

B. Sc. -B.Ed. in Physics Semester-Wise Curriculum

Credit Structure: Total Minimum Credits - 160, 96 credits for HSS + 64 credits for Sciences

Interdisciplinary/Disciplinary Streams: The student has to decide whether to go for disciplinary or interdisciplinary program before the beginning of the 5th semester.

Breakup of credits for Disciplinary and Interdisciplinary programs:

Disciplinary: Min 64 credits : 52 Core Physics Credits + 7 credits (Introductory Chemistry + Calculus) + 12 Physics Elective credits = 64 (Physics) + 7 (others) = 71 credits

Note: These students have to do one course additional to Calculus from the Math department if they wish to qualify the JAM eligibility criteria for MSc programs in IITs.

Interdisciplinary in Chemistry: Min 64 credits: 52 Core Physics Credits + 4 credits (Calculus) + 3 credits (Introductory Chemistry) + 15 Chemistry Elective credits = 52 (Physics)+ 18 (Chemistry) + 4 (other) = 74 credits

Interdisciplinary in Math: Min 64 credits: 52 Core Physics Credits + 4 credits (Calculus) + 3 credits (Introductory Chemistry) + 12 Math Elective credits = 52 (Physics)+ 16 (Math) + 3 (other) = 71 credits

Semester 1 HSS /B.Ed. 12 credits Science 8 credits					
Sr. no.	Subject name	Subject Code	LTP	Credit	
1	Language 1: English	HB101	4-0-0-8	4	
2	Understanding India (Indian Ethos and Knowledge Systems)	HB102	2-0-0-4	2	
3	Evolution of Indian Education	HB103	4-0-0-8	4	
4	Art Education (Performing and Visual) 1	HB104	2-0-0-4	2	
5	Introductory Physics	PB101	4-1-0-5-3	3	
6	Calculus	MB101	4-0-0-8	4	
7	Introductory Chemistry	CB101	3-1-0-5-3	3	
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Semester 2 HSS /B.Ed. 8 credits Science 12 credits (Chemistry 12, Physics 12, Maths 12)					
Sr. no.	Subject name	Subject Code	LTP	Credit	
1	Language 2 (as per the 8th schedule of the Constitution of India). Sanskrit	HB105	4-0-0-8	4	
2	Understanding India (Indian Ethos and Knowledge Systems)	HB106	2-0-0-4	2	
3	Teacher and Society	HB107	2-0-0-4	2	
4	Classical Mechanics	PB105	3-1-0-5-3	3	
5	Mathematical Physics I	PB106	3-1-0-5-3	3	
6	General Properties of Matter	PB107	3-1-0-5-3	3	
5	Digital and Analog Electronics	PB108	3-1-0-5-3	3	
				20	

Semester 3 HSS /B.Ed. 8 credits Science 12 credits (Chemistry 12, Physics 12, Maths 12)					
Sr. no.	Subject name	Subject Code	LTP	Credit	
1	Child Development & Education Psychology	HB201	4-0-0-8	4	
2	Basics of Pedagogy	HB202	4-0-0-8	4	
3	Electricity and Magnetism	PB201	3-1-0-5-3	3	
4	Waves and Optics	PB202	3-1-0-5-3	3	
5	Mathematical Physics II	PB203	3-1-0-5-3	3	
6.	Physics Lab I	PB204	1-0-4-3-3	3	
				20	

Semester 4 HSS /B.Ed. 8 credits Science 12 credits (Chemistry 12, Physics 12, Maths 12)					
Sr. no.	Subject name	Subject Code	LTP	Credit	
1	Philosophical and Sociological perspectives of education-1	HB203	4-0-0-8	4	
2	Pedagogy in Mathematics	MB200	4-0-0-8	4	
3	Thermal and Statistical Physics	PB205	3-1-0-5-3	3	
4	Computational Physics with Lab	PB206	2-0-4-6-4	4	
5	Quantum Physics	PB207	3-1-0-5-3	3	
6.	Physics Lab II	PH208	1-0-4-2-3	3	
				21	

Semester 5 HSS /B.Ed. 8 credits Science 12 credits (Chemistry 12, Physics 12, Maths 12)					
Sr. no.	Subject name	Subject Code	LTP	Credit	
1	Pedagogy in Physics	PB***	4-0-0-8	4	
2	ICT in education	HB302	2-0-0-4	2	
3	Pre-internship practice (demonstrations lessons, peer teaching)	HB303	2-0-0-2	2	
4	Solid State Physics	PB301	3-1-0-5-3	3	
5	Physics Lab - III	PB306	1-0-4-2-3	3	
6.	Disc. Elective/Interdisc. Elective		3-0-0-5-3	3/4	
7.	Disc. Elective/Interdisc. Elective		3-0-0-5-3	3/4	
8.	Chemistry Elective (for students opting Interdisciplinary in Chemistry)		3-0-0-5-3	3	
				20-22 (23 for interdisciplinary in Chemistry)	

Semester 6 HSS /B.Ed. 12 credits Science 8 credits (Chemistry 8, Physics 8, Maths 8 +2)					
Sr. no.	Subject name	Subject Code	LTP	Credit	
1	Pedagogy in Chemistry	CB***	4-0-0-8	4	
2	Assessment and Evaluation	HB305	2-0-0-4	2	
3	Inclusive education	HB306	2-0-0-2	2	
4	Mathematical and Quantitative reasoning		2-0-0-4	2	
5	School Observation (Field practice)	HB308	3-0-0-6	2	
6	Disc. Elective/Interdisc. Elective		3-0-0-5-3	3	
7	Disc. Elective/Interdisc. Elective		3-0-0-5-3	3	
8	Project	PB307	0-0-12-6-6	6	
				24	

Semester 7 HSS /B.Ed. 20 credits Science -NA					
Sr. no.	Subject name	Subject Code	LTP	Credit	
1	Perspective on school leadership and management	HB401	2-0-0-4	2	
2	Curriculum planning and development	HB402	2-0-0-4	2	
3	Art Education (Performing and Visual) 2	HB403	2-0-0-4	2	
4	Sports, Nutrition and Fitness		2-0-0-4	2	
5	School Based research project	HB404	2-0-0-6	2	
6	Internship in Teaching	HB406		10	
				20	

Semester 8					
Sr. no.	Subject name	Subject Code	LTP	Credit	
1	Philosophical and Sociological perspectives of education-2	HB407	4-0-0-8	4	
2	Education Policy Analysis	HB408	2-0-0-4	2	
3	Elective	HB409	4-0-0-8	4	
4	Yoga and understanding self	HB410	2-0-0-4	2	
5	Citizenship Education, Sustainability and Environment Education	HB411	2-0-0-6	2	
6	Post Internship (Review and analysis)	HB412	2-0-0-4	2	
7	Creating Teaching Learning Material/ work experience (Education Toy Making, local/ traditional vocations. Etc.)	HB413	2-0-0-4	2	
8	Community Engagement and Service (Participation in NSS-related activities, New India Literacy Programme etc.0	HB414		2	
				20	