

Shri Lal Bahadur Shastri Degree College, Gonda

(Affiliated to Dr Ram Manohar Lohia Avadh University, Ayodhya, U.P.)



“Field trips are an opportunity for you to enter into the world of mystical power”.



A Report

On

Educational Field Visit

Session 2023-24

Submitted

By

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Introduction:

“Crucial to science education is hands-on involvement: showing, not just telling; real experiments and field trips and not just “virtual reality.”

Educational field trips provide students with a chance to learn about a particular place or subject in a more collaborating and immersive way. For instance, visiting an educational institute, workshops, historical site or a museum helps students explore their knowledge and better understand the history, nature, heritage and culture of a place. Educational field trip reports improve the educational value of a trip. The educational trips deal with the spatial relations among data and the time relationships. Educational field visit, improving student's relationships with teachers has important, positive and long-lasting implications for both students' academic and social development.

Objective:

"Field trips provide authentic, hands-on, experiential learning opportunities where student can connect what they are learning in classroom, in a real-world context."

Purpose of educational visit is to evaluate each student's academic progress, health and personality development through interactive sessions with the students, teachers and programmed educational sites.

Summary:

"Travel is still the most intense mode of learning"

As per the syllabus of M.Sc. (Physics) I year, II Semester & M.Sc. (Physics) III year, and IV Semester, Our department planned to visit **Raja Rammana Centre for Advance Technology (RRCAT), Indore, Madhya Pradesh, India. Shri Mahakaleshwar Joyotirlinga, Ujjain, Madhya Pradesh & Shri Omkareshwar Joyotirlinga, Khandwa, Madhya Pradesh**

Raja Rammana Centre for Advance Technology (RRCAT) is a unit of Department of Atomic Energy, Government of India, engaged in R & D in non-nuclear front line research areas of Lasers, Particle Accelerators & related technologies. RRCAT's motto is **"Photons in the Service of Nation"** and true to its motto, RRCAT has always inspired the students and young researchers to learn about sources, behaviors and applications of photons (light particles).

Madhya Pradesh has two *Jyotirlingas*, the first one, *Mahakaleshwar Jyotirlinga*, is situated about 140 km north of *Omkareshwar Jyotirlinga*. There are two main temples of Shiva here, one to *Omkareshwar* (whose name means "Lord of *Om*kara or the Lord of the *Om* sound") located in the island and one to *Mamleshwar* (Amaleshwar) (whose name means "Immortal Lord" or "lord of the Immortals or Devas") located on the southern bank of the *Narmada* River on the mainland. *Shri Mahakaleshwar Joyotirlinga* is a Hindu temple dedicated to Shiva and is one of the twelve *Jyotirlingas*, shrines which are said to be the most sacred abodes of *Shiva*. *Shri Omkareshwar Joyotirlinga* is a Hindu temple dedicated to Shiva, located in Mandhata, nearby Khandwa city in Khandwa district of the Indian state of Madhya Pradesh. It is one of the 12 revered *Jyotirlinga* shrines of Shiva. It is on an island called Mandhata, near Khandwa city in

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the Narmada River at Khandwa district in Madhya Pradesh, India; **the shape of the island is said to be like the Devanagari ॐ symbol.**

All the Students of M.Sc. (Physics) I year, II Semester & M.Sc. (Physics) II year, IV Semester along with Faculty and supporting staff are starting their journey at 04:00 PM on date 22 May 2024 (Wednesday) from our campus gate (Photo 1).



Photo 1. Students of M.Sc. (Physics) I year, II semester & II year IV Semester with their Faculty and staff at Science campus gate on dated 22/05/2024.

