



# SARVAJANIK COLLEGE OF ENGINEERING & TECHNOLOGY (SCET)

(A constituent institute of Sarvajani University)  
Dr. R.K. Desai Marg, Athwalines, Surat – 305001

## CHEMICAL ENGINEERING DEPARTMENT



## REPORT ON ASPEN PLUS WORKSHOP

Department of Chemical Engineering



**Sarvajani College of Engineering & Technology**  
Department of Chemical Engineering



# ASPEN PLUS SIMULATION



## JOIN OUR WORKSHOP

- Learn • Build • Simulate • Compete
- Explore Aspen Plus interface & basics
- Build process flowsheets
- Simulate real unit operations
- Apply your learning through numerical challenge

### WORKSHOP TOPICS

- Significance & Importance
- Aspen Basic Environment
- Flowsheeting
- Simulation of Unit Operations



**DATE**  
Thursday, September 10



**TIME**  
2:00 PM - 4:00 PM



**LOCATION**  
CAD LAB, J-104  
CHEMICAL DEPT.

Scan the QR for Registration





**THE CHALLENGE**

Solve Aspen-based numericals using what you learn during the workshop and compete in ChemClave 2026 Aspen Arena Event with participating certificates

# REGISTER TODAY



8799283636



SAMEERMIRZA.CH23@SCET.AC.IN



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### 1. Event Details

**Event:** Aspen Plus Workshop

**Date:** 10 September 2026

**Time:** 11:00 AM – 1:00 PM

**Venue:** J-104 CAD Lab, Chemical Engineering Department, SCET College

### 2. Introduction

Department of Chemical Engineering, Sarvajani College of Engineering & Technology, organized an AspenPlus Workshop on 10<sup>th</sup> September 2026 at the J-104 CAD Lab. The workshop was conducted to introduce the fundamentals of Aspen Plus process simulation software and its applications in Chemical Engineering.

The session was very useful for students who were new to process simulation. It focused on understanding the Aspen Plus environment, setting up a simulation, selecting suitable components and property methods, creating material streams and flowsheets, using different unit operations, running simulations, and interpreting the results.

### 3. Objectives of the Workshop

The main objectives of the workshop were:

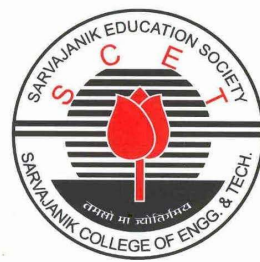
- To introduce students to the Aspen Plus simulation environment.
- To understand how to define components and fluid packages.
- To learn the selection of appropriate thermodynamic/property methods.
- To understand the creation and connection of material streams and unit operations.
- To demonstrate the working of different Chemical Engineering unit operations in Aspen Plus.



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- To perform simulations and understand the generated process results and calculations.
- To develop practical familiarity with process simulation before participating in the Aspen Arena – ChemClave 2026 event.

## 4. Workshop Proceedings

The workshop began with an introduction to Aspen Plus and its importance in Chemical Engineering. Students were familiarized with the Aspen Plus software interface and the basic steps involved in creating a process simulation.

The session then covered the property environment, where students learned about adding components and selecting suitable property methods according to the nature of the chemical system. Different approaches such as ideal methods, equation-of-state models, and activity-coefficient models were discussed.

Students were then introduced to the creation of material streams and process flowsheets. The instructor demonstrated how input conditions such as temperature, pressure, flow rate, and composition are specified and how these streams are connected to different unit operations.

## 5. Unit Operations Covered

Several important Aspen Plus unit operations were demonstrated during the workshop, including:

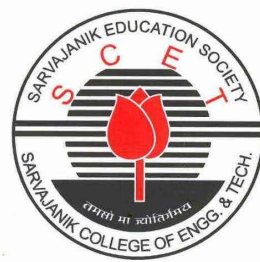
- **Mixer:** Students learned how multiple inlet streams can be combined into a single outlet stream. The concept of a decanted stream for liquid-liquid systems was also introduced.
- **Flash / Separator:** Flash calculations were demonstrated to understand vapour-liquid and liquid-liquid separation. Students observed how Aspen Plus calculates outlet flow rates, compositions, and phase behavior.
- **Heater / Heat Exchanger:** The workshop included the use of heating and heat-exchange operations. Students were introduced to specifying temperature, pressure, and heat-duty requirements and observing the resulting energy calculations.



