



SYMBIOSIS INSTITUTE OF TECHNOLOGY
Constituent of Symbiosis International University
Established under section 3 of the UGC Act 1956, Vide notification no. F.9- 12/2001(U.3 of the
Government of India) - Approved by all India council for technical education (AICTE)

SYMBITECH PROGRAMME REPORT
[2025-2026]
DEPARTMENT OF CIVIL ENGINEERING

SymbiTech: A Legacy of Innovation and Holistic Development

SymbiTech, hosted by Symbiosis Institute of Technology (SIT), Pune, is more than just a technical fest—it's an institutional legacy that nurtures creativity, leadership, and holistic student development. Over the years, SymbiTech has become a launchpad for young minds, allowing students to bridge the gap between theoretical knowledge and practical implementation.

At its heart, SymbiTech is designed to offer students a multi-dimensional experience that extends beyond textbooks and classrooms. With a focus on technical, managerial, and leadership skills, the event ensures that students are prepared for real-world challenges. The festival's interdisciplinary nature allows aspiring engineers, entrepreneurs, and innovators to come together, collaborate, and contribute meaningfully to society.



Image: From 2016 and 2017 Techfest

Beyond Academics: The SymbiTech Experience

SymbiTech provides students with an opportunity to gain hands-on experience in various professional roles, helping them develop essential soft skills in:

- Event Planning & Coordination – Managing large-scale events, handling time-sensitive logistics, and ensuring seamless execution.
- Finance & Budgeting – Acquiring sponsorships, managing financial resources, and creating budget plans.
- Public Relations & Branding – Handling marketing, outreach, and media promotions to ensure widespread visibility.
- Logistics & Operations – Planning the execution of large-scale events while managing multiple stakeholders.
- Leadership & Teamwork – Working in teams, leading subgroups, and executing events with precision.



Image: Capa-Mastro 2018

The event's student-driven model allows participants to take charge of decision-making, problem-solving, and critical thinking, ensuring well-rounded growth that benefits them in both professional and entrepreneurial pursuits.

Civil Engineering: The Pillar of SymbiTech

Civil Engineering has played a vital role in making SymbiTech a platform for technical excellence and innovation. The Civil Engineering Department has been a driving force, ensuring that students get a chance to showcase their technical prowess, design acumen, and problem-solving skills.

Over the years, the Civil Engineering students have successfully conducted events such as:

- Bridge Design Competitions – Showcasing creativity and innovation in structural design.
- Earthquake-Resistant Structures Challenges – Encouraging students to create models that withstand seismic forces.
- Sustainable Construction Hackathons – Promoting eco-friendly and cost-effective engineering solutions.
- Site Planning & CAD Design Contests – Bringing technical skills to the forefront with real-world applications.
- Smart City Model Making – Encouraging future-ready urban infrastructure innovations.



Image: From previous techfest

These events have not only honed students' technical skills but also prepared them for industry challenges, ensuring they are well-equipped to tackle real-world engineering problems with confidence.

Guidance from Mentors & Professors

A significant pillar of support for SymbiTech has been the mentorship provided by professors and industry experts. Faculty members at SIT actively encourage students to think beyond conventional learning by integrating practical applications, research, and innovation into their approach. Their guidance has been instrumental in ensuring that students gain exposure to industry trends and challenges, helping them navigate the complexities of engineering and management.

Professors not only act as mentors but also collaborators, providing students with the necessary technical expertise and strategic direction to execute large-scale projects and events successfully.



Image: The constant support over the years

Past Events and Achievements

SymbiTech has been home to numerous successful events over the years, bringing together students, faculty, and industry professionals to foster a culture of knowledge sharing, innovation, and growth. Some noteworthy events from previous years include:

- Tech Talks & Expert Panels – Sessions with renowned engineers, architects, and industry leaders, offering insights into emerging technologies.
- AI & Automation Challenges – Encouraging students to integrate smart technologies into traditional engineering practices.
- Drone & Robotics Competitions – Exploring advancements in automation, AI, and UAV technology.
- Structural Integrity Testing Events – Providing hands-on experience with material strength and failure analysis.
- Urban Planning Workshops – Helping students design smart and sustainable cities.



