

## Virtual Lab for Process Modelling and Simulation Laboratory

<b>Virtual lab</b>	<b>30 Hrs</b>
Introduction and importance of virtual lab.	5 Hrs
Aim, theory, procedure and simulation to design: Shell and tube heat exchanger, Evaporator, Double pipe heat exchanger.	15 Hrs
Simulation of absorption column and flash separator.	10 Hrs
<b>Reference/ Manual/ Software</b>	
<ol style="list-style-type: none"> <li>1. Peter Harriott, McCabe and Smith "Unit Operations of Chemical Engineering" 7th edition, McGraw Hill Education; 2017, ISBN: 9339213238.</li> <li>2. Amiya K. Jana, "Chemical Process Modeling and Computer Simulation", 2nd Edition, Prentice Hall of India Pvt. Ltd, New Delhi, 2014.</li> <li>3. Babu B.V, "Process Plant Simulation", 1st Edition, Oxford University Press, New Delhi, 2004.</li> <li>4. Luyben W.L, "Process Modeling, Simulation and Control for Chemical Engineers", 2nd Edition, Tata McGraw Hill Publishing Company Ltd, New York, 1990.</li> </ol>	
<b>Link for Virtual lab</b>	
<ol style="list-style-type: none"> <li>1. Shell and tube heat exchanger – Link: <a href="http://123.255.251.250:8091/cevlab/ex1/">http://123.255.251.250:8091/cevlab/ex1/</a></li> <li>2. Evaporator, Link: <a href="http://123.255.251.250:8091/cevlab/ex2/">http://123.255.251.250:8091/cevlab/ex2/</a></li> <li>3. Double pipe heat exchanger, Link: <a href="http://123.255.251.250:8091/cevlab/ex3/">http://123.255.251.250:8091/cevlab/ex3/</a></li> <li>4. Absorption column, Link: <a href="http://123.255.251.250:8091/cevlab/ex4/">http://123.255.251.250:8091/cevlab/ex4/</a></li> <li>5. Flash Separator, Link: <a href="http://123.255.251.250:8091/cevlab/ex5/">http://123.255.251.250:8091/cevlab/ex5/</a></li> </ol>	
<b>Course Outcomes:</b>	
<p>After completing the course, the student will be able to:</p> <ul style="list-style-type: none"> <li>• Virtual laboratory is a media that can provide direct experimental visualizations, interactive virtual environment, and practical experimentation, to do experiments more efficiently, and be able to save on purchasing experimental tools.</li> <li>• Learning by using a virtual laboratory can also be done anywhere and anytime without taking the class lessons.</li> <li>• Virtual labs have a positive effect on improving problem-solving skills, critical thinking, creative, conceptual understanding and science process skills.</li> </ul>	



