



Jayawant Shikshan Prasarak Mandal's  
**JSPM Narhe Technical Campus**

S. No. 12/2/2 and 14/9, Narhe, Tal : Haveli, Dist.: Pune – 411041

Phone : +91 20 2460 8700, 701, 702 Email : [director@jspmntc.edu.in](mailto:director@jspmntc.edu.in) Web : [www.jspmntc.edu.in](http://www.jspmntc.edu.in)

Affiliated to Savitribai Phule Pune University. Approved by AICTE New Delhi and DTE Maharashtra.

DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



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**Prof.(Dr.)T. J.Sawant**  
D.E.E., B.E.(Electrical),Ph.D., MISTE  
Founder - Secretary

**Prof.(Dr.)M.M.Sardeshmukh**  
B.Tech (E&TC) M.Tech (E&TC),Ph.D.(Engg.)  
DIRECTOR

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1.2.1: Number of Certificate/Value added courses offered and online courses of MOOCs, SWAYAM, NPTEL etc. (where the students of the institution have enrolled and successfully completed during the last five years)

**HEI Input: 62**

**Supporting Documents as per S.O.P. :**

Institutional programme notice for Certificate/Value added programs with course modules and outcomes



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S. No. 12/2/2 and 14/9, Narhe, Tal : Haveli, Dist.: Pune – 411041

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**Institutional programme notice for Certificate/Value added programs with course modules and outcomes**

| Sr No | Name of Add on /Certificate /Value added programs offered and online MOOC programs like SWAYAM, NPTEL etc. programs offered | Course Code (if any) | Year of offering | Notice Digital Page No. | Course Module and Outcome Digital Page No. |
|-------|---|----------------------|------------------|-------------------------|--|
| 1     | Analysis of structure using ETAB's  | 23SDETAB             | 2022-2023        | 8                       | 50   |
| 2     | Introduction to programming in C  | 2022COMPCP           | 2022-2023        | 9                       | 53   |
| 3     | Finite Element Analysis using ANSYS Software  | 23MECHFEA            | 2022-2023        | 10                      | 54   |
| 4     | Data Science for Engineers  | 23ETCDSE             | 2022-2023        | 13                      | 57   |
| 5     | Personality development /Employability skills workshop  | 23MBAPD              | 2022-2023        | 14                      | 59   |
| 6     | Cloud computing   | 23MCACICC            | 2022-2023        | 15                      | 61   |
| 7     | Advanced Geomatics Engineering  | noc22-ce78           | 2022-2023        | -                       | -  |
| 8     | Remote Sensing and GIS for rural development  | noc23-ce52           | 2022-2023        | -                       | -  |
| 9     | Introduction to programming in C  |                      | 2022-2023        | -                       | -  |
| 10    | Programming In Java   | noc23-cs49           | 2022-2023        | -                       | -  |
| 11    | Remote Sensing Essentials   | noc23-ce15           | 2022-2023        | -                       | -  |
| 12    | Electronic Waste Management- issues and challenges  | NA                   | 2022-2023        | -                       | -  |
| 13    | Python for Data Science   | NA                   | 2022-2023        | -                       | -  |
| 14    | Ethical Hacking   | NA                   | 2022-2023        | -                       | -  |
| 15    | Introduction to Civil Engineering Profession  | NA                   | 2022-2023        | -                       | -  |



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|    |   |            |            |    |    |
|----|---|------------|------------|----|----|
| 16 | ETAB's- A solution for structural Design                                | 22SDETAB   | 2021-2022  | 17 | 65 |
| 17 | Advanced C++ Programming  | 22COMPCPP  | 2021-2022  | 18 | 68 |
| 18 | Project Based Analysis of Mechanical Components using ANSYS Workbench". | 22MECHFEA  | 2021-2022  | 19 | 70 |
| 19 | Machine Learning and Data Science                                       | 22ETCML    | 2021-2022  | 22 | 73 |
| 20 | Adroid Application Development  | 22MCAAAD   | 2021-2022  | 23 | 75 |
| 21 | Innovative Venture Plan   | IVP 22     | 2021-2022  | 24 | 77 |
| 22 | Digital Land Surveying And Mapping (DLS&M)                              | noc22-ce05 | 2021-2022  |    |    |
| 23 | Structural Design using ETAB's  | 20SDETAB   | 2020-2021  | 26 | 80 |
| 24 | Python Programming  | 21COMPPY   | 2020-2021  | 27 | 80 |
| 25 | Yoga for Mind   |            | 2020-2021  | 29 | 83 |
| 26 | A Certificate Course on Finite Element Analysis using ANSYS Workbench   | 21MECHFEA  | 2020-2021  | 28 | 85 |
| 27 | Data Analytics using Python   | 21ETCDAP   | 2020-2021  | 30 | 86 |
| 28 | How do we keep adding learning and experiences from Day 1 of MBA        | 21MBALE    | 2020-2021  | 31 | 92 |
| 29 | Parallel Computing  | 20MCAPC    | 2020-2021  | 32 | 94 |
| 30 | Principles of Human Resource Management                                 | noc20-mg15 | 2020-2021  |    |    |
| 31 | Data Base Management System   | noc21-cs04 | 2020-2021  |    |    |
| 32 | MATLAB Simulink for System Modeling                                     | 20COMPMT   | 2019 -2020 | 34 | 99 |