These events have not only enhanced students' technical capabilities but have also helped them build networks, gain industry exposure, and sharpen their managerial skills.

Looking Forward: The Future of SymbiTech

As SymbiTech continues to grow, it aims to integrate cutting-edge technologies and expand collaborations with industry leaders and research institutions. The vision for the future includes:

- Greater interdisciplinary collaboration between different branches of engineering.
- Increased industry tie-ups to bridge the gap between academia and practical applications.
- Incorporation of sustainability-driven projects that address real-world challenges.
- Enhanced student participation in research-based competitions.

SymbiTech remains a symbol of excellence, innovation, and community engagement, inspiring students to push their limits and create groundbreaking solutions. As students, faculty, and mentors come together to shape the future, SymbiTech continues to be a transformative experience that goes beyond technical knowledge, fostering leadership, teamwork, and professional growth.

DATE	DAY	EVENT NAME	VENUE	TIME
24 JANUARY 2025	DAY 1: Friday	CRANE-O-MANIA	Concrete Lab	10.00am to 5.30pm
25 JANUARY 2025	DAY 2: Saturday	TILT 'N' FLOW	Concrete Lab & Fluid Mechanics	10.30am to 5.45pm

DAY 1: CRANE-O-MANIA

1. Introduction

Symbitech 2025 proudly hosted **Crane-o-Mania**, a structural engineering competition that tested participants' creativity, technical expertise, and precision. Held at the Concrete Lab, the event challenged students to design a functional tower crane using limited materials under strict constraints. The event was a resounding success, showcasing exceptional engineering talent and teamwork.

A stunning 7-foot model of the Empire State Building in New York was intricately replicated using MDF sheets and precision laser cutting techniques. The masterpiece showcased meticulous craftsmanship, capturing the iconic skyscraper's architectural details, and served as a remarkable representation of engineering excellence and creative artistry at the event.



Image: Astonishing Model of Empire estate

2. Overview of the Event

Crane-o-Mania required participants to construct tower cranes using balsa sticks and Feviquik, adhering to strict material and design constraints. The competition tested the cranes' ability to withstand incremental vertical loads until failure, with participants demonstrating remarkable creativity and precision.



Image: Team of CESS & ASCE along with Participants and our Mentors

3. Key Highlights

- **Adherence to Constraints:** All teams successfully followed the material and design guidelines, displaying their ability to work within limitations.
- **Innovative Designs:** Each team showcased creative approaches to structural stability and functionality.
- **Audience Engagement:** The load-testing phase was a highlight, drawing cheers and excitement from the audience.

4. Winners

After rigorous evaluation, **Group 2** claimed the first prize for their outstanding design and exceptional load-bearing capacity. **Group 1** secured second with innovative and durable designs.

The winners were congratulated by our esteemed Head of Department, **Dr. Amar Jain**, who commended their hard work, creativity, and problem-solving skills.

Event Name	Prize	Participants
Crane-O-Mania	1st Prize	Shivam Meghraj Tupange, Atharav Somawanshi, Umeed Singh, Shreyash Shrikant Tapkir
	2nd Prize	Mukta Deskmukh, Shruti Somawanshi, Smyan Agrawal, Adiya Shilar



Image: Winners of Crane-o-Mania

DAY 2: TILT 'N' FLOW

1. Introduction

Symbitech 2025 proudly presented its second innovative engineering challenge, Tilt-n-Flow, a unique event that combined hydrodynamics and structural design. Participants designed and tested structural models in a 10-meter-long Tilting Flume, which included an in-house-designed artificial wave maker paddle. This event aimed to evaluate participants' ability to build structures capable of withstanding pulsating wave loads and incremental weights while adhering to strict constraints.

