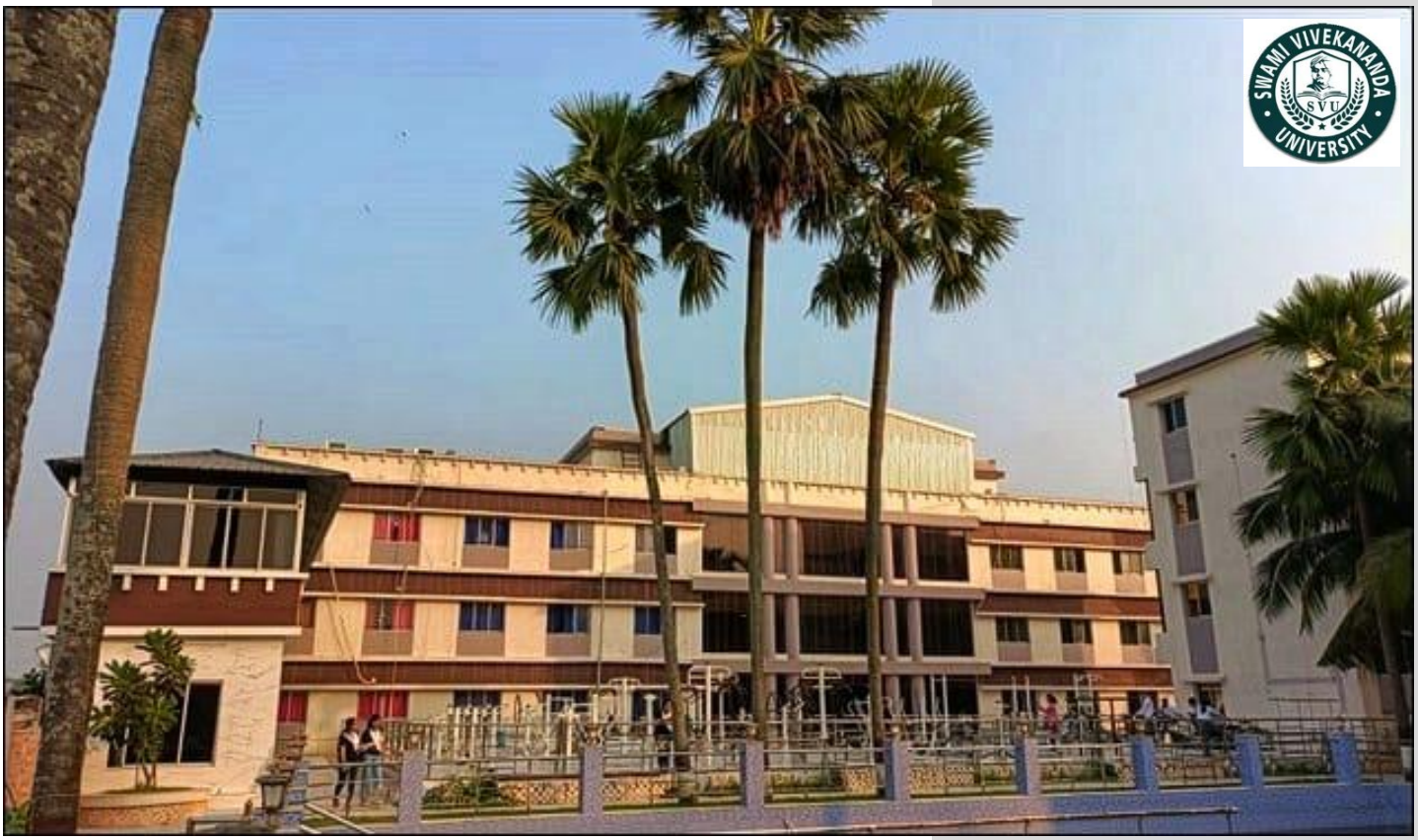
NEWSLETTER

Swami Vivekananda University, Barrackpore

JANUARY / 2026



DEPARTMENT OF MECHANICAL ENGINEERING

"NO TECH WITHOUT MECH"

The department of Mechanical Engineering, Swami Vivekananda University offers state of the art education, well equipped classroom, high end laboratories and cutting-edge research facilities for the students to create, enable, apply and spread knowledge in the advanced field of Mechanical Engineering. In addition to curriculum courses, the department contributes to value added courses, guest lecture by industry experts, industrial visits and various add on activities for the students to make them future ready technocrats of academia & industry. We are committed to work in emerging areas and to develop sustainable technologies & innovations pertaining to mechanical engineering and its allied sectors.