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|    |  |            |            |    |     |
|----|--|------------|------------|----|-----|
| 33 | Course on Pre-processing using Hypermesh                   | 20MECHFEA  | 2019 -2020 | 35 | 101 |
| 34 | Robotics using Arduino                                     | 20ETCRA    | 2019 -2020 | 36 | 104 |
| 35 | Soft Skill & Personality Development                       | SSPD19     | 2019 -2020 | 37 | 106 |
| 36 | Application of MATLAB in Civil Engineering                 | 20MATLAB   | 2019 -2020 | 38 | 108 |
| 37 | Red Hat Linux  | MCARH      | 2019 -2020 | 39 | 110 |
| 38 | Geotechnical Engineering Laboratory                        | noc19-ce36 | 2019 -2020 | -  | -   |
| 39 | Data Base Management System                                | noc19-cs46 | 2019 -2020 | -  | -   |
| 40 | Theory of Computation                                      | noc19-cs79 | 2019 -2020 | -  | -   |
| 41 | Programming In Java - Online                               | noc19-cs84 | 2019 -2020 | -  | -   |
| 42 | Cloud Computing - Online                                   | noc19-cs64 | 2019 -2020 | -  | -   |
| 43 | Ethical Hacking - Online                                   | noc19-cs68 | 2019 -2020 | -  | -   |
| 44 | Switching Circuits and Logic Design - Online               | noc19-cs74 | 2019 -2020 | -  | -   |
| 45 | Introduction to Internet of Things - Online                | noc19-cs65 | 2019 -2020 | -  | -   |
| 46 | Programming, Data Structures And Algorithms Using Python   | noc19-cs40 | 2019 -2020 | -  | -   |
| 47 | Robotics   | noc19-me74 | 2019 -2020 | -  | -   |
| 48 | Basics of Communications & Employability Skill Development | 19BCESD    | 2018-2019  | 41 | 113 |
| 49 | 2D and 3D Solid Modelling using AutoCad                    | 18CAD01    | 2018-2019  | 42 | 115 |
| 50 | Artificial Intelligence                                    | 19COMPAI   | 2018-2019  | 43 | 118 |
| 51 | Image Processing Using Python                              | 19ETCIP    | 2018-2019  | 44 | 120 |
| 52 | Communication and Soft Skill                               | CSS18      | 2018-2019  | 45 | 122 |



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|    |   |            |           |    |     |
|----|---|------------|-----------|----|-----|
|    |   | MCAML      | 2018-2019 | 46 | 124 |
| 53 | Machine Learning  |            |           |    |     |
| 54 | Interdisciplinary course on “Practical Finite Element Analysis using ANSYS & MATLAB | 18MECHFEA  | 2018-2019 | 47 | 126 |
| 55 | Programming in Java   | noc19-cs07 | 2018-2019 | -  | -   |
| 56 | Programming In C++  | noc19-cs10 | 2018-2019 | -  | -   |
| 57 | Introduction to Research  | noc19-ge03 | 2018-2019 | -  | -   |
| 58 | Patent Drafting for Beginners   | noc19-hs01 | 2018-2019 | -  | -   |
| 59 | IC Engines and Gas Turbines   | noc19-me10 | 2018-2019 | -  | -   |
| 60 | Product Design and Development  | noc19-me21 | 2018-2019 | -  | -   |
| 61 | Inspection and Quality Control in Manufacturing                                     | noc19-me25 | 2018-2019 | -  | -   |
| 62 | Material Science and Engineering  | noc19-mm01 | 2018-2019 | -  | -   |
| 63 | Wastewater Treatment and Recycling  | noc18-ce26 | 2018-2019 | -  | -   |
| 64 | Problem Solving through Programming in C  | noc18-cs31 | 2018-2019 | -  | -   |
| 65 | Programming in C++  | noc18-cs32 | 2018-2019 | -  | -   |
| 66 | Introduction to Programming in C  | noc18-cs33 | 2018-2019 | -  | -   |
| 67 | Programming, Data Structures and Algorithms using Python                            | noc18-cs34 | 2018-2019 | -  | -   |
| 68 | Technical english for engineers   | noc18-hs27 | 2018-2019 | -  | -   |
| 69 | Engineering Metrology   | noc18-me62 | 2018-2019 | -  | -   |



