



ROYAL GLOBAL UNIVERSITY
— GUWAHATI —

ROYAL SCHOOL OF APPLIED AND PURE SCIENCES

DEPARTMENT OF PHYSICS

COURSE STRUCTURE AND SYLLABUS

OF

M.Sc. PHYSICS

(4 SEMESTER COURSE)

Course Structure and Syllabus

For

**Post Graduate
(4 semesters) courses**

PHYSICS

Under

Choice Based Credit System

2018

COURSE STRUCTURE FOR M.Sc. (PHYSICS)

SEMESTERS	CORE COURSE (13)	credit	Ability Enhancement Compulsory Course (AECC) (6)	credit	Ability Enhancement Elective Course (AEEC) (2) (Skill Based)	credit	Elective: Discipline Specific DSE (7)	credit	Project/ dissertation	credits	No of papers each semester
I	Classical Mechanics	4	Communicative English – I	1		2	DSE-1	4			7
	Quantum Mechanics-I	4									
	Mathematical Physics-I	4	Behavioural Science-I	1							
	Physics Lab-I	4									
II	Condensed Matter Physics	4	Communicative English – II	1	AEEC/SEC /-1*	2	DSE-2	4			8
	Electrodynamics	4									
	Statistical Mechanics	4	Behavioural Science-II	1							
	Physics Lab-II	4									
III	Atomic and Molecular Physics	4	Comm. English-III	1	AEEC/SEC /-2*	2	DSE-3	4			8
	Quantum Mechanics-II	4					DSE-4	4			
							DSE-5 (Seminar/ literature survey)	4			
	Physics Lab-III	4									
IV	Laser and Raman Spectroscopy	4	Comm. English-IV	1			DSE-6	4	Project / Dissertation / seminar	6	6
	Semiconductor Devices	4					DSE-7	4			
Total	No. of papers 13	52	No. of papers 6	6	No. of papers -2	4	No. of papers -7	28	1	6	29

NOTE: TOTAL CREDIT = 22+24+27+23= 96

I. Ability Enhancement Elective Course (AEEC) (Skill Based):

	AEEC/SEC-1 (in second semester) (Choose any one)	AEEC/SEC-2(in third semester) (Choose any one)
1	ILD-1	ILD-2
2	FRENCH-1	FRENCH-2
3	C++	LATEX
4	SCILAB	
5	MATLAB	Any other course offered by other schools of RGU and opted by Student
6	Any other courses offered by other schools of RGU and opted by Student	

II. Elective: Discipline Specific DSE

	FIRST SEMESTER (Choose any one)	SECOND SEMESTER (Choose any one)	THIRD SEMESTER (DSE 5 is compulsory and choose any two, each from DSE 3 and DSE 4)	FOURTH SEMESTER (choose any two, each from DSE 6 and DSE 7)
1	DSE-1 1. Nuclear and Particle Physics 2. Theory of Relativity	DSE-2 1. Optoelectronics and Nonlinear Optics 2. Plasma and Space Physics	DSE 3 1. Non-Linear Optics and Laser Spectroscopy-I 2. Physics of Nanomaterials-I 3. Advanced Quantum Mechanics-I	DSE 6 1. Non-Linear Optics and Laser Spectroscopy-II 2. Physics of Nanomaterials-II 3. Advanced Quantum Mechanics-II
2			DSE 4 1. Astrophysics-I 2. Physics of Semiconductors-I 3. Condensed Matter Physics-I 4. High Energy Physics-I	DSE 7 1. Astrophysics-II 2. Physics of Semiconductors-II 3. Condensed Matter Physics-II 4. High Energy Physics-II
3			DSE 5-Seminar/Literature survey	

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Course Structure and Syllabus of MSc. PHYSICS

4 Semester Course

Semester	Subject code	Subject Name	Credit	Page No.
I	PHY014C101	Classical Mechanics	4	1-2
	PHY014C102	Quantum Mechanics - I	4	3-4
	PHY014C103	Mathematical Physics	4	5-6
	PHY014C114	Physics Lab - I	4	7
	PHY014D101	Nuclear and Particle Physics	4	8
	PHY014D102	Theory of Relativity	4	9
II	PHY014C201	Condensed Matter Physics	4	10-12
	PHY014C202	Electrodynamics	4	13-14
	PHY014C203	Statistical Mechanics	4	15
	PHY014C214	Physics Lab - II	4	16
	PHY014D201	Optoelectronics and Nonlinear Optics	4	17
	PHY014D202	Plasma and Space Physics	4	18-19
III	PHY014C301	Atomic and Molecular Physics	4	20-21
	PHY014C302	Quantum Mechanics - II	4	22
	PHY014C313	Physics Lab - III	4	23
	PHY014D301	Non - Linear Optics and Laser Spectroscopy - I	4	24
	PHY014D302	Physics of Nanomaterials - I	4	25
	PHY014D303	Advanced Quantum Mechanics - I	4	26
	PHY014D304	Astrophysics - I	4	27
	PHY014D305	Physics of Semiconductors - I	4	28-29
	PHY014D306	Condensed Matter Physics - I	4	30
	PHY014D307	High Energy Physics - I	4	31-32
	PHY014D331	Seminar/ Literature survey	4	33
IV	PHY014C401	Laser and Raman Spectroscopy	4	34-36
	PHY014C402	Semiconductor Devices	4	37
	PHY014D401	Non - Linear Optics and Laser Spectroscopy - II	4	38
	PHY014D402	Physics of Nanomaterials - II	4	39
	PHY014D403	Advanced Quantum Mechanics - II	4	40
	PHY014D404	Astrophysics - II	4	41
	PHY014D405	Physics of Semiconductors - II	4	42-43
	PHY014D406	Condensed Matter Physics - II	4	44
	PHY014D407	High Energy Physics - II	4	45-46
PHY014D431	Project / Dissertation/ Seminar	4	47	