WHAT'S NEW

- Celebration of Swami Vivekananda Jayanti and National Youth Day
- Achievement in On-Campus Placement Drive
- Active participation at ICISE–2026
- Research Achievement in International Journal

EDITORIAL

In pursuit of Swami Vivekananda University's vision of excellence, innovation, and entrepreneurship, the Department of Mechanical Engineering is committed to contribute the best possible and feels immense pleasure to share this newsletter with all of you. The department has a vision to emerge as an excellent center of skill-based learning in Mechanical Engineering to develop professionals who are technically competent, ethical and capable of addressing the changing societal needs with credibility. The department has focused to continued enhancement of its facility to cater the overall anticipation of industry and academia. We are thrilled to announce several exciting developments at our department. Department of Mechanical Engineering of Swami Vivekananda University continues to shine with recent accomplishments. This month, the Department of Mechanical Engineering at Swami Vivekananda University proudly celebrated Swami Vivekananda Jayanti and National Youth Day, inspiring students to embrace the values of leadership, service, and innovation. The department also marked a significant milestone with a notable achievement in the on-campus placement drive with Quality Austria Central Asia, reflecting strong industry readiness and employability among students. Demonstrating academic engagement on a international platform, faculty and students showed active participation at ICISE–2026, contributing to meaningful technical discussions and knowledge exchange. Additionally, the department achieved a major academic milestone through a research publication in an international journal, underscoring its growing research strength and commitment to scholarly excellence. For all these achievements, I express my sincere thanks to our students and faculty members for their invaluable contributions and countless efforts. We conclude with a commitment to pursuing excellence and look forward to sharing an enhanced version in the next issue.

HOD (Mechanical Engineering)

Celebration of Swami Vivekananda Jayanti and National Youth Day

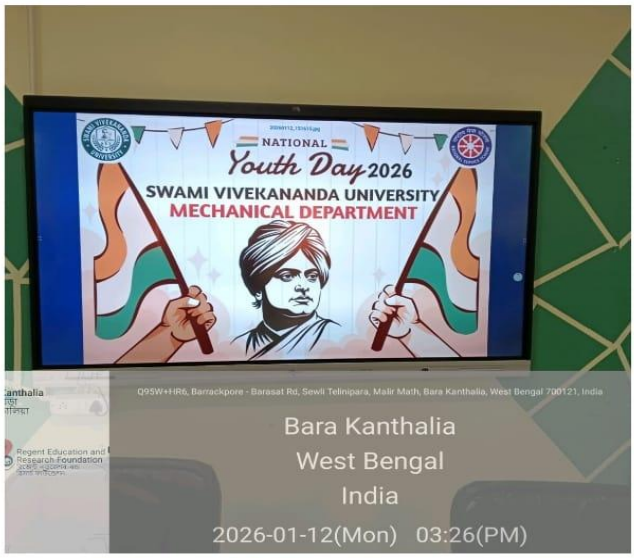
- **Departmental Quiz Contest on the Teachings of Swami Vivekananda:**

