Workshop On Fluid Simulation Using Sims Software

5 Day Certified Workshop

20th -25th August 2018

Organized By

MECHANICAL DEPARTMENT

VISHWATMAK OM GURUDEV COLLEGE OF ENGINEERING

VISHWATMAK OM GURUDEV COLLEGE OF ENGINEEIRNG

[Affilliated to MSBTE, Mumbai, Approved by AICTE, New Delhi & DTE, M.S.]
At- Mohili, 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 steady-state flow.
- Perform fully coupled conjugate heat transfer (CHT) simulations.
- Postprocess flow simulation results.

Contact Us

Phone:
7218663456

www.vishwatmakengg.in

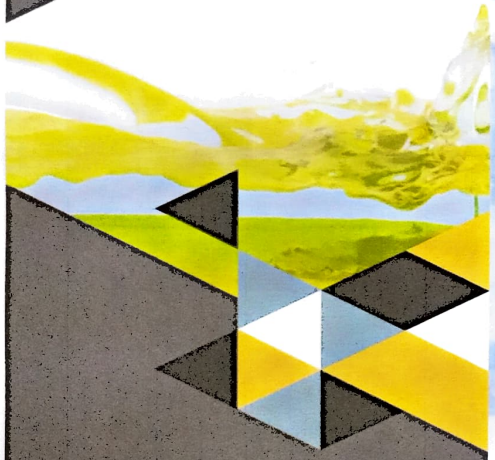
Address:
H742+63R, Maharashtra State Highway 79, Mohili, Mohili Maharashtra 421601

Why Fluid Simulation

- 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 multiphase simulation, among many others
- Learn about the various types of CFD simulations and the advancement of this technology in industrial applications such as oil and gas, aerospace, automotive, electric vehicles, energy generation and HVAC.

VISHWATMAK OM GURUDEV COLLEGE OF ENGINEERING Mohili-Agtai Tal. Shahapur Dist.-Thane

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 steady-state 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 hydraulics 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 Hrs.)**
   - 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)**

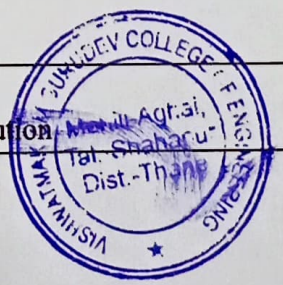
Workshop on Fluid Simulation using Sim software