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## **Institutional program notice for Certificate/Value added courses offered**



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JSPM'S Narhe Technical Campus, Narhe, Pune-41

2022-2023



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Date- 24/01/2023

**NOTICE**

All the students are here by informed that training program on “**Analysis of structure using ETAB**” will be starting from 1<sup>st</sup> Feb 2023. The students who are interested for the training should enrolled their names to Prof. P. N. Patil

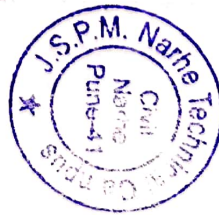
Prof. P. N. Patil

Course Coordinator

Dr. S. B. khaple

HOD

**Head**  
Dept. of Civil Engg.  
JSPM Narhe Tech. Campus,  
Narhe, Pune - 41







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**Department of Computer Engineering**

**Academic Year 2022-23**

**NOTICE**

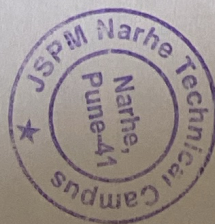
All the students of Computer department are hereby informed that “**Introduction to programming in C**” course will be starting from **1/2/23 to 28/2/23**. The students who are interested for the course should enroll their names to Ms.M.S.Namose.

*M.S.N.*

Course Coordinator  
Ms.M.S.Namose

*Dr. N.A. Auti*

HOD  
Dr.N.A.Auti



Head  
Department of Computer Engineering  
JSPM Narhe Technical Campus,  
R.S.S.O.E. & R. Narhe, Pune-411041



Jayawant Shikshan Prasarak Mandal's

# JSPM Narhe Technical Campus

## Department of Mechanical Engineering

S. No. 12/2/2 and 14/9 Narhe, Tal : Haveli, Dist.: Pune - 411041

Phone : +91 20 2460 8700, 701, 702 Fax : +91 20 2460 8888

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DATE: 05/01/2023

To,  
The Director,  
JSPM Narhe Technical Campus,  
Narhe, Pune.

Subject: - Add on course on "Finite Element Analysis using ANSYS Software"

Respected Sir,

Department of Mechanical Engineering has decided to organize Add on course on "Finite Element Analysis using ANSYS Software" for the period of 30 hours conducting from 07/01/2023. This add on course program is specially organized for Final Year students of Engineering to understand and perform analysis over mechanical engineering projects using ANSYS Workbench. The industry person will also call for lecture to discuss real life problem solved by ANSYS. This course will be helpful for students to pursue their final year projects.

Following are the objectives to organize this workshop:

- To boost practical knowledge of students.
- To understand the application and use of FEA tool for structural and thermal problems.
- To understand the use of FEA tool to solve various real life projects.
- To perform static and dynamic analysis using ANSYS and correlation with analytical / experimental results.

We hope you will consider for the same and will show the positive response to conduct this add-on course.

Thanking You,

Course Coordinator

Prof. M. A. Kumbhalkar

H. O. D.

Mech. Engg. Dept.

Head

Department of Mechanical Engineering  
JSPM Narhe Technical Campus  
R.S.S.O.E. & R. Narhe, Pune - 411041.





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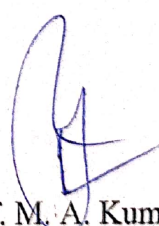


DATE: 05/01/2023

### OFFICE ORDER

It is for kind information that, Prof. A. S. Patil is assigned as Coordinator and Expert for Add on course on **“Finite Element Analysis using ANSYS Software”** has arranged from **07/01/2023**. So accept the responsibility of the course and perform accordingly to accomplish the same.



  
Prof. M. A. Kumbhalkar  
H. O. D.  
Mech. Engg. Dept.