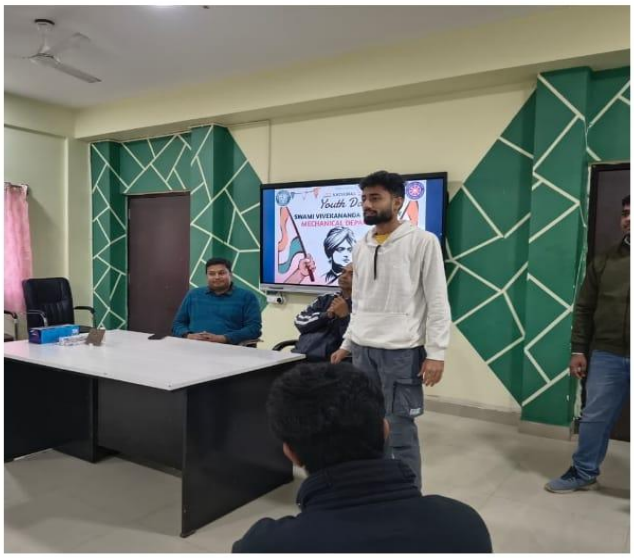
To commemorate the Birth Anniversary of Swami Vivekananda and observe National Youth Day, the Department of Mechanical Engineering at Swami Vivekananda University organized a Quiz Contest on 12th January in Block 6, Room 102. The event witnessed enthusiastic participation from students, reflecting their intellectual curiosity and awareness of India’s spiritual and cultural heritage. Faculty members addressed the students, highlighting Swami Vivekananda’s values of self-confidence, discipline, character building, and service to society, encouraging holistic development and responsible citizenship.

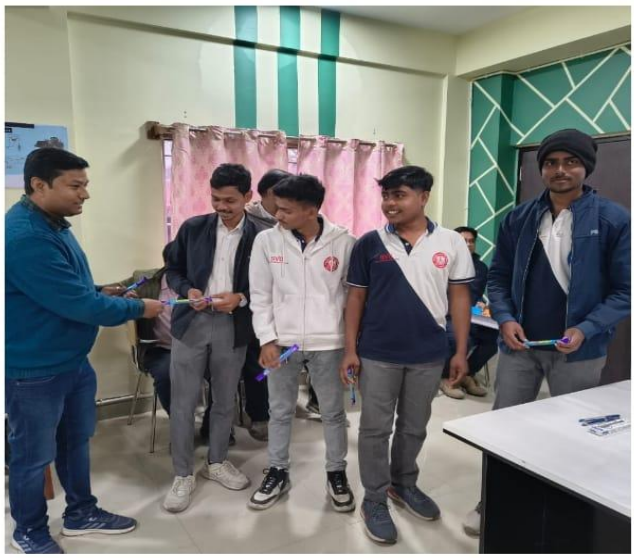
- **Participation in Run for Swadeshi:**

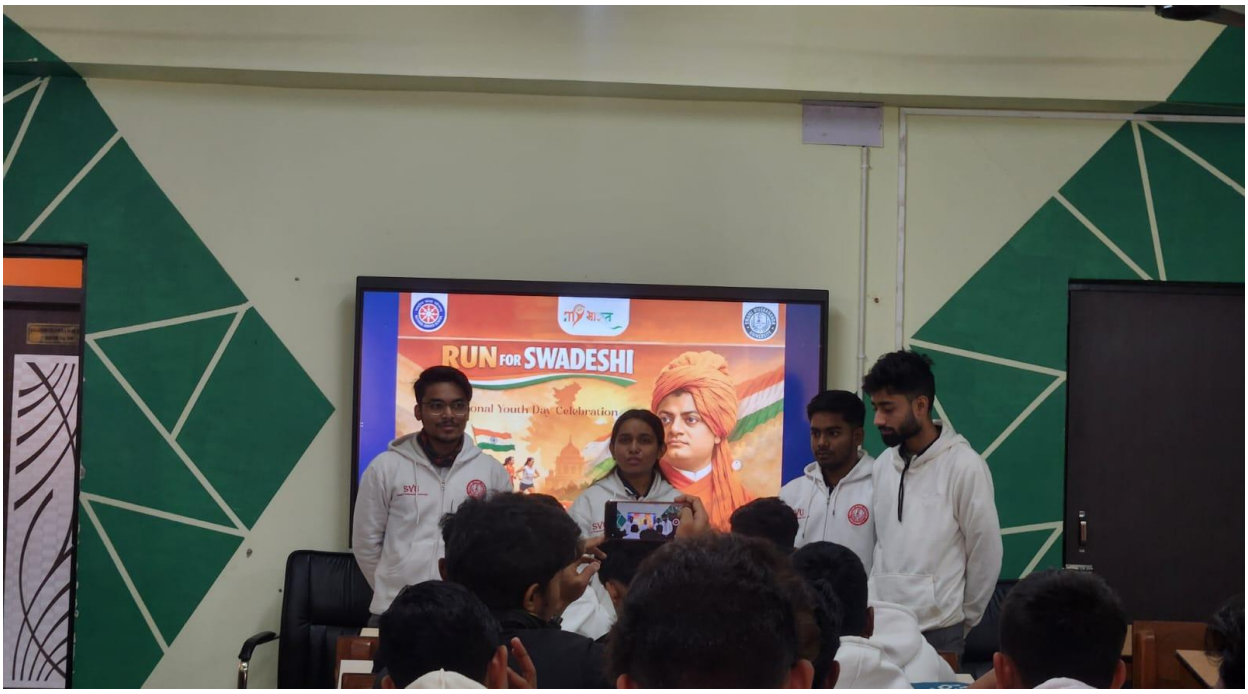
On the same day, as part of National Youth Day celebrations at Swami Vivekananda University, students and faculty members of the Department of Mechanical Engineering actively participated in the Run for Swadeshi, a university-level event. The program symbolized unity, discipline, and patriotic spirit, with strong participation from across the university.