**NANDHA**  
**ENGINEERING COLLEGE, Erode - 52.**  
**(Autonomous)**



## DEPARTMENT OF CHEMICAL ENGINEERING

### ORGANISING COMMITTEE

#### Chief Patrons

**Thiru. V. Shanmugan**

Chairman, Sri Nandha Educational Trust

**Thiru. S. Nandhakumar Pradeep**

Secretary, Sri Nandha Educational Trust

**Thiru. S. Thirumoorthi**

Secretary, Sri Nandha Educational Institutions

#### Patrons

**Dr.N.Rengarajan, Principal**

Nandha Engineering College

**Dr.J.Senthil, Director**

Nandha Tech Campus

#### Convener

**Dr. N. Subramanian**

Associate Professor & Head,  
Department of Chemical Engineering

#### Coordinator

**Ms. S. Keerthika M.Tech,**

Assistant Professor / Chemical Engineering

#### Department Association Office Bearers

##### Secretary

**Mr. Rajesh Kumar S** IV – B.Tech. Chemical

##### Treasurer

**Mr. Krishna Prasat M** IV – B.Tech. Chemical

##### Joint Secretary

**Ms. Subasini R** III – B.Tech. Chemical

##### Joint Treasurer

**Mr. Kennedy Diwakar** III – B.Tech. Chemical

#### Executive Committee Members

**Mr. Saravanan A** IV – B.Tech. Chemical

**Ms. Kanimozhi C** IV – B.Tech. Chemical

**Mr. Yuvaraj.S** IV – B.Tech. Chemical

**Mr. Arun Kumar T M** IV – B.Tech. Chemical

**Mr. Prakadesh U** III – B.Tech. Chemical

**Mr. Adrash S** III – B.Tech. Chemical

**Ms. Bhavani M** II – B.Tech. Chemical

**Mr. Ashok A** II – B.Tech. Chemical

**Mr. Hakkien S** II – B.Tech. Chemical

**Mr. Balashanmugam K** II – B.Tech. Chemical

## INVITATION

The Management, Principal, Faculty & Student members of  
Chemical Engineering Department

Nandha Engineering College

&

IChE-NEC Student Chapter

Organizes

**VALUE ADDED COURSE**

On

**Virtual lab for Process Modelling and  
Simulation Laboratory**

*Resource Person*

**Mr. K. Kamalahasan**

Director

Fermion Energy & Engineering Solutions Pvt.Ltd  
Coimbatore

**Date : Feb 18 , 19 , 25, 26 - 2023**

**Time: 9:00 am to 5:00 pm**

**Venue: Chemical Engineering Computer Center**

#### Co-Convenors

**Mr. K. Rajasekaran AP / Chemical**

**Mr. B. Vinoth Kumar AP / Chemical**

**Ms. S. Keerthika AP / Chemical**

#### Convener

**Dr. N. Subramanian**

**HoD / Chemical**

#### Director

**Dr. J. Senthil**

**Nandha tech Campus**

#### Principal

**Dr. N. Rengarajan**

**Nandha Engineering College**



NANDHA ENGINEERING COLLEGE, ERODE - 52.

(Autonomous)

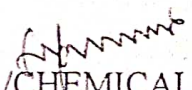
DEPARTMENT OF CHEMICAL ENGINEERING

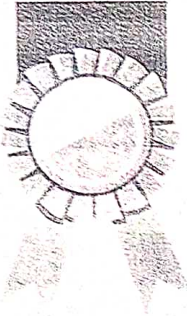
BATCH 2020-2024 (Academic Year 2022-23)

Value Added Course - Students Name List

Virtual Lab for Process Modelling and Simulation Laboratory

S.NO	REGISTER NUMBER	NAME OF THE STUDENT
1	20CH001	ABIN RAJ D
2	20CH002	AKASH G
3	20CH003	DHANUSH A S
4	20CH004	ENBARAJAN M
5	20CH005	GNANAVEL P
6	20CH006	GUNALAN M
7	20CH007	HARIHARAN M
8	20CH008	JAYANTH S
9	20CH009	JEEVITHA C
10	20CH011	KISHORE V
11	20CH012	KRISHNAPRASATH M
12	20CH014	MATHANKUMAR K
13	20CH017	PABINESH
14	20CH018	PAVITHRA R
15	20CH019	PRAKADESH U
16	20CH023	SANJAY R
17	20CH025	SANTHOSHKUMAR V
18	20CH026	SUBASINI R
19	20CH028	VENGADANARASIMMAN P
20	20CH029	VITHYASAGAR B
21	20CHL06	BALU K
22	20CHL07	DENISCROSS D
23	20CHL12	GOKUL G
24	20CHL13	GOWTHAM P
25	20CHL14	HARIHARAN K
26	20CHL15	KENNEDY DIWAKAR J
27	20CHL16	MURALHIDHARAN A
28	20CHL17	PALANIAPPAN K
29	20CHL23	RAJKUMAR D
30	20CHL24	SABIN N
31	20CHL30	VUTUKURU BHARATH

  
HOD /CHEMICAL



# Nandha Engineering College

(An Autonomous Institution Approved by AICTE, New Delhi  
Affiliated to Anna University, Chennai)  
Accredited by NAAC with A+ Grade  
Erode-638 052, Tamil Nadu. [www.nandhaengg.org](http://www.nandhaengg.org)

## Department of Chemical Engineering

Supported by



This is to certify that Dr./Prof./Mr./Ms./Mrs. GOKUL G of  
Nandha Engineering College completed an Value added Course on **Virtual lab for Process  
Modelling and Simulation Laboratory** organized by Department of Chemical Engineering &  
IICHE-NEC Students Chapter, held on **18, 19, 25, and 26 February 2023** at the Department of  
Chemical Engineering, Nandha Engineering College, Erode.