**Head**  
Department of Mechanical Engineering  
JSPM Narhe Technical Campus  
R.S.S.O.E. & R. Narhe, Pune - 411041.





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**Department of Mechanical Engineering**

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DATE: 05/01/2023

### NOTICE

All the students of Mechanical Engineering are hereby informed that, an Add on course on “**Finite Element Analysis using ANSYS Software**” has arranged from **07/01/2023 (Saturday)**. The forum is open to understand analysis of mechanical engineering projects using ANSYS Workbench. So register your name for the course on or before **05/01/2023 (Thursday)** to Prof. A .S. Patil  
(Contact No: 7666267907)

Prof. M. A. Kumbhalkar

**H. O. D.**

**Mech. Engg. Dept.**





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Date: 27/12/2022

## Department of E & TC Engineering

### Notice

All the TE & BE students are here by informed that our department is organizing Course on **Data Science for Engineers**. It will be starting from **9/01/2023 to 13/01/2023**. The students who are interested for the training should enroll their names to Program Coordinator Mrs. A. S. Patil.

Mrs. A. S. Patil  
Program Coordinator



Dr. M. M. Sardeshmukh

H.O.D.

Dept. of Electronics & Telecom. Engg.  
JSPM Narhe Technical Campus,  
Narhe, Pune - 411041



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Date- 3 April 2023

**DEPARTMENT OF MBA**

All the students of 1<sup>st</sup> and 2<sup>nd</sup> year MBA are hereby informed to attend the training on 'personality development/Employability skills workshop' which will be held from 5<sup>th</sup> April to 8<sup>th</sup> April 2023. The program will cover various aspects of soft skills such as Effective communication, Time management, Team work and Collaboration, etc.

Time: 8.30 AM to 4.30 PM (from 5<sup>th</sup> to 8<sup>th</sup> April 2023)

Venue: JSPM NTC, A Building, VC Hall.

After successful completion of workshop, students will be issued a completion certificate.

**Note-**

Students should attend the workshop in college uniform with college ID card. Attendance is mandatory.

Course coordinator

Dean  
MBA Department  
JSPM Narhe Technical Campus  
Narhe - 411 041

Dean, MBA



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Date-2<sup>nd</sup> January 2023

**NOTICE**

All MCA 1st year students are hereby informed that the training program of "Career in cloud computing" will be starting from 6<sup>th</sup> Jan 2023 to 18<sup>th</sup> Jan 2023. The students who are interested for the training should enrolled their names to Prof. A.N.Hajare

**Prof.A.N. Hajare**

**Program Coordinator**

**Prof. Dr.S.S.Solanki**

**Dean MCA**

**Dean**

**Dept. of MCA**

**JSPM Narhe Technical Campus,  
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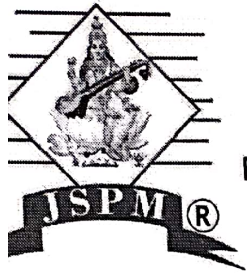
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JSPM'S Narhe Technical Campus, Narhe, Pune-41

2021-2022





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## DEPARTMENT OF CIVIL ENGINEERING

Date- 2/02/2022

### NOTICE

All the students are here by informed that training program on “ETAB’s -A Solution for Structural Design” will be starting from 14<sup>th</sup> Feb 2022. The students who are intersted for the training should enrolled their names to Prof. A.S. Jadhav

Prof. A. S. Jadhav

Program Coordinator

Dr. S. B. khaple

HOD

**Head**

Dept. of Civil Engg.  
JSPM Narhe Technical Campus,  
Narhe, Pune - 41





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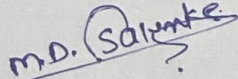
Department of Computer Engineering

Academic Year 2021-22

NOTICE

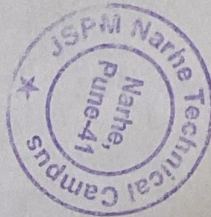
All the students of Computer department are hereby informed that "Advanced C++ Programming" course will be starting from 1/2/22 to 28/2/22. The students who are interested for the course should enroll their names to Ms. J.S. Kharat.

  
Course Coordinator  
Ms. Ms. J.S. Kharat

  
HOD

Dr. M.D. Salunke  
Head

Department of Computer Engineering  
JSPM Narhe Technical Campus,  
R.S.S.O.E. & R. Narhe, Pune-411041.