Faculty members delivered motivational speeches highlighting the relevance of Swami Vivekananda's teachings and the vital role of youth in nation building. The event was further enriched by a patriotic song performance by students, creating an inspiring and energetic atmosphere. The celebration successfully reinforced values of patriotism, social responsibility, and collective spirit among all participants.





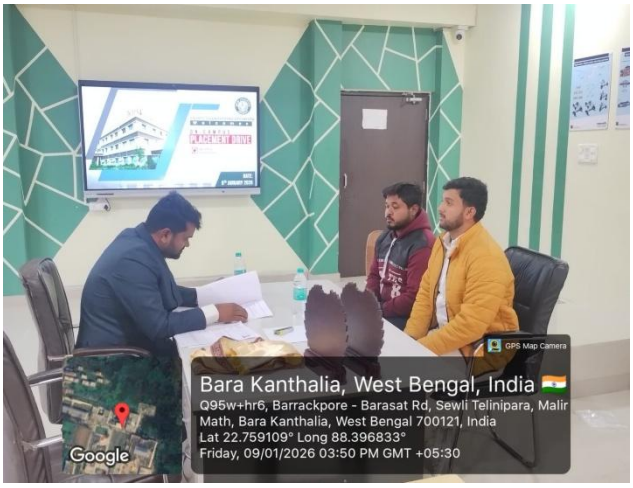




Mechanical Engineering Students Shortlisted in On-Campus Placement Drive

The Department of Mechanical Engineering proudly records the successful participation of its B.Tech final year students in the on-campus placement drive conducted by Quality Austria Central Asia on 9th January 2026 at Swami Vivekananda University. The drive provided a valuable opportunity for students to demonstrate their technical competence, analytical skills, and professional aptitude.

Following a structured selection process, the Mechanical Engineering students Souvik Ankure, Sudipta Bairagya, Ritick Hazra, Nayan Biswas, and Soumendu Datta were shortlisted. Their selection reflects consistent academic performance, dedication, and preparedness for industry challenges. The department congratulates the students on their achievement and wishes them success in their professional careers.

