

REGIONAL INSTITUTE OF EDUCATION, AJMER

A Constituent Unit of NCERT, New Delhi

NAAC Graded A+ Institute

(An Autonomous Organisation under Ministry of Education, Government of India)



Department of Education in Science and Mathematics (DESM)

The Department of Education in Science and Mathematics (DESM) comprises of Physics, Chemistry, Mathematics, Botany and Zoology sections. All the sections have well equipped laboratories to enable students to conduct experiments and develop teaching aids. The academic faculties of DESM are distinguished by their extensive knowledge, with most possessing doctorate degrees from renowned institutions known for pioneering research in Science. These faculties not only engage in cutting-edge research in their respective fields of Science but have also established a strong foundation in innovative Science Education practices. All sections boast state-of-the-art laboratories equipped with modern tools and facilities, facilitating effective practical learning in the B.Sc.B.Ed. Courses. The department also has Innovation Hub, Mathematics Laboratory, electronics and Electrical laboratory, wood workshop, Zoology Museum, Botanical Garden and Theme Park for exposure and experiential learning of students. The departments of Botany and Zoology are home to well-maintained museums featuring rare and unique specimens, an animal house, and a greenhouse. An essential responsibility of DESM is to fulfil the pre-service teaching requirements of the B.Sc.B.Ed. courses. Students receive comprehensive training in their subject areas as well as in the

methodologies of teaching Science at the secondary school level. DESM is consistently committed to enhancing the quality of Science Education in schools. The department collaborates on the development and design of cost-effective teaching aids for use in classrooms, boasting an extensive collection of aids created by both students and teachers.

Periodically, the department organizes training sessions for in-service teachers at both the secondary and higher secondary levels. These training sessions are open to educators from various esteemed educational institutions, which include Kendriya Vidyalayas, Navodaya Vidyalayas, and Jawahar Navodaya Vidyalayas. Faculty members frequently serve as resource persons in numerous enrichment and pedagogic programs organized by national and international agencies.

ACADEMIC PROGRAMMES OFFERED

B.Sc. B.Ed. (Four Year Integrated Programme)

The Programme has two groups:-

- (i) Physical Science Group (Physics, Chemistry and Mathematics)
- (ii) Biological Science Group (Botany, Zoology & Chemistry)

The salient features and eligibility for admission in the programme are as under-

- The B.Sc. B.Ed. Programme is a Professional Programme and it aims at producing competent teachers of science and mathematics teaching at secondary level. This is an innovative teacher education programme. It provides training in methodology along with instructions in various content areas.
- The four-year integrated programme has been designed in view of the latest researches and experiments in the field of education. Besides having latest knowledge in content area the teacher trainees become well versed in pedagogy and communication skills which are integrated throughout the duration of the Programme.
- The B.Sc. B.Ed. Programme (4yr) has been one the most prestigious programmes offered by the constituent Institutes (RIEs) of NCERT, New Delhi. Our candidates were selected for regular job of teachers on the basis of campus interviews by Kendriya VidyalayaSangathan, Delhi Public School and other reputed schools of the country.

- This programme of the Institute has been selected for pilot study of Integrated Teacher Education Programme (ITEP) by NCTE as per recommendations of NEP2020 and admission in the programme will be likely through All India Exam conducted by NTA.

Eligibility for B.Sc. B.Ed.

- Candidates seeking admission to Physical Science Group must have passed with Physics, Chemistry, and Mathematics (PCM) (M stands for Mathematics or Statistics) and those seeking admission to Biological Science Group (CBZ) must have passed Physics, Chemistry, and Biology (PCB) (B stands for Biology or Biotechnology) at +2 level.
- Candidates must have passed +2 / Hr. Sec./ Sr. Sec. or any equivalent examination recognized by University/ Board with at least 50% marks in aggregate of qualifying examination (relaxation of 5% marks for SC/ ST/ PwD candidates). The qualifying examination should be recognized by the affiliating universities of the RIEs.4-Year Integrated Teacher Education Programme (ITEP) Secondary Stage

Proposed Academic Programme *w.e.f.* session 2023-24

FOUR-YEAR INTEGRATED TEACHER EDUCATION PROGRAMME (ITEP)

The National Education Policy 2020 highlights. "Teacher education is vital in creating a pool of schoolteachers that will shape the next generation. Teacher preparation is an activity that requires multidisciplinary perspectives and knowledge, formation of dispositions and values, and development of practice under the best mentors. Teachers must be grounded in Indian values, languages, knowledge, ethos, and traditions including tribal traditions, while also being well-versed in the latest advances in education and pedagogy.

Four-Year Integrated Teacher Education Programme (ITEP): "Recognizing that the teachers will require training in high-quality content as well as pedagogy, teacher education will gradually be moved by 2030 into multidisciplinary colleges and universities INEP 2020, para 5.22) "The 4-year integrated B.Ed. offered by such multidisciplinary HEIs will, by 2030, become the minimal degree qualification for schoolteachers. The 4-year integrated B.Ed. will be a dual-major holistic bachelor's degree in Education as well as a specialized subject such as a language, history, music mathematics, computer science, chemistry, economics, art, physical education, etc. Beyond the teaching of

cutting-edge pedagogy, the teacher education will include grounding in sociology, history. Science, psychology, early childhood care and education, foundational literacy and numeracy. Knowledge of India and its values/ethos/art/traditions, and more.

ITEP with Secondary Stage Specialization which would enable student-teachers to teach children in Grades 9 to 12 (age group 14-18 years). Secondary stage involves four years of multidisciplinary study, but with greater depth, greater critical thinking, greater attention to life aspirations, and greater flexibility and student choice of subjects across the curricular areas of sciences, mathematics, arts, social sciences, and humanities, and vocational education and training. Students would have the option of exiting after Grade 10 and re-entering in the next phase to pursue vocational or any other courses available in Grades 11-12.

Several members of DESM have contributed to the preparation of textbooks, supplementary materials, teacher's manuals, and other educational resources for NCERT. Many of these publications are currently used throughout the country, benefiting countless students and educators alike. Apart from regular working laboratories, the department is equipped with the following additional facilities.

Environmental Education Theme Park

The National Education Policy 2020 emphasizes on environmental sustainability and suggests various concerted curricular and pedagogical aspects to develop the desired environmental sustainability skills among students at all levels of education. Considering the various aspects of Environmental Education a Theme Park was established in the year 2005 spread over an area of 8.50 acres. It acts as 'living laboratory' for developing ecological sensibility. It acts as a common forum where students and teachers interact and discuss current environmental issues, concerns and challenges. It focuses on sensitizing students and teachers through different activities like PrakritiMela, Webinars, Seminars, and Workshop etc.



Innovation Hub

In an evolving society, there are new challenges which require innovative ways to think, explore and solve the problems. The Institute has an Innovation hub which helps in imparting experiential learning, quality education, and develops a creative environment to encourage and motivate the learners to experience the scientific principles in a novel way. The innovation hub boasts of 25 interesting demonstrations, activities and experiments, such as, An-harmonic Oscillator, Coupled Oscillator, Angular Momentum Conservation, Demonstration of Bohr Orbits, Doppler Effect, Equilibrium with Magnets etc. These facilities help in enhancing creativity and skills of students.



Mathematics Laboratory

The resource room is mainly a mathematics laboratory that has been reorganized and equipped to allow for individualized learning or group learning, and which relates learning to past experiences and provides new experiences when needed. This laboratory provides interesting problems for the students to investigate and allows the student to take responsibility for his own learning and to progress at his own interest.



The detail of the faculty members in Department of Education in Science and Mathematics is available on <https://riaajmer.raj.nic.in/>