

**Central University of Rajasthan**  
**School of Physical Science**  
**Department of Physics**

**Integrated M.Sc. Physics (5 Years)**  
**Course Structure**

Semester	Course Code	Course Title	Subject	Credits	
I	PHY 101	Mechanics	Physics	4	
	MAT 111	Calculus-I	Maths	4	
	MAT 112	Mathematics-I			
	EN 101	Language and Communication Skills-I	English	2	
		<b>2 courses to opt from the list given below</b>			
	ICHT 101	Inorganic Chemistry-I (3)	Chemistry	4	
	ICHP 101	Inorganic Chemistry Laboratory - I (1)			
	CSC 101	Computer Fundamentals & Programming in C (3)	Computer Science	4	
	CSC 102	C Programming Lab (1)			
	IME 101	Principles of Microeconomics	Economics	4	
STA 101	Descriptive Statistics (3)	Statistics	4		
STA 102	Practicals (1)				
BIO 101	Biology-I (T) Diversity of Life (3)	Biology	4		
BIO 102	Biology Practical –I (1)				
			<b>Total Credits</b>	<b>18</b>	
II	PHY 102	Basic Electronics (2)	Physics	4	
	PHY103	Physics Lab I (2)			
	IMM 121	Calculus-II	Maths	4	
	EN 102/	Language and Communication Skills-II /	English/	2	
	CSC 105	Information Communication Technology (ICT)	Computer Science		
		<b>2 courses to opt from the list given below</b>			
	ICHT 201	Organic Chemistry-I (3)	Chemistry	4	
	ICHP 201	Organic Chemistry Laboratory - I (1)			
	CSC 103	Object Oriented Programming in C++ (3)	Computer Science	4	
	CSC 104	C++ Programming Lab (1)			
IME 201	Principles of Macroeconomics	Economics	4		
STA 103	Probability and Random Variables (3)	Statistics	4		
STA 104	Practicals (1)				
BI 103	Biology-II (T) Techniques for Biology	Biology	4		
			<b>Total Credits</b>	<b>18</b>	
III	PHY 201	Modern Physics	Physics	4	
	EVS 201	Environmental Studies	Environmental Sci.	3	
	PA-301	Introduction to Public Administration	Social Science	3	
		<b>2 courses to opt from the list given below</b>			
	ICHT 301	Physical Chemistry-I (3)	Chemistry	4	
	ICHP 301	Physical Chemistry Laboratory - I (1)			
	CSC 201	Data Structures (3)	Computer Science	4	
	CSC 202	Data Structures Lab (1)			
	IME 301	Fundamentals of Finance	Economics	4	
	STA 201	Probability Distributions (3)	Statistics	4	
STA 202	Practicals (1)				
BI 201	Biology-III (T) Biochemical Constituents of Life	Biology	4		
IMM 231	Differential Equation	Maths	4		

			<b>Total Credits</b>	<b>18</b>
IV	PHY 202 PHY 203	Properties of Matter and Waves (2) Physics Lab II (2)	Physics	4
		<b>2 courses to opt from the list given below</b>		
	ICHT 401 ICHP 401	Analytical Chemistry-I (3) Analytical Chemistry Laboratory - I (1)	Chemistry	4
	CSC 203 CSC 204	Database Management System (3) Database Management Lab (1)	Computer Science	4
	IME 401	Issues in Indian Economy	Economics	4
	STA 203 STA 204	Statistical Inference-I (3) Practicals (2)	Statistics	4
	BIO 202 BIO 203	Biology-IV (T) Structural Organization of Life 3 Biology Practical-II (1)	Biology	4
	IMM 341	Discrete Mathematics	Maths	4
		Open elective	Science	3
	IH 201	Open elective	Social Science	3
		<b>Total Credits</b>	<b>18</b>	
V	PHY 301	Electricity and Magnetism	Physics	4
	PHY 302	Optics	Physics	4
	PHY 303	Mathematical Physics	Physics	4
	PHY 304	Physics Lab III	Physics	4
	PHY 30X	Open Elective	Physics	4
		<b>Total Credits</b>	<b>20</b>	
VI	PHY 305	Advanced Modern Physics	Physics	4
	PHY 306	Heat and Thermodynamics	Physics	4
	PHY 307	Physics Lab V	Physics	4
	PHY 30Y	Open Elective	Physics	4
	PHY 30Z	Open Elective	Physics	4
		<b>Total Credits</b>	<b>20</b>	
VII	PHY 401	Mathematical Methods in Physics	Physics	4
	PHY 402	Classical Mechanics	Physics	4
	PHY 403	Quantum Mechanics	Physics	4
	PHY 404	General Physics Lab	Physics	4
		<b>Total Credits</b>	<b>16</b>	
VIII	PHY 405	Classical Electrodynamics	Physics	4
	PHY 406	Statistical Mechanics	Physics	4
	PHY 407	Quantum Mechanics	Physics	4
	PHY 408	Electronics	Physics	4
	PHY 409	Electronics Lab	Physics	4
	PHY 410	Computational Physics	Physics	4
		<b>Total Credits</b>	<b>24</b>	
IX	PHY 501	Condensed Matter Physics	Physics	4
	PHY 502	Atomic and Molecular Physics	Physics	4
	PHY 503	Nuclear and Particle Physics	Physics	4
	PHY 504	Advanced Physics lab	Physics	4
	PHY 60X	Open Elective	Physics	3
	PHY 60Y	Open Elective	Physics	3
		<b>Total Credits</b>	<b>20</b>	
X	PHY 505	Project	Physics	12
	PHY 60Z	Open Elective	Physics	4
		<b>Total Credits</b>	<b>16</b>	