Workshop On Fluid Simulation Using Sims Software

5 Day Certified Workshop 20th -25th August 2018 Organized By

MIDGRANICAL DEPARTMENT



VISHWATMAK OM GURUDEV COLLEGE OF ENGINEEIRNG

[Affilliated to MSBTE, Mumbai, Approved by AIGTE, New Delhi & DTE, M.S.] At: Mohilli, Post: Aghai, Via Kalyan, Dist.: Thane, 421301

Resource Person: Prof. Manoj Choudhari

Course **Objectives**

Upon completion of this course, you will be able to:

- Define fluid flow simulations in the 3DEXPERIENCE platform, including isothermal internal and external steadystate flow.
- Perform fully coupled conjugate heat transfer (CHT) simulations.
- Postprocess flow simulation results.

Contact Us



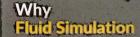
Phone: 7218663456



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Address: H742+63R, Maharashtra State Highway 79, Mohili, Mohili Maharashtra 421601



 Computational fluid dynamics helps engineers design products in which the flow of fluid components is a major challenge. Applications include conjugate heat transfer, turbomachinery fluid-structure interaction, combustion, and outtiphase simulation, among many others.

Moral Agras of the advancement of this technology to Dist. Stabar probast at applications such as oil and gas. Dist.—There explace, automotive electric vehicles, energy agreement HVAC.

FLUID SIMULATION What is a fluid simulation?

COURSE OBJECTIVES

Upon completion of this course, you will be able to:

- Define fluid flow simulations in the 3DEXPERIENCE platform, including isothermal internal and external steadystate flow.
- Perform fully coupled conjugate heat transfer (CHT) simulations.
- Postprocess flow simulation results.





Course Content

- 1. Introduction to Hydraulics and Pneumatics
- (6 Hrs)
- · Basics of Hydraulics and Pneumatics
- Identification of symbols of all types of valves in hydraulies and pneumatics.
- · Meter in circuit and meter out circuit.
- Sequencing circuit using CASACADE method and Shift Register Method.
- 2. Introduction to Hydraulics and Pneumatics (6 Hr
- · Basic electrical symbols used in hydraulic.
- Basic electrical symbols used in pneumatic
- · Electro Hydraulic circuit using direct control
- 3. Introduction to Electro-Hydraulics Circuits (6 Hrs.)
- · Electro Hydraulic circuit using indirect control
- Electro pneumatic circuit using direct control
- 4. Electro pneumatic circuit using indirect control (6Hrs.)
- 5. Identification of Relay, Solenoid valve

(6 Hrs)

Workshop on Fluid Simulation using Sim software

SYLLABUS/ COURSE CONTENT

Sr. No.	Course Content	Number of Hours
1.	i) Basics of Hydraulics and Pneumatics	06
	ii) Identification of symbols of all types of	
	valves in hydraulics and pneumatics.	
	iii) Meter in circuit and meter out circuit.	
2.	i) Basic electrical symbols used in pneumatic.	06
	ii) Electro Hydraulic circuit using direct control.	
3.	i). Electro Hydraulic circuit using indirect control	06
	ii). Electro pneumatic circuit using direct control	
4.	i) Electro pneumatic circuit using indirect	06
	control	
5.	i) Identification of Relay, Solenoid valve and	06
	switches	

Schedule

Date	Day	Time	Course Content
20/08/2018	1	10:00 AM to 01:00 PM 02:00 PM to 05:00 PM	 Basics of Hydraulics and Pneumatics Identification of symbols of all types of valves in hydraulics and pneumatics. Meter in circuit and meter out circuit. Sequencing circuit using CASCADE method and Shift Register Method.
21/08/2018	2	10:00 AM to 01:00 PM 02:00 PM to 05:00 PM	 Basic electrical symbols used in hydraulic. Basic electrical symbols used in pneumatic. Electro Hydraulic circuit using direct control
22/08/2018	3	10:00 AM to 01:00 PM 02:00 PM to 05:00 PM	Electro Hydraulic circuit using indirect control Electro pneumatic circuit using direct control
23/08/2018	4	10:00 AM to 01:00 PM 02:00 PM to 05:00 PM	Electro pneumatic circuit using indirect control
24/08/2018	5	10:00 AM to 01:00 PM 02:00 PM to 05:00 PM	Identification of Relay, Solenoid valve and switches Assessment
25/08/2018	6	10:00 AM to 01:00 PM	Feedback Certificate Distribution Agr. 31 Tall State Current Control



!!Sabka Malik Atma!!

