06	03
3	Paper-III	Applied Physics-I			
	_		09	06	03
4	Paper-IV	Applied Physics-II			
			09	06	03
		Total Credits	30		

B.Sc. / M.Sc. (Applied Physics)Integrated Semester-II

Sr.	Paper No.	Title	Credits	Det	ails
No				Theory	Lab
1	Paper-V	Environmental Studies	03	02	01
2	Paper-VI	Applied Mathematics	09	06	03
3	Paper-VII	Modern Physics-I			
			09	06	03
4	Paper-VIII	Basic Electronics	09	06	03
	•	Total Credits	30		

B.Sc. / M.Sc. (Applied Physics)Integrated Semester-III

Sr.	Paper No.	Title	Credits	Det	ails
No				Theory	Lab
1	Paper-IX	Non-conventional Energy Resources	03	03	
2	Paper-X	Applied Electronics	09	06	03
3	Paper-XI	Basic Nuclear Physics			
			09	06	03
4	Paper-XII	Modern Physics-II			
			09	06	03
		Total Credits	30		

B.Sc. / M.Sc. (Applied Physics)Integrated Semester-IV

Sr.	Paper No.	Title	Credits	Det	ails
No				Theory	Lab
1	Paper-XIII	Modern computational Techniques &	03	02	01
		Programming			
2	Paper-XIV	Applied Nuclear Physics	09	06	03
3	Paper-XV	Fundamentals of Materials Science			
			09	06	03
4	Paper-XVI	Electrodynamics & Plasma Physics			
			09	06	03
		Total Credits	30		

B.Sc. / M.Sc. (Applied Physics)Integrated Semester-V

Sr.	Paper No.	Title	Credits	Det	ails
No				Theory	Lab
1	Paper-XVII	Statistical Physics	09	06	03
2	Paper-XVIII	Advanced Electronics	09	06	03
3	Paper-XIX	Applied Condensed Matter Physics			
			09	06	03
4	Paper-XX	Applied Physics Projects			
			03		03
		Total Credits	30		

B.Sc. / M.Sc. (Applied Physics)Integrated Semester-VI

Sr.	Paper No.	Title	Credits	Det	ails
No				Theory	Lab
1	Paper-XXI	Elements of Nano science and Nano	09	06	03
		Technology			
2	Paper-XXII	Experimental Techniques in Physics	09	06	03
3	Paper-XXIII	Digital communication and			
		Electronics	09	06	03
4	Paper-XIV	Applied Physics Projects			
			03		03
		Total Credits	30		

Total Credits for Semester I-VI shall be 180

B.Sc. / M.Sc. (Applied Physics)Integrated Semester-VII

Sr.	Paper No.	Title	Credits	Details	
No				Theory	Lab
1	Core –1	Mathematical methods in Physics	04	3	1
	Paper -I				
2	Core - 2	Applied Quantum Mechanics	04	3	1
	Paper-II				
3	Core -3	Semiconductor Devices and	04	3	1
	Paper-III	Applications			
4	Core -4	AdvancedMaterials and Applications	04	3	1
	Paper-IV				
5	Practicals	General Practicals of Applied Physics	08		8
		Total Credits	24		

B.Sc. / M.Sc. (Applied Physics)Integrated Semester-VIII

Sr.	Paper No.	Title	Credits	Details	
No				Theory	Lab
1	Core -5	Vacuum TechnologyandThin film	04	3	1
	Paper-V				
2	Core – 6	Nano materials –I: Synthesis and Types	04	3	1
	Paper-VI				
3	Core – 7	Signal Processing and Communication	04	3	1
	Paper-VII				
4	Core – 8	Advanced Experimental Techniques	04	3	1
	Paper - VIII	for Materials Characterization			
5	Practicals General Practicals of Applied Physics		08		08
		Total Credits	24		

B.Sc. / M.Sc. (Applied Physics)Integrated Semester-IX

Sr.	Paper No.	Title	Credits	Details	
No	_			Theory	Lab
1	Core – 9	Nano Materials –II: Properties and	04	3	1
	Paper-IX	Applications			
2	ID - 1	Numerical Techniques for	04	3	1
	Paper-X	computational Analysis			
3	Elective –1	One from Elective Groups A, B, C, D	04	3	1
	Paper-XI				
4	Elective –2	One from Elective Groups A, B, C, D	04	3	1
	Paper-XII				
5	Practicals	Advanced Practicals of Applied Physics	08		08
		& Communication			
		Total Credits	24		

B.Sc. / M.Sc. (Applied Physics)Integrated Semester-X

Sr.	Paper No.	Title	Credits	Det	Details	
No	_			Theory	Lab	
1	Core – 10	Nano structuring with Ion beams	04	3	1	
	Paper-XIII					
2	ID – 2	Nano Technology and Environment	04	3	1	
	Paper-XIV					
3	Elective –3	One from Elective Groups A, B, C, D	04	3	1	
	Paper-XV					
4	Elective –4	One from Elective Groups A, B, C, D	04	3	1	
	Paper-XVI					
5	Project	Experimental or Theoretical Projects	08		08	
	Work	related to Advanced Materials and				
		Nano Materials				
		Total Credits	24			

Commencing from Academic Year 2016-17

Elective Groups:

Group A

- 1. Functional Nano materials and Devices
- 2. Nano ceramics and Applications
- 3. Nano Biomaterials and Applications
- 4. Nanocomposites & Applications

Group B

- 5. Digital Electronics and Microprocessors
- 6. Digital Signal Processing (DSP)
- 7. Wireless Communication and Computer Network
- 8. Fiber optic Communication

Group C

- 9. Physics of Accelerators
- 10. Material Modifications with Low Energy Ion Beams (LEIB)
- 11. Swift Heavy Ions (SHI) for Material Modifications
- 12. Nano structuring with Ion beams

Group D

- 13. Electron optics and its applications
- 14. Analytical techniques and applications
- 15. Applied Instrumentation
- 16. Industrial Instrumentation Techniques

Regulations:

- 1. In order to help the students to evaluate and improve continuously, the internal examinations would be arranged and conducted throughout the semester by the Department. The Comprehensive Continuous Assessment (internal evaluation) may have components like internal tests, assignments, seminars, presentations, projects, industrial and institutional visits and other innovative methods of examination, and any combinations of these.
- 2. There shall be an educational tour comprising of visit to Industry/National Institute/ National laboratories etc. at the end of semester V and Semester IX. The department will arrange the educational tour at the risk and cost of the students excluding contributory share of the University as per provision made in PG rules of the University.

Question paper style for Semesters I-VI

B.Sc. / M.Sc. (Applied Physics) Integrated Programme

Mai	rks
70 External	30 Internal

Sr. No.		Marks per Question	Nos.	Marks	
1	As per recommendation of the science faculty meeting 27/2/2016				
			Total		100 Marks

Question paper style for Semesters VII-X

B.Sc. / M.Sc (Applied Physics) Integrated Programme

Mar	rks
70 External	30 Internal

Sr. No.		Marks per Question	Nos.	Marks	
1.	Short	02	07	14	
	Questions(Compulsory)				
2.	Unit –I & II	07	01	14	
		07	01		
3.	Unit –II & III	04	01	14	
		03	01		
		07	01		
4.	Unit –III & IV	07		14	
		07			
5.	Unit –IV & V	07		14	
		07			
	·			70	30
			Total		100 Marks