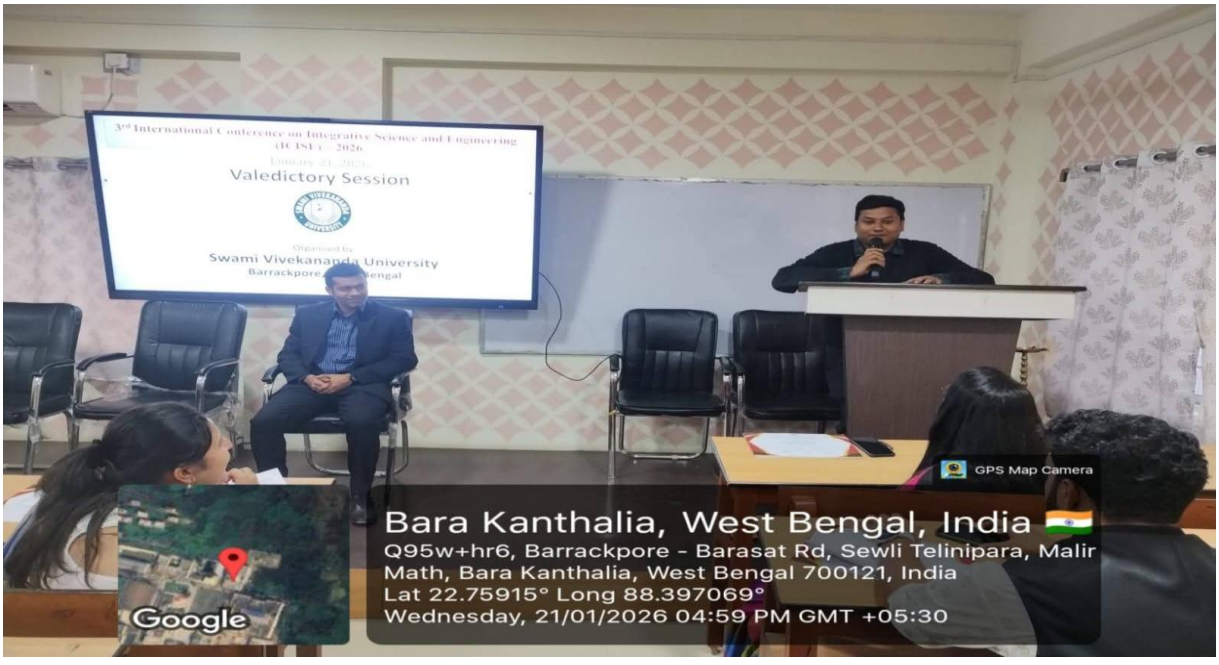


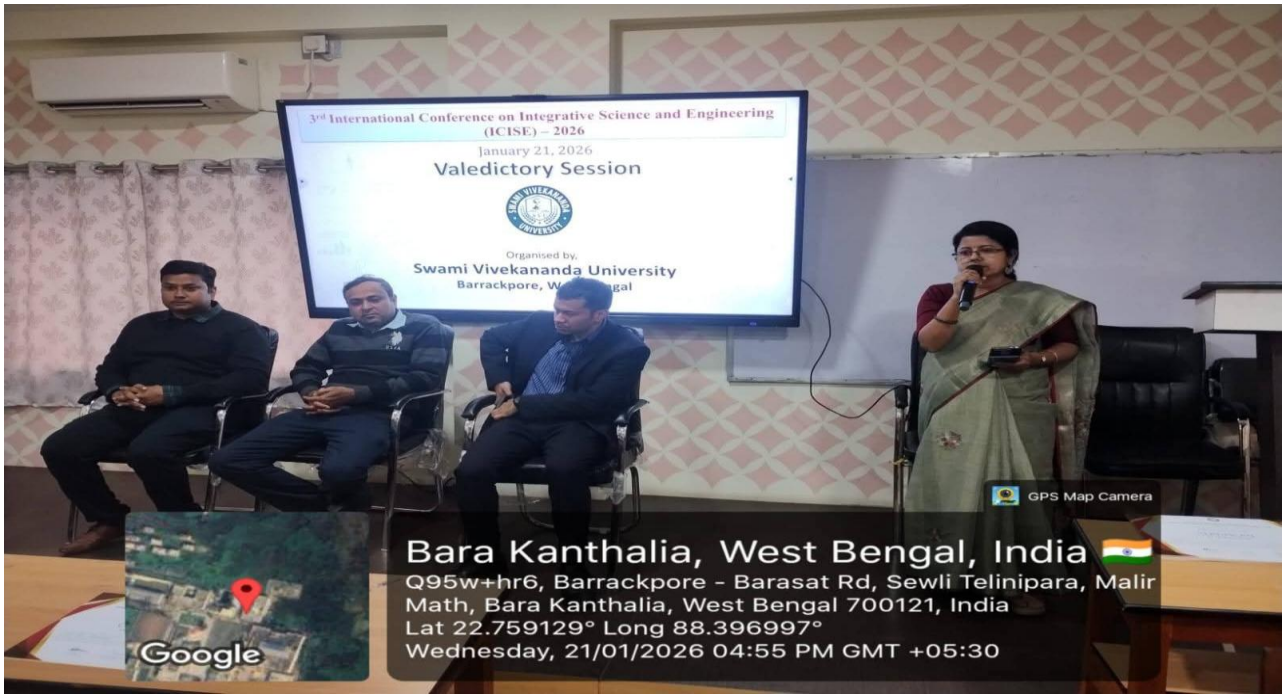
Souvik Ankure	quality austria central asia Succeed with Quality	Mechanical	B.Tech	Shortlisted
Sudipta Bairagya	quality austria central asia Succeed with Quality	Mechanical	B.Tech	Shortlisted
Ritick Hazra	quality austria central asia Succeed with Quality	Mechanical	B.Tech	Shortlisted
Nayan Biswas	quality austria central asia Succeed with Quality	Mechanical	B.Tech	Shortlisted
Soumendu Datta	quality austria central asia Succeed with Quality	Mechanical	B.Tech	Shortlisted