Ms.S.Keerthika  
Coordinator

Dr.N.Subramanian  
Associate Professor & Head

Dr.N.Rengarajan  
Principal



NANDHA ENGINEERING COLLEGE, ERODE - 52.

(Autonomous)

DEPARTMENT OF CHEMICAL ENGINEERING

BATCH 2019-2023 (Academic Year 2022-23)

Value Added Course - Students Name List

Virtual Lab for Process Modelling and Simulation Laboratory

S.NO	REGISTER NUMBER	NAME OF THE STUDENT
1	19CH001	AKASH T
2	19CH004	DEVALINGAM M
3	19CH005	DINESH M
4	19CH006	GOPINATH N
5	19CH007	GOWTHAM C
6	19CH008	GOWTHAMAN V
7	19CH009	HARIHARAN A
8	19CH010	HARIHARAN B
9	19CH011	HARIHARAN P
10	19CH013	JEEVA J
11	19CH017	KRISHINAN S
12	19CH023	PRAVEEN T
13	19CH024	RAGHURAMAN B
14	19CH026	RANJITHKUMAR M
15	19CH027	SABARIRAJA V
16	19CH029	SOORYA S
17	19CH030	SRIHARAN M
18	19CH034	VIJAYA RAGAVAN A
19	19CH035	VIJAYANAND A
20	19CH037	WASIM AKRAM M
21	19CHL01	AKILESHWARAN A
22	19CHL09	RAJARAAJESHWARAN K
23	19CHL10	SANAKKIYA M
24	19CHL11	SANJAY R
25	19CHL13	SIVAPRAKASH C
26	19CHL14	SIVASUDARMANI T
27	19CHL15	VINOTHKUMAR S
28	19CHL17	ABHIJITH A
29	19CHL19	ANDROOSE A
30	19CHL20	BASIL SAJU

  
HOD / CHEMICAL



# Nandha Engineering College

(An Autonomous Institution Approved by AICTE, New Delhi)

Affiliated to Anna University, Chennai)

Accredited by NAAC with A+ Grade

Erode-638 052, Tamil Nadu. [www.nandhaengg.org](http://www.nandhaengg.org)

## Department of Chemical Engineering

Supported by



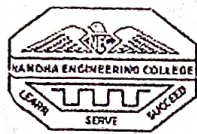
This is to certify that Dr./Prof./Mr./Ms./Mrs. DINESH M of **Nandha Engineering College** attended the Value Added Course on **Virtual lab for Process Modelling and Simulation Laboratory** organized by Department of Chemical Engineering & IChE-NEC Students Chapter, held on **18, 19, 25, and 26 February 2023** at the Department of Chemical Engineering, Nandha Engineering College, Erode.