2. Overview of the Event

Tilt-n-Flow revolved around testing G+3 building models under artificial wave conditions. The flume, with dimensions of 9m in length, 0.5m in width, and 1.05m in depth, simulated real-world wave forces, allowing participants to analyze the structural performance of their models under controlled hydrodynamic conditions. The event encouraged participants to push the boundaries of design and practicality while adhering to strict material and design rules.

Model Specifications:

- Height of Building: G+3 with floor-to-floor height of 10 cm.
- Floor Area: 125 to 150 sq. cm.
- Fixtures Per Slab: Four fixtures for adding weights.

The construction constraints required that no vertical joints were allowed for columns, ensuring structural integrity and stability. Each floor was permitted to have a maximum of one external bracing on any three sides, while double bracing was strictly prohibited to maintain uniformity in design. Additionally, wall panels were mandatory on three sides, with the front wall being an essential requirement for all models. To uphold design clarity and functionality, complete internal clearance of the structure had to be maintained, preventing any obstructions within the internal framework.

3. Judging Criteria

- The competition was judged based on the following parameters:

- Weight Efficiency: Minimum weight sustaining maximum pulsating force.
- Structural Integrity: Failure was defined as structural member failure or wall failure.

Testing Phases:

i. Primary Level:

- Each floor was required to sustain a weight of 100 g. Weights were placed in fixtures on all slabs.
- First Level – Pulsating Load of Breaking Waves:
- The structure was tested against pulsating wave loads at three wave heights (0.3m, 0.45m, 0.6m) equivalent to forces of 4.41 kN, 6.62 kN, and 8.82 kN respectively. Each test lasted for 30 seconds.

ii. Advanced Level:

Incremental loads of 50 g/floor were added, and the structure was re-tested under the same wave conditions until failure occurred.



Image: While making and testing of the models

4. Winners

After a rigorous and competitive evaluation process, the following teams emerged victorious:

1st Place: **Group 4** – Their lightweight yet robust design sustained the maximum pulsating force while adhering to all constraints.

2nd Place: **Group 1** – Known for their innovative use of wall panel designs.

EVENT NAME	POSITION	WINNERS
Tilt-N-Flow	1st Prize	Shivam Meghraj Tupange, Atharav Somawanshi, Umeed Singh, Shreyash Shrikant Tapkir
	2nd Prize	Basant Chaudary, Pravin, Charu, Viraj Shah



Image: The Winners of Tilt 'N' Flow

5. Judges' Feedback

The judges lauded the participants for their exceptional effort and ingenuity in designing efficient structures. They encouraged teams to further refine their understanding of structural dynamics and optimization in future competitions.



6. Special Acknowledgments

A heartfelt thank you to the **CESS and ASCE teams** for their outstanding dedication and teamwork in organizing this event. Under the leadership of **Raj Singh** and **Abhisheksing Pardeshi** (Presidents), and **Vansh Jain** and **Nitin Varun** (Vice Presidents), the event was executed flawlessly. Special thanks also go to the **heads and co-heads** who worked tirelessly to ensure every detail was meticulously planned and executed. Your commitment was the cornerstone of Crane-o-Mania's success.

For three relentless weeks, the **CESS (Civil Engineering Students' Society) and ASCE (American Society of Civil Engineers) teams** poured their **blood, sweat, and unwavering dedication** into making SymbiTech a grand success. From **meticulous planning and sleepless nights** to countless hours of brainstorming, coordination, and execution, every member pushed their limits to bring the event to life. The teams worked tirelessly—juggling academics, managing logistics, securing sponsorships, and ensuring that every detail was perfected. Whether it was **designing event blueprints, handling registrations, arranging venues, coordinating with speakers, or troubleshooting last-minute challenges**, the commitment and passion they displayed were nothing short of extraordinary. It wasn't just an event for them; it was a **mission, a responsibility, and a testament to their perseverance and teamwork**. Their efforts didn't just shape SymbiTech—they reinforced the **spirit of unity, leadership, and resilience** that defines SIT's civil engineering community.