SYLLABUS/ COURSE CONTENT

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

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



!!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

ADD ON Attendance

Sr No.	Students Name	20/08/2018		21/08/2018		22/08/2018		23/08/2018		24/08/2018		25/08/2018		Remark
		Session I	Session II	Session I	Session II	Session I	Session II	Session I	Session II	Session I	Session II	Session I	Session II	
1	PATIL DIPTI RAMESH	D.Patil	D.Patil	D.Patil	D.Patil	D.Patil	D.Patil	D.Patil	AB	D.Patil	D.Patil	D.patil		
2	PATIL RAVINA SHASHIKANT	R.Patil	R.Patil	R.Patil	R.Patil	R.Patil	R.Patil	R.Patil	R.Patil	R.Patil	R.Patil	R.Patil		
3	BHOIR ANIKET ANIL	Abhoir	Abhoir	Abhoir	AB	Abhoir	Abhoir	ABhoir	Abhoir	A.Bhoir	A.Bhoir	A.bhoir		
4	BHERE AKSHAY SURESH	A.S.Bhere	A.S.bhere	A.S.bhere	A.S.bhere	A.S.bhere	A.S.bhere	A.S.bhere	A.S.bhere	A.S.bhere	A.S.bhere	A.S.bhere		
5	FASALE SHREEKANT BHIVA	Sfasale	Sfasale	Sfasale	Sfasale	Sfasale	Sfasale	Sfasale	Sfasale	Sfasale	Sfasale	Sfasale		
6	KHADE SANKET KANTILAL	S.khade	S.khade	S.khade	S.khade	S.khade	AB	S.khade	S.khade	S.khade	S.khade	S.khade		
7	JOSHI OMKAR VIJAY REKHA	Tomakar	Tomakar	Tomakar	Tomakar	Tomakar	Tomakar	Tomakar	Tomakar	Tomakar	Tomakar	Tomakar		
8	SALUNKE DINESH DASHRATH	D.salunke	D.salunke	D.salunke	D.salunke	D.salunke	D.salunke	D.salunke	D.salunke	D.salunke	D.salunke	D.salunke		
9	BHALERAO RAJ VINAYAK	R.V.Bhalerao	AB	R.Bhalerao	AB	R.V.Bhalerao	AB	R.V.Bhalerao	AB	R.V.Bhalerao	AB	AB		
10	GHAGAS VISHAL SURESH	G.Vishal	G.Vishal	G.Vishal	G.Vishal	G.Vishal	G.Vishal	G.Vishal	G.Vishal	G.Vishal	G.Vishal	G.Vishal		
11	KONDLEKAR KARAN	(KK)	(KK)	(KK)	(KK)	(KK)	(KK)	(KK)	(KK)	(KK)	(KK)	(KK)		
12	AGIWALE VISHAL RAVINDRA	V.agiwale	V.agiwale	V.agiwale	V.agiwale	V.agiwale	V.agiwale	V.agiwale	V.agiwale	V.agiwale	V.agiwale	V.agiwale		
13	BHOIR DINESH LAHU VIMAL	D.bhoir	D.bhoir	D.bhoir	D.bhoir	D.bhoir	D.bhoir	D.bhoir	D.bhoir	D.bhoir	D.bhoir	D.bhoir		
14	PAWAR NIKET SUHAS	N.Pawar	N.Pawar	N.Pawar	N.Pawar	N.Pawar	N.Pawar	N.Pawar	AB	N.Pawar	N.Pawar	N.Pawar		
15	BHOIR SAGAR BAJIRAO	S.bhoir	S.bhoir	S.bhoir	S.bhoir	S.bhoir	S.bhoir	S.bhoir	S.bhoir	S.bhoir	S.bhoir	S.bhoir		
16	SHAIKH RIZVAN RAMZAN	R.R.S.	R.R.S.	R.R.S.	R.R.S	R.R.S.	AB	R.R.S	R.R.S.	R.R.S	R.R.S	R.R.S.		
17	WAGH PRADEEP GOVIND	P.wagh	P.wagh	P.wagh	P.wagh	P.wagh	P.wagh	P.wagh	P.wagh	P.wagh	P.wagh	P.wagh		
18	HARAD MAYUR ANANTA	M.harad	M.harad	M.harad	M.harad	M.harad	M.harad	M.harad	AB	M.harad	M.harad	M.harad		
19	HARAD PRATHAMESH	P.harad	P.harad	P.harad	P.harad	P.harad	P.harad	P.harad	AB	P.harad	P.harad	P.harad		
20	CHAUDHARI DINESH	D.chaudhari	D.chaudhari	D.chaudhari	D.chaudhari	D.chaudhari	D.chaudhari	D.chaudhari	AB	D.chaudhari	D.chaudhari	D.chaudhari		
21.	MAHALE ANIKET ANKUSH	M.aniket	M.aniket	M.aniket	M.aniket	M.aniket	M.aniket	M.aniket	M.aniket	M.aniket	M.aniket	M.aniket		
22	PATIL SIDDESH PRABHAKAR	S.patil	S.patil	S.patil	S.patil	S.patil	S.patil	S.patil	S.patil	S.patil	S.patil	S.patil		
23	CHAUDHARI KALPESH	K.chaudhary	AB	K.chaudhary	AB	K.chaudhary	AB	AB	K.chaudhary	AB	K.chaudhary	AB		
24	ADHIKARI SWAPNIL TANAJI	S.swapnil	S.swapnil	S.swapnil	S.swapnil	S.swapnil	S.swapnil	S.swapnil	S.swapnil	S.swapnil	S.swapnil	S.swapnil		
25	AMODE MAKRAND ANIL	M.amode	M.amode	M.amode	M.amode	M.amode	M.amode	M.amode	M.amode	M.amode	M.amode	M.amode		
26	PATIL KETAN NARESH	K.patil	K.patil	K.patil	K.patil	K.patil	K.patil	K.patil	K.patil	K.patil	K.patil	K.patil		
27	PATIL NIKHIL SUBHAS	N.patil	N.patil	N.patil	N.patil	N.patil	N.patil	N.patil	AB	N.patil	N.patil	N.patil		
28	PATIL NIVRUTTI	N.patil	N.patil	N.patil	N.patil	N.patil	N.patil	N.patil	N.patil	N.patil	N.patil	N.patil		
29	SHELAR KEVAL RAVINDRA	K.shelar	K.shelar	K.shelar	K.shelar	K.shelar	K.shelar	K.shelar	K.shelar	K.shelar	K.shelar	K.shelar		