**Ms.S.Keerthika**  
Coordinator

**Dr.N.Subramanian**  
Associate Professor & Head

**Dr.N.Rengarajan**  
Principal

<b>Chemical Process Analysis and Optimization using DWSIM</b>	
<b>Total hours : 30 Hrs</b>	
<b>UNIT I : Process Simulation and DWSIM</b>	<b>5 Hrs</b>
Introduction to process simulation and DWSIM. Thermodynamic models and unit operations. Setting up data for model, compound selection, property package, selection of streams and understanding the properties of streams. Stream conditions, selection of unit operation, simulation and result analysis	
<b>Tutorials using DWSIM</b>	<b>25 Hrs</b>
<ol style="list-style-type: none"> <li>1. Creating a flow sheet</li> <li>2. Calculating Bubble point and Dew point</li> <li>3. Creating a binary phase envelope</li> <li>4. Creating a Distillation column</li> <li>5. Creating a Absorption column</li> <li>6. Creating chemsep Distillation column</li> <li>7. Creating a conversion reactor</li> <li>8. Creating plug flow reactor</li> <li>9. Styrene production</li> <li>10. Natural Gas plant Modeling</li> </ol>	
<b>Lecture: 5, Practical: 25 Total: 30</b>	
<b>Reference/ Manual/ Software:</b>	
1	Treybal R. E., "Mass Transfer Operations", 3rd Edition. McGraw Hill Book Co., New York, 1981.
2	Levenspiel O., —Chemical Reaction EngineeringI, 4th Edition, Wiley India Pvt. Ltd., New Delhi, 2009.
3	DWSIM open source software: <a href="https://dwsim.inforside.com.br/new/index.php/download/">https://dwsim.inforside.com.br/new/index.php/download/</a> Link: <a href="https://dwsim.inforside.com.br/new/index.php/download/">https://dwsim.inforside.com.br/new/index.php/download/</a> Runs on 32/64-bit Windows XP or newer, 64-bit Linux, macOS and Raspberry Pi 2 or newer.
<b>Course Outcomes:</b>	
After completing the course, the student will be able to:	
<ul style="list-style-type: none"> <li>• understand the open-source software DWSIM.</li> <li>• enables to manage the material streams and design a schematic representation of the entire mechanism with the help of object palette.</li> <li>• describe the concepts of simulations using simulators.</li> </ul>	



**NANDHA**  
**ENGINEERING COLLEGE, Erode - 52.**  
**(Autonomous)**



## DEPARTMENT OF CHEMICAL ENGINEERING

### ORGANISING COMMITTEE

#### Chief Patrons

**Thiru. V. Shanmugan**

Chairman, Sri Nandha Educational Trust

**Thiru. S. Nandhakumar Pradeep**

Secretary, Sri Nandha Educational Trust

**Thiru. S. Thirumoorthi**

Secretary, Sri Nandha Educational Institutions

#### Patrons

**Dr. N. Rengarajan, Principal**

Nandha Engineering College

**Dr. J. Senthil, Director**

Nandha Tech Campus

#### Convener

**Dr. N. Subramanian**

Associate Professor & Head,  
Department of Chemical Engineering

#### Coordinator

**Ms. S. Keerthika M.Tech,**  
Assistant Professor / Chemical Engineering

#### Department Association Office Bearers

##### Secretary

**Mr. Rajesh Kumar S** IV – B.Tech. Chemical

##### Treasurer

**Mr. Krishna Prasat M** IV – B.Tech. Chemical

##### Joint Secretary

**Ms. Subasini R** III – B.Tech. Chemical

##### Joint Treasurer

**Mr. Kennedy Diwakar** III – B.Tech. Chemical

#### Executive Committee Members

**Mr. Saravanan A** IV – B.Tech. Chemical

**Ms. Kanimozhi C** IV – B.Tech. Chemical

**Mr. Yuvaraj S** IV – B.Tech. Chemical

**Mr. Arun Kumar T M** IV – B.Tech. Chemical

**Mr. Prakadesh U** III – B.Tech. Chemical

**Mr. Adrash S** III – B.Tech. Chemical

**Ms. Bhavani M** II – B.Tech. Chemical

**Mr. Ashok A** II – B.Tech. Chemical

**Mr. Hakkiem S** II – B.Tech. Chemical

**Mr. Balashanmugam K** II – B.Tech. Chemical

## INVITATION

The Management, Principal, Faculty & Student members of  
Chemical Engineering Department

Nandha Engineering College

&

IChE-NEC Student Chapter

Organizes

### VALUE ADDED COURSE

On

**Chemical Process Analysis and Optimisation**

**using DWSIM**

*Resource Person*

**Mr. K. Kamalahasan**

Director

Fermion Energy & Engineering Solutions Pvt.Ltd

Coimbatore



**Date : NOV 19,20,26,27 - 2022**

**Time: 9:00 am to 5:00 pm**

**Venue: Chemical Engineering Computer Center**

#### Co-Convenors

**Mr. K. Rajasekaran AP / Chemical**

**Mr. B. Vinoth Kumar AP / Chemical**

**Ms. S. Keerthika AP / Chemical**

#### Convener

**Dr. N. Subramanian**

**HoD / Chemical**

#### Director

**Dr. J. Senthil**

**Nandha tech Campus**

#### Principal

**Dr. N. Rengarajan**

**Nandha Engineering College**





NANDHA ENGINEERING COLLEGE, ERODE - 52.