Jayawant Shikshan Prasarak Mandal's

# JSPM Narhe Technical Campus Department of Mechanical Engineering

S. No. 12/2/2 and 14/9 Narhe, Tal : Haveli, Dist.: Pune - 411041  
Phone : +91 20 2460 8700, 701, 702 Fax : +91 20 2460 8888

Affiliated to University of Pune. Approved by AICTE New Delhi and DTE Maharashtra.



DATE: 12/01/2022

To,  
The Director,  
JSPM Narhe Technical Campus,  
Narhe, Pune.

Subject: - Add on course on "Project Based Analysis of Mechanical Components using ANSYS Workbench".

Respected Sir,

Department of Mechanical Engineering has decided to organize Add on course on "Project Based Analysis of Mechanical Components using ANSYS Workbench" for the period of 16 hours conducting on every working Saturday from 15/01/2022.

This add on course program is specially organized for Final Year students of Engineering to understand and perform analysis over mechanical engineering projects using ANSYS Workbench. The industry person will also call for lecture to discuss real life problem solved by ANSYS. This course will be helpful for students to pursue their final year projects.

Following are the objectives to organize this workshop:

- To boost practical knowledge of students.
- To understand the application and use of FEA tool for structural and thermal problems.
- To understand the use of FEA tool to solve various real life projects.
- To perform static and dynamic analysis using ANSYS and correlation with analytical /experimental results.

We hope you will consider for the same and will show the positive response to conduct this add-on course.

Thanking You,

Course Coordinator



H. O. D.

Mech. Engg. Dept

Head

Department of Mechanical Engineering  
JSPM Narhe Technical Campus  
R.S.S.O.E. & R. Narhe, Pune - 411041.





Jayawant Shikshan Prasarak Mandal's

**JSPM Narhe Technical Campus**

**Department of Mechanical Engineering**

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DATE: 12/01/2022

### NOTICE

All the students of Mechanical Engineering are hereby informed that, an Add on course on “**Project Based Analysis of Mechanical Components using ANSYS Workbench**” has arranged from **15.01.2022** The forum is open to understand analysis of mechanical engineering projects using ANSYS Workbench. So register your name for the course on or before **14/01/2022** to Prof. A. S. Patil



H. O. D.

Mech. Engg. Dept.

Head

Department of Mechanical Engineering  
JSPM Narhe Technical Campus  
R.S.S.O.E. & R. Narhe, Pune - 411041.





Jayawant Shikshan Prasarak Mandal's

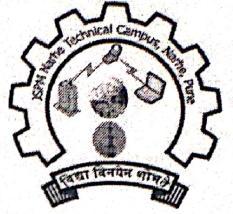
# JSPM Narhe Technical Campus

## Department of Mechanical Engineering

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DATE: 12/01/2022

### OFFICE ORDER

It is for kind information that, Prof. A. S. Patil is assigned as Coordinator and Expert for Add on course on **“Project Based Analysis of Mechanical Components using ANSYS Workbench”** has arranged from **15/01/2022**. So accept the responsibility of the course and perform accordingly to accomplish the same.



H. O. D.

Mech. Engg. Dept.

Head

Department of Mechanical Engineering  
JSPM Narhe Technical Campus  
R.S.S.O.E. & R. Narhe, Pune - 411041.





Jayawant Shikshan Prasarak Mandal's  
**JSPM Narhe Technical Campus**



S. No. 12222 and 1408, Narhe, Tal. Haveli, Dist. Pune - 411041  
Phone : +91 20 2460 8700, 701, 702 Email : director@jspmnc.edu.in Web : www.jspmnc.edu.in  
Affiliated to Savitribai Phule Pune University, Approved by AICTE New Delhi and DTE Maharashtra.  
DTE Code : 0755 PUN Code : CEGP019070 AISHE Code : C-45874

**Prof.(Dr.)T. J.Sawant**  
D. E. E., B. E. (Electrical), Ph. D., MISTE  
Founder - Secretary

**Prof.(Dr.) R.K.Lad**  
B. E. (Civil), M. E. (Env. Engrg.) Ph. D. (Engrg.)  
DIRECTOR

Date: 29/12/2021

## Department of E & TC Engineering

### Notice

All the TE & BE students are here by informed that our department is organizing Course on **Machine Learning and Data Science**. It will be starting from 3<sup>rd</sup> January 2022 to 7<sup>th</sup> January 2022. The students who are interested for the training should enroll their names to Program Coordinator Mrs. A. S. Patil.

  
Program Coordinator

Mrs. A. S. Patil



  
H.O.D.