Vishwatmak Jangali Maharaj Ashram Trust's VISHWATMAK OM GURUDEV COLLEGE OF ENGINEERING

Department of Mechanical Engineering
ADD ON Program on Fluid Simulation using Sims Software

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Program Coordinator

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VishwatmakJangliMaharaj Ashram Trust's

Vishwatmak Om Gurudev College of Engineering Department of Mechanical Engineering

One Page Activity Report

- Faculty Name Prof. Mahesh Salunke
- Date -20/08/2018-25/08/2018 Timing 10.00AM-05.00 PM
- Planned Activity ADD On Program on Fluid Simulation using SIMs Software
- Permission from Authorities Prof. Datta Pawse (Principal)
- Implementation Details The purpose of the workshop is to introduce students to the most important conceptual approaches of automation using pneumatics and Hydraulics as well as to explore and formulate the theoretical framework for the analysis of the topic that is examined in the context of their Graduate Dissertation. Emphasis is also given to the basic simulation approach and the use of the most appropriate depending on the central question considered Automation using hydraulics and pneumatics methods and tools (quantitative and / or qualitative) to carry out their simulation study.
- Conclusion After completion, this workshop we conclude that student gets more benefits about this workshop and they are more familiar about the software. In the market scenario the extra skills are require for getting a good job, so software knowledge is the most important factor of industry. We are very thankful to our Head of Department for giving such good support as well as we are also special thankful to our President sir and Principal Sir that he was continuously guiding and supporting us.
- Feedback Report- Attached

Completion Report - Workshop Successfully completed on 25/08/2018

Coordinator

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!! Sabka Malik Atma !!

Vishwatmak Jangli Maharaj Ashram Trust's

Vishwatmak Om Gurudev College of Engineering

Department of Mechanical Engineering

Report on ADD On Program on Fluid Simulation using SIMs Software Course Goal:

The purpose of the workshop is to introduce students to the most important conceptual approaches of automation using pneumatics and Hydraulics as well as to explore and formulate the theoretical framework for the analysis of the topic that is examined in the context of their Graduate Dissertation.

Emphasis is also given to the basic simulation approach and the use of the most appropriate – depending on the central question considered – Automation using hydraulics and pneumatics methods and tools (quantitative and / or qualitative) to carry out their simulation study.

The main objective of the seminar is to make familiar with all the pneumatics and hydraulics tools and by simulation they can understand all the circuits.

Student Learning Outcomes:

By the end of this course, you should be able to:

- 1. To understand the basics of pneumatics and hydraulics.
- 2. To understand the basic symbols used in electrohydraulic and electro pneumatics.
- 3. The ability to develop the meter in and meter out and Sequencing methods using software.
- 4. To understand the Electro pneumatic and electrohydraulic.
- 5. To be able to simulate all the sequencing circuit using software.

The course aims:

- To develop the basics circuits in pneumatics and hydraulics. Developing the knowledge and understanding the festo sim software.
- To acquire knowledge about the use of different symbols used in pneumatics and hydraulics.
- To obtain, simulated results by developing circuits using simulation software by systematically applying the relevant methods, the necessary capabilities to adapt to actual simulation processes. At the end of the course, students will be able to design different circuits which are either electric or pneumatics or hydraulics using Festo Sim software.
- To develop their ability to critically design, evaluate and simulate fluid power concepts.
- To promote the progress of the knowledge society and generating new research ideas.
- To promote free, creative and inductive thinking.

The course is organized according to the following topics: Understanding of basics symbols used in pneumatics and hydraulics. Selection of tool by specific application. The method of simulation and analysis of the simulated results.