(Autonomous)

DEPARTMENT OF CHEMICAL ENGINEERING

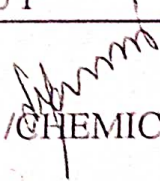
BATCH 2019-2023 (Academic Year 2022-23)

Value Added Course - Students Name List

Chemical Process Analysis and Optimization using DWSIM

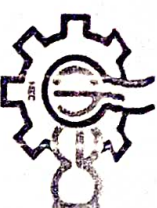
S.NO	REGISTER NUMBER	NAME OF THE STUDENT
1	19CH001	AKASH T
2	19CH003	CHIRANJEVI ANISH P
3	19CH004	DEVALINGAM M
4	19CH005	DINESH M
5	19CH006	GOPINATH N
6	19CH007	GOWTHAM C
7	19CH008	GOWTHAMAN V
8	19CH009	HARIHARAN A
9	19CH010	HARIHARAN B
10	19CH011	HARIHARAN P
11	19CH013	JEEVA J
12	19CH015	KARTHIK S
13	19CH017	KRISHNAN S
14	19CH021	NAVEEN KUMAR K M
15	19CH022	NISHWIN SAJEEV
16	19CH023	PRAVEEN T
17	19CH024	RAGHURAMAN B
18	19CH025	RAJESH KUMAR S
19	19CH026	RANJITHKUMAR M
20	19CH027	SABARIRAJA V
21	19CH029	SOORYA S
22	19CH030	SRIHARAN M
23	19CH031	SUBASH P
24	19CH034	VIJAYA RAGAVAN A
25	19CH035	VIJAYANAND A
26	19CH037	WASIM AKRAM M
27	19CH038	YOKESH V
28	19CHL01	AKILESHWARAN A
29	19CHL09	RAJARA AJESHWARAN K
30	19CHL10	SANAKKIYA M
31	19CHL11	SANJAY R
32	19CHL12	SELVAPRAVIN D
33	19CHL13	SIVAPRAKASH C
34	19CHL14	SIVASUDARMANI T

35	19CHL15	VINOTHKUMAR S
36	19CHL17	ABHIJITH A
37	19CHL19	ANDROOSE A
38	19CHL20	BASIL SAJU
39	19CHL21	SIBICHANDRU P

  
HOD /CHEMICAL



# Nandha Engineering College



(An Autonomous Institution Approved by AICTE, New Delhi and  
Affiliated to Anna University, Chennai)  
Accredited by NAAC with A+ Grade  
Erode-638 052, Tamil Nadu. [www.nandhaengg.org](http://www.nandhaengg.org)

## Department of Chemical Engineering

Supported by



This is to certify that Dr./Prof./Mr./Ms./Mrs. \_\_\_\_\_

SOORYA S

of **Nandha Engineering College** completed an Value added Course on **Chemical Process Analysis and Optimization using DWSIM** organized by Department of Chemical Engineering & IICHe-NEC Students Chapter, held on **19,20,26,27 November 2022** at the Department of Chemical Engineering, Nandha Engineering College, Erode.

Ms.S.Keerthika  
Coordinator

Dr.N.Subramanian  
Associate Professor & Head

Dr.N.Rengarajan  
Principal

## Simulation and Optimization of Cross-Country Pipeline

Total hours : 30 Hrs

<b>UNIT I : Introduction to ASME and Line Sizing Criteria, Line Sizing Calculation and PSIM Software</b>	<b>5 Hrs</b>
--	--------------

Introduction to ASME 31.3, 31.4 & 31.8, On & off plot line sizing criteria for different stream: Liquid and gas. Line sizing calculation (Python /Excel) based on Darcy equation & other correlations and steam line sizing. Introduction to PSIM software (open source), Case study.