Dr. M. M. Sardeshmukh

HEAD  
Dept. of Electronics & Telecom. Engrg  
JSPM Narhe Technical Campus,  
Narhe, Pune - 411041



Jayawant Shikshan Prasarak Mandal's  
**JSPM Narhe Technical Campus**

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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



Date-8<sup>th</sup> March 2022

NOTICE

All MCA Ist & II year students are hereby informed that training program of **Android Application Development** will be starting from 12<sup>th</sup> March 2022. The students who are interested for the training should enrolled their names to Prof S.M.Deshmukh

Prof. S.M. Deshmukh

Program Coordinator

Prof. Dr. S.S. Solanki

Dean MCA

**Dean**

Dept. of MCA  
JSPM Narhe Technical Campus,  
Narhe, Pune - 41



Jayawant Shikshan Prasarak Mandal's  
**JSPM Narhe Technical Campus**



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**Prof.(Dr.)T. J.Sawant**  
D.E.E., B.E.(Electrical),Ph.D., MISTE  
Founder - Secretary

**Prof.(Dr.) S.A.Choudhari**  
B.E.(CWM),M.E.(WRE) Ph.D.(Engg.)  
DIRECTOR

Date: 1 Jan 2022

**NOTICE**

All the 1 Year MBA students are here by informed that the training program on "Innovative Venture Plan will be starting from 6 Jan 2022. Those students who are interested the training should enrolled their names to Prof. Pratibha Rasal.

Prof. Pratibha Rasal

Program Coordinator

Dr. RK Singh

Dean MBA Dept





Jayawant Shikshan Prasarak Mandal's  
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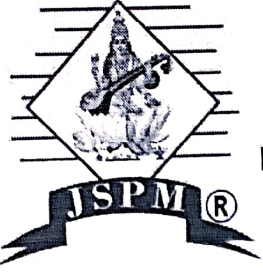


**Prof.(Dr.)T. J.Sawant**  
D.E.E., B.E.(Electrical),Ph.D., MISTE  
Founder - Secretary

**Prof.(Dr.)M.M.Sardeshmukh**  
B.Tech (E&TC) M.Tech (E&TC),Ph.D.(Engg.)  
DIRECTOR

JSPM'S Narhe Technical Campus, Narhe, Pune-41

2020-2021



# Jayawant Shikshan Prasarak Mandal's JSPM Narhe Technical Campus

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**Prof.(Dr.)T. J.Sawant**

D.E.E., B.E.(Electrical),Ph.D., MISTE  
Founder - Secretary

**Prof.(Dr.) R.K.Lad**

B.E.(Civil),M.E.(Env.Engg.) Ph.D.(Engg.)  
DIRECTOR

Date- 13<sup>th</sup> Aug 2020

## NOTICE

All the third & final year students are here by informed that training program of "Structural Design Using ETAB'S" will be starting from 16<sup>th</sup> Aug 2020. The students who are intersted for the training should enrolled their names to Prof D. A. Zamre

Prof. D.A. Zamre

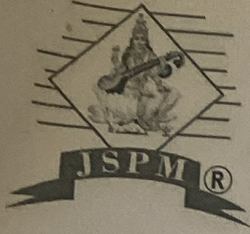
Program Coordinator

Dr. S. A Choudhari

HOD

Dept. of Civil Engg.  
JSPM Narhe Tech. Campus,  
Narhe, Pune - 41





Jayawant Shikshan Prasarak Mandal's  
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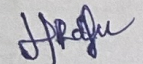
**Department of Computer Engineering**

**Academic Year 2020-21**

**NOTICE**

All the students of Computer department are hereby informed that "Python Programming" course will be starting from 2/1/2021 to 28/1/2021. The students who are interested for the course should enroll their names to Ms.J.S.Kharat.

  
Course Coordinator  
Ms.J.S.Kharat

  
HOD  
Dr.N.M.Ranjan

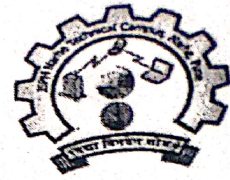
Head  
Department of Computer Engineering  
JSPM Narhe Technical Campus,  
R.S.S.O.E. & R. Narhe, Pune-411041.