30	SONAVANE RAHUL KAILAS													
31	THAKARE ABHISHEKH													
32	JADHAV VAIBHAV MOHAN													
33	GOTARNE GAURAV						AB							
34	GHARAT TEJAS MOHAN													
35	GHARAT YATIN LAXMAN													
36	PANDIT PRASHANT BALU													
37	DALVI SHWETA RAJESHAPPA				AB									
38	DALAL SAMIR YASHWANT					AB								
39	DALVI ROSHAN DATTATRAY													
40	VISHE AKSHAY MAHENDRA						AB							
41	DALVI KAMINI BHAGWAN													
42	SAHANE VAIBHAV GAVARAM						AB							
43	PATIL VIDESH RAVINDRA									AB				
44	THAKRE ANIL MARUTI						AB							
45	GAIKAR MANOHAR TATU							AB						
46	BANSODE ADIT SANJAY					AB								
47	KHARIK VICKY VISHWANATH							AB						
48	NICHIT TEJAS SANTOSH						AB							
49	MARADE RUPESH									AB				
50	AHIRE RAJ SURESH PUSHPA							AB						
51	MORE JAYESH SUNIL													
52	SONAVALE SADHANA													
53	MORE SHUBHAM PRAVIN													
54	PATIL HARSHAL KAMLAKAR													
55	SANDE PRAJVAL VASANT									AB				
56	PAWAR AKSHAY RAJENDRA													
57	BHARULE DURGESH RAJESH					AB								
58	VEKHANDE PRASHANT									AB				
59	THAKUR BIRISH RAJKUMAR					AB								
60	SAWANT VISHANT ARUN								AB					
61	YADAV ROHIT BAJIRAO													
62	SHELKE SUNIL SHANKAR													
63	LATE CHETAN SUNIL													
64	DOHALE PANKAJ KISAN						AB		AB					
65	SINGH AMIT SANJAY													

Program Coordinator

HOD

!!Sabka Malik Atma!!

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

VISHWATMAK OM GURUDEV COLLEGE OF ENGINEERING Mohili-Agtai, Tal. Shahapur Dist.-Thane

HOD

!! 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 double 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

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 Simulation using Sims Software,20/08/2018-25/08/2018.

!! Sabka Malik Atma !!

Vishwatmak Jangli Maharaj Ashram Trust's

Vishwatmak Om Gurudev College of Engineering

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 | HOD | Principal

VISHWATMAK OM GURUDEV COLLEGE OF ENGINEERING Mouli Nagar Tal. Shahapur Dist. Thane

!! Sabka Malik Atma !!

Vishwatmak Jangli Maharaj Ashram Trust's

Vishwatmak Om Gurudev College of Engineering

CERTIFICATE

of Completion

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

HOD

Principal

VISHWATMAK OM GURUDEV COLLEGE OF ENGINEERING Mouli-Agiwali Tal. Shahapur Dist. Thane

!! Sabka Malik Atma !!

Vishwatmak Jangli Maharaj Ashram Trust's

Vishwatmak Om Gurudev College of Engineering

CERTIFICATE

of Completion

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.

Course Instructor | Program Coordinator | HOD | Principal

VISHWATMAK OM GURUDEV COLLEGE OF ENGINEERING Mouli-Agiwal, Tal. Shahapur, Dist. Thane

!! Sabka Malik Atma !!

Vishwatmak Jangli Maharaj Ashram Trust's

Vishwatmak Om Gurudev College of Engineering

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.

Course Instructor | Program Coordinator | HOD | Principal

VISHWATMAK OM GURUDEV COLLEGE OF ENGINEERING Mohili-Agrai, Tal.-Shahapur Dist.-Thane

!! Sabka Malik Atma !!

Vishwatmak Jangli Maharaj Ashram Trust's

Vishwatmak Om Gurudev College of Engineering

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.

Course Instructor | Program Coordinator | HOD | Principal