Department of Mechanical Engineering at ICISE–2026

The Department of Mechanical Engineering, Swami Vivekananda University, actively contributed to the 3rd International Conference on Integrative Science and Engineering (ICISE–2026) held on 20–21 January 2026. Faculty members from the department played a key academic role in the successful conduct of the conference.

The Mechanical Engineering technical session was coordinated by Dr. Md. Ershad and Dr. Samrat Biswas, with Dr. Bikash Panja serving as the Session Chair. The session witnessed quality research paper presentations covering contemporary areas of mechanical engineering and allied domains, encouraging interdisciplinary discussion and knowledge exchange. The department's involvement reflected its strong commitment to research, innovation, and academic excellence at an international platform.





Faculty–Scholar Research Achievement in International Journal

The Department of Mechanical Engineering is pleased to announce the publication of a new research article by **Dr. Ranjan Kumar**, in collaboration with PhD Scholar **Sudipta Nath**, and **in collaboration with other reputed institute researcher**, in the reputed SCI-indexed journal **ACS Omega** (Impact Factor: 4.4). The study focuses on the influence of piston bowl geometry and hydrogen–diesel mixing on dual-fuel engine combustion, highlighting improved performance and reduced emissions. This publication reflects the department's continued commitment to high-quality research, inter-institutional collaboration, and innovation.

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Article

Influence of Piston Bowl Geometry and Hydrogen—Diesel Mixing Ratios on Dual-Fuel Engine Combustion

Ranjan Kumar,* Sudipta Nath, Atul, Vinayak Ranjan, Shahanwaz Khan, and Sanjoy K. Ghoshal

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ABSTRACT: The quality of fuel and air mixing depends immensely on the type of bowl shape used for the piston and directly affects an engine's performance and emissions. In this study, the effects of piston bowl designs on the combustion and emissions in a hydrogen—diesel dual-fuel engine with a direct injection (DI) have been investigated. Using numerical simulations, typically three different piston bowls have been analyzed considering engine performance parameters as indicators. Investigation has been aimed for better performance of the engine, lower cost of fuel, and improved emission characteristics. Among different piston bowls studied in this work, it has been observed that the w-type and re-entrant piston bowls increased the cylinder power by 1.27% and 2.65%, respectively, and decreased the indicated specific fuel oil consumption (ISFOC) by 1.04% and 1.63% compared to the U-type bowl, respectively. Among these bowls, much of the NO emissions could be reduced by 25.59% for the w-type bowl and 46.09% for the re-entrant bowl, because of the lower peak temperature compared with the U-type bowl. Changing the piston bowl also has effect on soot emissions and CO_2 emissions. Considering these results, it is recommended to use the re-entrant piston bowl in a four-stroke diesel engine in order to avail enhanced engine performance, reduced fuel consumption, and decreased NO emission.