Jayawant Shikshan Prasarak Mandal's  
**JSPM Narhe Technical Campus**

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**Prof.(Dr.)T. J.Sawant**  
D.E.E., B.E.(Electrical), Ph.D., MISTE  
Founder - Secretary

**Prof.(Dr.) R.K.Lad**  
B.E.(Civil), M.E.(Env.Engg.) Ph.D.(Engg.)  
DIRECTOR

DATE: 10/12/2020

**Department of Mechanical Engineering (Second Shift)**  
A.Y. 2020-2021

**NOTICE**

All the students of Mechanical Engineering (Second Shift) are hereby informed that, an Add on course on "A Certificate Course on Finite Element Analysis using ANSYS Workbench" has arranged from 26/12/2020 (Saturday). The forum is open to understand analysis of mechanical engineering projects using ANSYS Workbench. So register your name for the course on or before 23/12/2020 (Wednesday) to Dr. Manoj A. Kumbhalkar.

(Contact No: 9960863684)

Dr. M. A. Kumbhalkar

H. O. D.

Head  
Mech. Engg. Dept.  
Department of Mechanical Engineering  
JSPM (Second Shift) Campus  
R.S.S.O.E & R. Narhe, Pune - 411 041



# JSPM Narhe Technical Campus Department of Mechanical Engineering



S. No. 12/2/2 and 14/9 Narhe, Tal : Haveli, Dist.: Pune - 411041  
Phone : +91 20 2460 8700, 701, 702 Fax : +91 20 2460 8888 Web : [www.jspmnntc.edu.in](http://www.jspmnntc.edu.in)  
Affiliated to University of Pune. Approved by AICTE New Delhi and DTE Maharashtra.

Date: 14-05-2021

## NOTICE

All the SE, TE, and BE students of Mechanical Department are hereby informed that a 7 days yoga workshop is arranged on Secrets of Yoga -Pranayama with Scientific Aspects by Mr. Kaushal Patidar from 17<sup>th</sup> May 2021 to 23<sup>rd</sup> May 2021 from 7.00am-8.00am online on Zoom Platform. Zoom link will be shared on respective class what's app groups.

Dr. D. V. Bhise

HOD Head  
Department of Mechanical Engineering  
JSPM Narhe Technical Campus  
R.S.S.O.E. & R. Narhe, Pune - 411041.



Jayawant Shikshan Prasarak Mandal's  
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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



Date: 29/10/2019

## Department of E & TC Engineering

### Notice

All the TE & BE students are here by informed that our department is organizing Course on **Data Analytics using Python**. It will be starting from **2/11/2020 to 13/11/2020**. The students who are interested for the training should enroll their names to Program Coordinator Mrs. N. R. Kadam.

Mrs.N.R.Kadam

Program Coordinator

Dr. M. M. Sardeshmukh

H.O.D.

HEAD

Dept. of Electronics & Telecom. Engg.  
JSPM Narhe Technical Campus,  
Narhe, Pune - 411041





Jayawant Shikshan Prasarak Mandal's  
**JSPM Narhe Technical Campus**

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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



**DEPARTMENT OF MBA**

Date – 8 th May 2021

**Notice**

All the students of MBA are hereby informed that the department is organizing Expert training Session on “How do we keep adding learning and experiences from Day 1 of MBA” from 10<sup>th</sup> to 14<sup>th</sup> May 2021.

Time-9.30 AM to 3.30 PM.

Zoom Meeting Ids will be shared on the session day. All students are informed to join the session on time, Kindly note that attendance is mandatory for this session.

Course Coordinator

Dean MBA

Dr. R. K. Singh

Dean  
MBA Department  
JSPM Narhe Technical Campus  
Narhe - 411 041



Jayawant Shikshan Prasarak Mandal's  
**JSPM Narhe Technical Campus**

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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



Date- 5<sup>th</sup> Jan 2021

NOTICE

All MCA 1st year students are hereby informed that training program of Parallel Computing will be starting from 11<sup>th</sup> January to 20 January 2021. The students who are interested for the training should enrolled their names to Prof S. R. Lende

*Lende*  
Prof. S.R.Lende

Program Coordinator

*S.S.Solanki*  
Prof. Dr. S.S.Solanki

Dean MCA

Dean  
Dept. of MCA  
JSPM Narhe Technical Campus,  
Narhe, Pune - 41





Jayawant Shikshan Prasarak Mandal's  
**JSPM Narhe Technical Campus**

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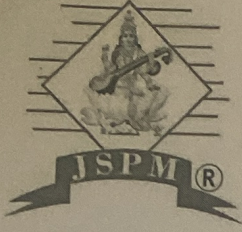
**Prof.(Dr.)T. J.Sawant**  
D.E.E., B.E.(Electrical),Ph.D., MISTE  
Founder - Secretary