Image: CESS & ASCE TEAM (2024-2025)

We would like to extend our deepest gratitude to our guide, **Dr. Amar Jain**, whose invaluable mentorship, encouragement, and expertise guided the event from planning to execution. Dr. Jain's dedication to fostering student growth and innovation has been an inspiration to everyone involved. We extend our heartfelt gratitude to our lab assistant, **Mr. Abhijeet Gawande**, whose unwavering support, tireless efforts, and constant guidance were the backbone of this event's success. His dedication to helping us at every step, from preparation to execution, went above and beyond. This event would not have been possible without his invaluable contributions, and we are deeply thankful for their kindness, patience, and encouragement throughout the journey.



Image: , Dr. Amar Jain, Mr. Vinay Jatti, Dr. Sanjay Kulkarni & Mr. Abhijeet Gawande and Chief Guest of the Day

7. Conclusion

The **Crane-o-Mania** and **Tilt-n-Flow** events were resounding successes, showcasing the ingenuity, technical prowess, and problem-solving abilities of all participants. Both competitions provided a dynamic platform for students to apply engineering principles in real-world challenges, pushing the boundaries of creativity and structural resilience. **Crane-o-Mania** tested precision and load-bearing efficiency, while **Tilt-n-Flow** explored the impact of wave forces on structures, highlighting the importance of innovative design in real-world applications. The enthusiasm, teamwork, and dedication displayed by participants, organizers, and mentors ensured that these events were not only educational but also an inspiring experience for all. Their success has set a high benchmark for future competitions, reinforcing the importance of practical learning and engineering excellence.



Attendance:

EVENT 1: CRANE-O-MANIA

GROUP	NAME OF THE GROUP
GROUP 1	<ul style="list-style-type: none">• Ansh Jain• Arth Agarwal• Aryan Chauhan• Chaitanya Khanwalkar
GROUP 2	<ul style="list-style-type: none">○ Kale Ishani Anil○ Kashika Goyal○ Kaushik Ghosh○ Lakshya Vishal Agarwal
GROUP 3	<ul style="list-style-type: none">• Moksh Jain Surana• Sneha Singh• Prashant Kumar Singh• Punit Suresh Rahangdale
GROUP 4	<ul style="list-style-type: none">○ Shivam Meghraj Tupange○ Atharav Somawanshi○ Umeed Singh○ Shreyash Shrikant Tapkir
GROUP 5	<ul style="list-style-type: none">• Mukta Deskmukh• Shruti Somawanshi

	<ul style="list-style-type: none"> • Smyan Agrawal • Adiya Shilar
GROUP 6	<ul style="list-style-type: none"> ○ Vinode Aryan Santosh ○ Neev Mistry ○ Shreyash Shrikant Tapkir ○ Divam Daffara

EVENT 2: TILT 'N' FLOW

GROUP NUMBER	NAME OF MEMBER
GROUP 1	<ul style="list-style-type: none"> • Somwanshi Atharva Manoj • Suhani Khanwe • Ummed Singh Kachawa • Vinode Aryan Santosh
GROUP 2	<ul style="list-style-type: none"> ○ Rudransh Patidar ○ Shreya Roy ○ Shruti Sanjay Somwanshi ○ Sneha Singh
GROUP 3	<ul style="list-style-type: none"> • Samarjit Patil • Santosh Kumar • Shaikh Mohammed Maaz Abdul Mateen • Shaurya Dhakrey
GROUP 4	<ul style="list-style-type: none"> ○ Shivam Meghraj Tupange ○ Atharav Somawanshi ○ Umeed Singh ○ Shreyash Shrikant Tapkir
GROUP 5	<ul style="list-style-type: none"> • Basant Chaudary • Pravin • Charu • Viraj Shah
GROUP 6	<ul style="list-style-type: none"> ○ Agarwal Simyan ○ Sandeep ○ Aadi Amit Shet ○ Moksh Jain Surana