<b>List of Experiments</b>	<b>25 Hrs</b>
----------------------------	---------------

1. Simulation for gas phase pipe line
2. Simulation for liquid phase pipe line.
3. Simulation for Steam line pipe sizing
4. Simulation for two phase fluid flowing in carbon steel pipe line.

**Lecture: 5, Practical: 25 Total: 30**

### Reference/ Manual/ Software:

- |   |   |
|---|---|
| 1 | Coulson, J.M.; Richardson, J.F.; Backhurst, J.R.; Harker, J.H. "Coulson and Richardson's Chemical Engineering-Fluid Flow, Heat Transfer and Mass Transfer" Volume-1, 6 <sup>th</sup> edition, Publisher: Elsevier Science, ISBN: 9788181473868.   |
| 2 | Peter Harriott, McCabe and smith "Unit Operations of Chemical Engineering" 7th edition, McGraw Hill Education; 2017, ISBN: 9339213238.  |
| 3 | PSIM Open-source software, <a href="https://fluidflowinfo.com">https://fluidflowinfo.com</a><br><b>PSIM System Requirements</b> PSIM runs in Microsoft Windows 7, 8, or 10 either on a stand-alone PC or on a network PC, and is available as 32-bit or 64-bit software. A minimum of 500MB RAM memory is required. The program will occupy around 560MB hard disk space after installed. |

### Course Outcomes:

After completing the course, the student will be able to:

- understand the open-source software PSIM
- calculate the line sizing for different stream
- Optimize the line sizing for different stream