The seminar consists of 5 lectures covering the following topics:

- 1. 1st Lecture: Introduction to the basic symbols used in pneumatics and hydraulics. Identification of the all types of directional control valve, F.R.L. unit, actuators and power supply units like compressor and pumps. Designation of the directional control valve like 3/2, 4/2,5/2 and so on. Designation of the actuators like single acting acting cylinders, rotary actuators etc.
- 2. Lecture 2: Design of basics circuits in pneumatics like operation of single acting actuators by using manually operated 3/2 valve. Design of operation of double acting cylinder using

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- different valves in both hydraulics and pneumatics operation. Design of meter in and meter out circuits for hydraulics operation and simulate it on the software.
- 3. Lecture 3: Design of sequencing circuits using shift register and cascade method like the sequence A+B+B-A- and A+B+A-B- also A+B+ delay B-A- and A+B+ delay A-B-Design the counter balance circuit, regeneration circuits. Simulations of all these circuits on the simulation software.
- 4. Lecture 4: Design of the sequencing circuits with and without grouping and simulation on the software. Design of electro pneumatics circuit using direct and indirect methods. Design of electro pneumatic circuits by single solenoid directional control valve and double solenoid directional control valve. Design of the electropneumatic circuit by the following sequence A+B+A-B- and A+B+B-A-.
- 5. Lecture 5: Design of electro pneumatic circuit using 2 relay and 4 relay for the following sequence A+B+A-B- and A+B+B-A-. Also, design of the electropneumaic and electro hydraulic circuits by using delay on and delay off relay for the following sequence A+B+delay B-delayA-, delayA-delayB-A+B+. Discussion on the different circuits and finally we have taken Test and asses them.

Conclusion:

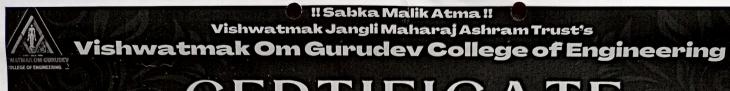
After completion, this workshop we conclude that student gets more benefits about this workshop and they are more familiar about the Hydraulic & Pneumatic Circuit. In market scenario the extra skills are require for getting good job so that software knowledge is most important factor of industry.

We are very thankful to our Head of Department for such giving a good support as well as we are also special thankful to our President sir and Principal Sir that he was continuously guiding and supporting to us.

We are also thankful the people who gives direct and indirect support to make successful workshop. The students are very enthusiastic to learn the software and they are ready to do more study in this kind of workshop.



Add On Program On Fluid Simplation, using Simis Roftware, 20/08/2018-25/08/2018.



CERTIFICATE of Completion

This is to certify that
Mr./Ms PATIL VIDESH RAVINDRA

of Class SE/TE/BE Mechanical Engineering has successfully completed the ADD On Course titled "Fluid Simulation Using Sims Software" organised by Mechanical Engineering Department from 20/08/2018 to 25/08/2018.

Course Instructor

Program Coordinator





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Course Instructor Program Coord



This is to certify that Mr./Ms SINGH AMIT SANJAY

of Class SE/TE/BE Mechanical Engineering has successfully completed the ADD On Course titled "Fluid Simulation Using Sims Software" organised by Mechanical Engineering Department from 20/08/2018 to 25/08/2018.

Course Instructor

Program Coordinator

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This is to certify that

Mr./Ms DOHALE PANKAJ KISAN

of Class SE/TE/BE Mechanical Engineering has successfully completed the **ADD On Course** titled "Fluid Simulation Using Sims Software" organised by Mechanical Engineering Department from 20/08/2018 to 25/08/2018.

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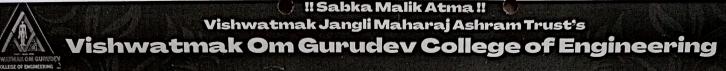
Course Instructor



Program Coordinator







CERTIFICATE of Completion

This is to certify that Mr./Ms SHAIKH RIZVAN RAMZAN

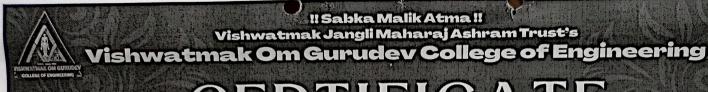
of Class SE/TE/BE Mechanical Engineering has successfully completed the ADD On Course titled "Fluid Simulation Using Sims Software" organised by

Mechanical Engineering Department from 20/08/2018 to 25/08/2018.

Program Coordinator

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Course Instructor



CERTIFICATE of Completion

This is to certify that

Mr./Ms THAKUR BIRISH RAJKUMAR

of Class SE/TE/BE Mechanical Engineering has successfully completed the ADD On Course titled "Fluid Simulation Using Sims Software" organised by Mechanical Engineering Department from 20/08/2018 to 25/08/2018.

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Course Instructor

Program Coordinator

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