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- **Pump:** The working of a pump block was demonstrated for liquid streams. Important parameters such as discharge pressure, efficiency and power requirement were discussed.
- **Distillation:** A DSTWU shortcut distillation example was covered. Students were introduced to concepts such as minimum reflux ratio, actual reflux ratio, number of stages, feed stage, condenser duty, reboiler duty, and product recovery.
- **Reactors:** Different reactor models available in Aspen Plus were introduced, including RStoic, RYield, REquil, RGibbs, RCSTR, RPlug and RBatch. The selection of reactor models according to reaction information and available data was discussed.
- **Pressure-Changing Equipment:** The workshop also introduced pressure-changing operations involving equipment such as pumps, compressors, valves and pipelines.

## 6. Practical Simulation and Numerical Exercises

A major part of the workshop involved hands-on simulation and numerical exercises using Aspen Plus. Students followed the instructor's demonstrations and observed how Chemical Engineering calculations can be performed using the software.

Examples involving flash separation, heating, pumping, mixing, distillation and reaction systems were demonstrated. Students were able to see how input data such as temperature, pressure, flow rate and composition are entered into Aspen Plus and how the software generates process results.

The exercises also demonstrated how theoretical Chemical Engineering concepts can be connected with software-based process simulation. Students learned to examine simulation results such as stream conditions, phase compositions, flow rates, heat duties, pressure conditions and equipment requirements.

## 7. Learning Outcomes

By the end of the workshop, students gained an understanding of:

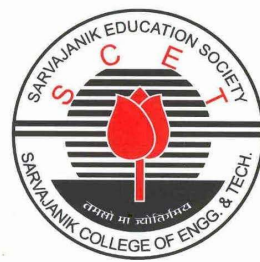
- The basic Aspen Plus software environment.



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- Defining components and selecting appropriate property methods. Creating material streams and developing a basic process flowsheet.
- Using common Aspen Plus unit operation blocks.
- Performing basic process simulations.
- Understanding simulation results and process calculations.
- Applying Chemical Engineering concepts to computer-based process modelling.
- Developing the basic skills required for further Aspen Plus problem-solving and competitions.

## 8. Conclusion

AspenPlus Workshop provided students with valuable practical exposure to process simulation and modelling. The combination of theoretical concepts, software demonstration, and numerical exercises helped students understand how Aspen Plus can be used to model and analyse chemical processes.

The workshop also served as a useful preparation session for the upcoming Aspen Arena – ChemClave 2026, where students would apply their AspenPlus knowledge and Chemical Engineering fundamentals to solve simulation-based challenges.

Overall, the session was informative and interactive and helped students develop a stronger understanding of process simulation, unit operations, thermodynamic property methods, and analysis of simulation results.