**NANDHA**  
**ENGINEERING COLLEGE, Erode - 52.**  
**(Autonomous)**



## DEPARTMENT OF CHEMICAL ENGINEERING

### ORGANISING COMMITTEE

#### Chief Patrons

**Thiru. V. Shanmugan**

Chairman, Sri Nandha Educational Trust

**Thiru. S. Nandhakumar Pradeep**

Secretary, Sri Nandha Educational Trust

**Thiru. S. Thirumoorthi**

Secretary, Sri Nandha Educational Institutions

#### Patrons

**Dr.N.Rengarajan, Principal**

Nandha Engineering College

**Dr.J.Senthil, Director**

Nandha Tech Campus

#### Convener

**Dr. N. Subramanian**

Associate Professor & Head,

Department of Chemical Engineering

#### Coordinator

**Ms. S. Keerthika M.Tech,**

Assistant Professor / Chemical Engineering

#### Department Association Office Bearers

##### Secretary

**Mr. Rajesh Kumar S** IV – B.Tech. Chemical

##### Treasurer

**Mr. Krishna Prasat M** IV – B.Tech. Chemical

##### Joint Secretary

**Ms. Subasini R** III – B.Tech. Chemical

##### Joint Treasurer

**Mr. Kennedy Diwakar** III – B.Tech. Chemical

#### Executive Committee Members

**Mr. Saravanan A** IV – B.Tech. Chemical

**Ms. Kanimozhi C** IV – B.Tech. Chemical

**Mr. Yuvaraj.S** IV – B.Tech. Chemical

**Mr. Arun Kumar T M** IV – B.Tech. Chemical

**Mr. Prakadesh U** III – B.Tech. Chemical

**Mr. Adrash S** III – B.Tech. Chemical

**Ms. Bhavani M** II – B.Tech. Chemical

**Mr. Ashok A** II – B.Tech. Chemical

**Mr. Hakkem S** II – B.Tech. Chemical

**Mr. Balashanmugan K** II – B.Tech. Chemical

## INVITATION

The Management, Principal, Faculty & Student members of

Chemical Engineering Department

Nandha Engineering College

&

IICHE-NEC Student Chapter

Organizes

### VALUE ADDED COURSE

On

**Simulation and Optimization of Cross –Country**

**Pipe Line Using Fluid Flow Software**

*Resource Person*

**Mr. K. Kamalahasan**

Director

Fermion Energy & Engineering Solutions Pvt.Ltd

Coimbatore



**FluidFlow**

**Date : NOV 05,06,12,13-2022**

**Time: 9:00 am to 5:00 pm**

**Venue: Chemical Engineering Computer Center**

#### Co-Convenors

**Mr. K. Rajasekaran AP / Chemical**

**Mr. B. Vinoth Kumar AP / Chemical**

**Ms. S. Keerthika AP / Chemical**

#### Convenor

**Dr. N. Subramanian**

**HoD / Chemical**

#### Director

**Dr. J. Senthil**

**Nandha tech Campus**

#### Principal

**Dr. N. Rengarajan**

**Nandha Engineering College**

**NANDHA ENGINEERING COLLEGE, ERODE - 52.****(Autonomous)****DEPARTMENT OF CHEMICAL ENGINEERING****BATCH 2019-2023 (Academic Year 2022-23)****Value Added Course - Students Name List****Simulation and Optimisation of Cross-Country Pipeline**

<b>S.NO</b>	<b>REGISTER NUMBER</b>	<b>NAME OF THE STUDENT</b>
1	19CH001	AKASH T
2	19CH003	CHIRANJEVI ANISH P
3	19CH004	DEVALINGAM M
4	19CH005	DINESH M
5	19CH006	GOPINATH N
6	19CH007	GOWTHAM C
7	19CH008	GOWTHAMAN V
8	19CH009	HARIHARAN A
9	19CH010	HARIHARAN B
10	19CH011	HARIHARAN P
11	19CH012	HARIHARAN R
12	19CH013	JEEVA J
13	19CH015	KARTHIK S
14	19CH016	KRISHNA PRASAT M
15	19CH017	KRISHNAN S
16	19CH018	MADHAVAN M
17	19CH020	NANDHAKUMAR S
18	19CH021	NAVEEN KUMAR K M
19	19CH022	NISHWIN SAJEEV
20	19CH023	PRAVEEN T
21	19CH024	RAGHURAMAN B
22	19CH025	RAJESH KUMAR S
23	19CH026	RANJITHKUMAR M
24	19CH027	SABARIRAJA V
25	19CH028	SARAVANAN A
26	19CH029	SOORYA S
27	19CH030	SRIHARAN M
28	19CH031	SUBASH P
29	19CH034	VIJAYA RAGAVAN A
30	19CH035	VIJAYANAND A
31	19CH037	WASIM AKRAM M
32	19CH038	YOKESH V

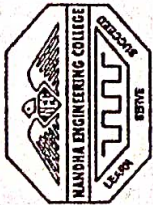
33	19CHL01	AKILESHWARAN A
34	19CHL06	JEEVITH G K
35	19CHL09	RAJARAAJESHWARAN K
36	19CHL10	SANAKKIYA M
37	19CHL11	SANJAY R
38	19CHL12	SELVAPRAVIN D
39	19CHL13	SIVAPRAKASH C
40	19CHL14	SIVASUDARMANI T
41	19CHL15	VINOTHKUMAR S
42	19CHL16	YUVARAJ V C
43	19CHL17	ABHIJITH A
44	19CHL19	ANDROOSE A
45	19CHL20	BASIL SAJU



Faculty Indheya.



HOD CHEMICAL



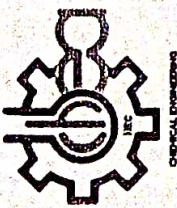
# Nandha Engineering College

(An Autonomous Institution Approved by AICTE, New Delhi)

Affiliated to Anna University, Chennai)

Accredited by NAAC with A+ Grade

Erode-638 052, Tamil Nadu. [www.nandhaengg.org](http://www.nandhaengg.org)



## Department of Chemical Engineering

Supported by



This is to certify that Dr./Prof./Mr./Ms./Mrs. SUBASH P of

**Nandha Engineering College** completed an Value added Course on **Simulation and Optimization of Cross-Country Pipe Line Using FluidFlow Software** organized by Department of Chemical Engineering & IChE-NEC Students Chapter, held on **05, 06, 12, and 13 November 2022** at the Department of Chemical Engineering, Nandha Engineering College, Erode.

**Ms.S.Keerthika**  
Coordinator

**Dr.N.Subramanian**  
Associate Professor & Head

**Dr.N.Rengarajan**  
Principal