We reached at Ujjain on dated 23 May 2024 (Thursday) at 04:05PM. After taking rest and freshen up, we were ready to take blessings from **Ujjain ke Maharaja Shree Mahakaleshwar.**



Photo-2: All Faculty members at Hotel

Photo-3: All the students with faculty members at the entrance of MAHAKAL LOK

On the next day we leave Ujjain at 06:15 AM for RRCAT, Indore. On dated 23 May 2024 at 09:25 AM reached at **Raja Rammana Centre for Advance Technology (RRCAT)** and acquired experimental knowledge of LASER cutting, Gun Powder Method, Drilling etc. Students of M. Sc (Physics) First time saw different types of LASER, Accelerators which they study in there courses.

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Photo-4: Our Faculty members with Scientists Dr. Himanshu Srivastava at the Guest House of RRCAT, Indore, M.P.

Photo-5: All the students with faculty members and respected scientists Dr. D.N. Upadhyay, Dr. Himanshu Srivastava & Dr. Shukla at RRCAT Guest House.

At RRCAT Research Centre students learn about two synchrotron radiation sources called "Indus": Indus-1 is a 450 MeV electron storage ring, whereas Indus-2 is a booster cum storage ring that can accelerate electrons from injection energy of 550 MeV to 2.5 GeV which is developed by the RRCAT. At the centre students see some electronic devices like - lasers, power electronics, RF, vacuum, magnets, cryogenics, superconducting cavities, synchrotron beam lines, computer systems and IT, etc which they are study in their course. The Scientists of RRCAT gave us some informative and useful knowledge of their some latest innovation at RRCAT. They are-

- NeelBhasmi - UV based area sanitization device to inactivate viruses.
- OncoDiagnoScope – A stand-alone, field-usable optical spectroscopy based point-of-care device for instant non-invasive diagnosis of oral cavity cancer.
- TuBerculoScope – A low cost, and compact fluorescence imaging device for rapid detection of tuberculosis.
- Raman Probe – A hand-held opto-mechanical module for in-situ measurement of artefact-free Raman spectra from low Raman active materials like biological tissues.

We will also see the Laser Additive Manufacturing systems, i.e., **Directed Energy Deposition (LAM-DED) and a Powder Bed Fusion (LAM-PBF) system with a mission** is to conduct cutting edge Additive Manufacturing research and development involving different materials. The developed systems are being extensively used for R&D and also to cater various in-house requirements. The device LAM-DED as show in Photo (6).

The students also learn about the latest innovation by RRCAT is **Liquid Nitrogen Based Transportable Refrigeration System- Sheetal Vahak Yantra (SHIVAY)** intended for transportation of fruits vegetables & Pharmaceuticals products caters up-to requirement of minus 40 °C temperatures. This transportation can be carried out in a specially developed refrigerated container that can be mounted on any truck or can be built on the chassis of any vehicle. **It is refrigerated by using liquid nitrogen.** This technology has been tailor made for Indian conditions and is aimed at solving issues like high maintenance due to rough roads, which are faced by conventional refrigerated trucks (reefers)

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operators. The system does not use diesel for refrigeration, is 100% eco-friendly as it generates no pollutant gases or sound and is economical to use. The Sheetal Vahak Yantra (SHIVAY) as shown in photo (7).



Photo-6:Directed Energy Deposition (LAM-DED) and Powder Bed Fusion (LAM-PBF) systems.

Photo-7:Liquid Nitrogen Based Transportable Refrigeration System- Sheetal Vahak Yantra (SHIVAY)

After visit RRCAT, We will go to the hotel and take rest.

On the next day (25 May 2024) we will leave for Khandwa, Madhya Pradesh at 06:30 AM. We reached Shree Omkareshwar Jyotirlinga at 11:25 AM. Here all of us will take blessings from Lord Shiva.



Photo-8&9: Entrance gate of Shri Omkareshwar Jyotirlinga and Head of Department Prof. Jitendra Singh with students.

Conclusion:

All the Students are inspired by this educational tour. They submitted their achieved knowledge and experiences during tour and visits (viz. RRCAT, Shri Mahakaleshwar, Shri Omkareshwar) in the form of tour reports.

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We also thank to our transport manager for providing experienced driver & staff.

Thanks



(Prof. Jitendra Singh)
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