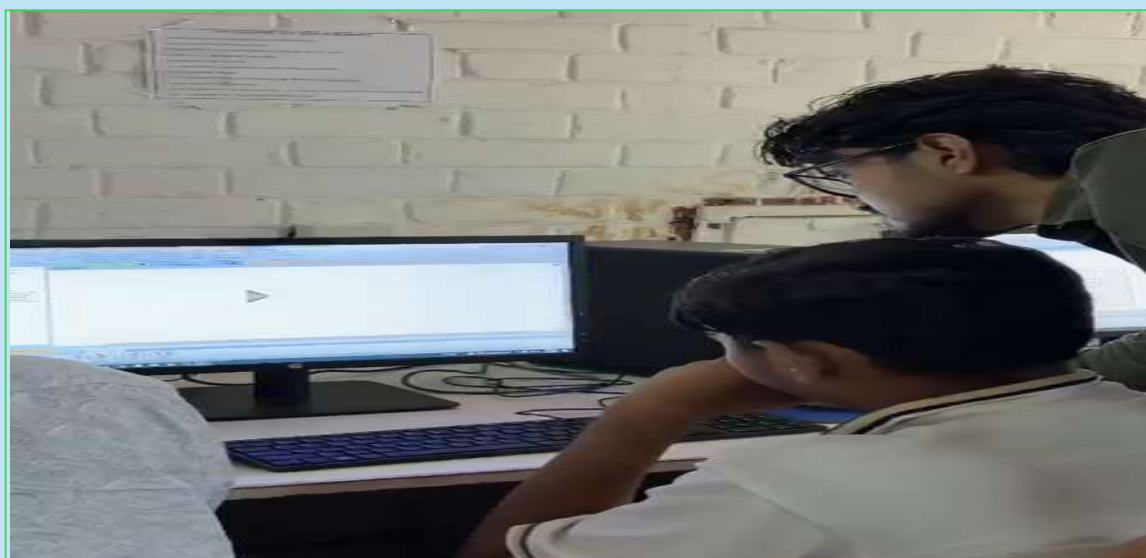
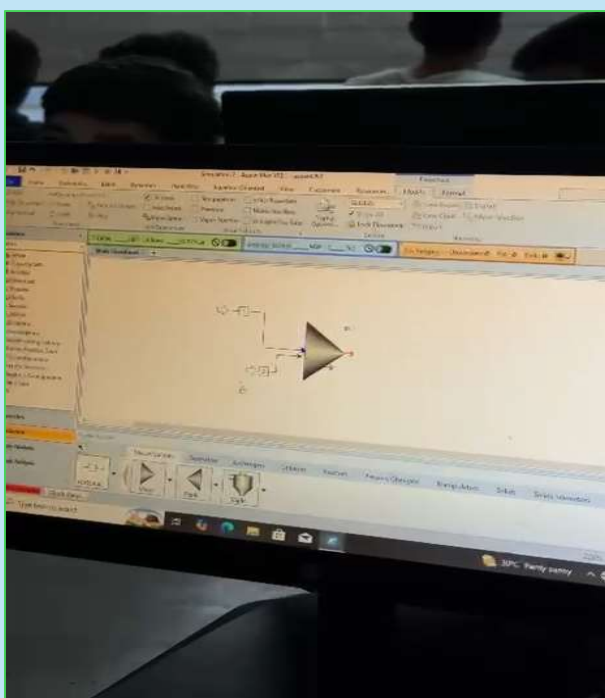
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### Glimpses of the Event:

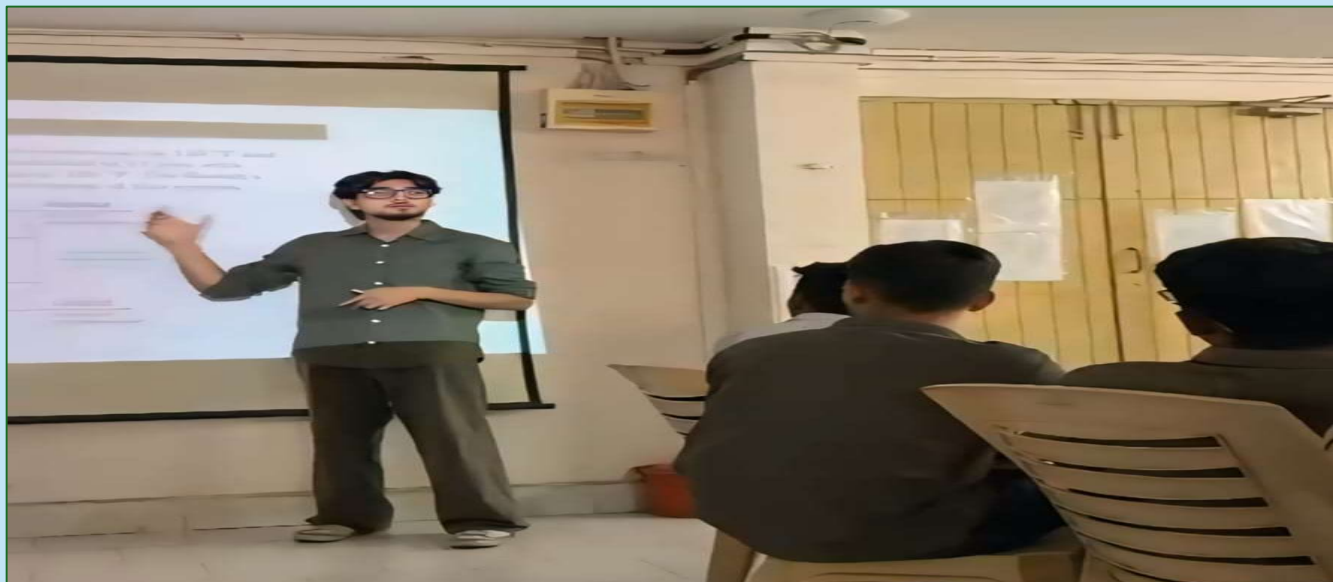




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### Students' Feedback:

| How satisfied were you with the event organization | How would you rate your overall experience at the / | What did you like most about the Aspen Arena over | Would you like to participate in similar Chemical En | College name             |
|----------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|------------------------------------------------------|--------------------------|
| Very satisfied                                     | Excellent                                           | Good                                              | Yes                                                  | Soet                     |
| Very satisfied                                     | Excellent                                           | It was good no need to improve                    | Yes                                                  | Soet                     |
| Very satisfied                                     | Excellent                                           | Very good explanation                             | Yes                                                  | Soet                     |
| Very satisfied                                     | Excellent                                           | No i don't think so                               | Yes                                                  | Soet                     |
| Satisfied                                          | Excellent                                           | Very nicely explained                             | Yes                                                  | Sarvajani College        |
| Very satisfied                                     | Excellent                                           | Very nicely explained                             | Yes                                                  | Sarvajani college of eng |
| Neutral                                            | Good                                                | Nothing                                           | Yes                                                  | Soet                     |
| Satisfied                                          | Good                                                | Good understanding                                | Yes                                                  | Soet                     |
| Very satisfied                                     | Excellent                                           | Good                                              | Yes                                                  | Soet                     |
| Very satisfied                                     | Good                                                | Step by step teaching and explanation             | Yes                                                  | SCET                     |
| Very satisfied                                     | Excellent                                           | Take 1 more section before chemclav               | Yes                                                  | Sarvajani college of eng |
| Very satisfied                                     | Excellent                                           | No improvements                                   | Yes                                                  | Sarvajani College of Eng |
| Satisfied                                          | Good                                                | Good for simulation                               | Yes                                                  | Soet                     |
| Satisfied                                          | Good                                                | Explanation                                       | Yes                                                  | Soet                     |
| Very satisfied                                     | Excellent                                           | Behavior of staff                                 | Yes                                                  | Sarvajani college of eng |
| Satisfied                                          | Good                                                | Overall good experience and no need of improvem   | Yes                                                  | Sarvajani college of eng |
| Very satisfied                                     | Excellent                                           | Aspen workshop                                    | Yes                                                  | SARVAJANIK COLLEGE O     |
| Very satisfied                                     | Excellent                                           | Good for our                                      | Yes                                                  | Soet                     |
| Very satisfied                                     | Excellent                                           | I                                                 | Yes                                                  | Soet                     |
| Satisfied                                          | Good                                                | No                                                | Yes                                                  | SCET                     |
| Satisfied                                          | Excellent                                           | The overall experience of the workshop was great. | Yes                                                  | Soet                     |
| Very satisfied                                     | Good                                                | aspen workshop                                    | Yes                                                  | sarvajani college of eng |
| Satisfied                                          | Good                                                | Longer session and more sessions                  | Yes                                                  | Soet                     |
| Very satisfied                                     | Excellent                                           | No need for improvement and samir did excellent v | Yes                                                  | Soet                     |
| Satisfied                                          | Good                                                | Nothing                                           | Yes                                                  | Sarvajani college of eng |
| Satisfied                                          | Good                                                | Good experience                                   | Yes                                                  | Soet                     |
| Very satisfied                                     | Excellent                                           | Good explanation                                  | Yes                                                  | SARVAJANIK COLLEGE O     |
| Very satisfied                                     | Excellent                                           | Coordinating                                      | Yes                                                  | Soet                     |

### Acknowledgements

The Chemical Engineering Department, SCET would like to acknowledge,

- Managing trustees and office bearers of the Sarvajani University and Sarvajani Education society
- Prof. (Dr.) Hiren Patel, **Principal, SCET**
- Dr.Srujal Rana, **Head, Chemical Engineering Department**
- One and all** for their direct or indirect support

#### Student Coordinators

Sameer Baig  
Nikhil Patil

#### Faculty Coordinators

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Prof. Ashish Parmar