**Prof.(Dr.)M.M.Sardeshmukh**  
B.Tech (E&TC) M.Tech (E&TC),Ph.D.(Engg.)  
DIRECTOR

---

JSPM'S Narhe Technical Campus, Narhe, Pune-41

2019-2020



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**Department of Computer Engineering**

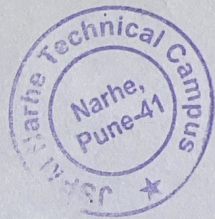
**Academic Year 2019-20**

**NOTICE**

All the students of Computer department are hereby informed that "MATLAB Simulink for System Modeling" course will be starting from 3/2/2020 to 28/2/2020. The students who are interested for the course should enroll their names to Mr.A.R.Uttarkar.

Course Coordinator  
Mr.A.R.Uttarkar

HOD  
Dr.N.M.Ranjan



Head  
Department of Computer Engineering  
JSPM Narhe Technical Campus,  
R.S.S.O.E. & R. Narhe, Pune-411041.



Date: 01/10/2019

## Notice

All the students of BE Mechanical Engineering are hereby informed that **“Course on Pre-processing using Hypermesh”** is scheduled on **5<sup>th</sup> October, 2019**. The course will be conducted in association with **G2G Innovations Pvt. Limited, Pune**.

So all students register their name to Mr. Nand Jee Kanu on or before 4<sup>th</sup> October 2019.

Workshop Coordinator



HOD  
Mech. Engg. Dept.

**Head**  
Department of Mechanical Engineering  
JSPM Narhe Technical Campus  
R.S.S.O.E.&R. Narhe, Pune - 411041.



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Date: 24/12/2019

## Department of E & TC Engineering

### Notice

All the TE & BE students are here by informed that our department is organizing Course on **Robotics using Arduino**. It will be starting from 6/01/2020 to 13/01/2020. The students who are interested for the training should enroll their names to Program Coordinator Prof. H. N. Patil

Prof. H. N. Patil

Program Coordinator

Dr. M. M. Sardeshmukh

H.O.D.

HEAD

Dept. of Electronics & Telecom. Engrg.  
JSPM Narhe Technical Campus,  
Narhe, Pune - 411041





Jayawant Shikshan Prasarak Mandal's  
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Date-14<sup>th</sup> February 2020

DEPARTMENT OF MBA

NOTICE

All the students of MBA are hereby informed that training on 'Soft skill and personality development' is arranged in JSPMNTC. Details are mentioned below.

Dates: 17, 18, 19, 20 and 21 February 2020.

Time: 10.00 AM to 4.00PM

Venue: VC Hall, A building, JSPMNTC.

Note-

Attendance and I-card is mandatory.

  
Course coordinator

  
Dean, MBA

Dean  
MBA Department  
JSPM Narhe Technical Campus  
Narhe - 411 041



Jayawant Shikshan Prasarak Mandal's  
**JSPM Narhe Technical Campus**

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**Prof.(Dr.)T. J.Sawant**

D.E.E., B.E.(Electrical),Ph.D., MISTE  
Founder - Secretary

**Prof.(Dr.) R.K.Lad**

B.E.(Civil),M.E.(Env.Engg.) Ph.D.(Engg.)  
DIRECTOR

Date- 05/02/2020

**NOTICE**

All the students of Civil Engineering are here by informed that, Department of civil engineering has arranged short term course on “**Application of MATLAB in Civil Engineering**” from 10<sup>th</sup> February 2020.The forum is open to learn hands on aspects of solving mathematical equations in civil engineering using standard tool MATLAB.So register your name for the course on or before 08/02/2020.

Venue : Civil CAD lab

Timing : 03:30 - 6:30 pm

Prof. V.P. Padmawar

Program Coordinator

Dr. S. A Choudhari

HOD

Head  
Dept. of Civil Engg.  
JSPM Narhe, Pune, Gan  
Narhe, Pune - 411041





Jayawant Shikshan Prasarak Mandal's  
**JSPM Narhe Technical Campus**

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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



Date:01 /01/2020

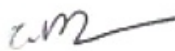
**Notice**

All the students of MCA are here by informed that the course of **Red Hat Linux** will be conducted from 6<sup>th</sup> Jan 2020 to 16<sup>th</sup> Jan 2020.for MCA students.

Attendance is compulsory for lecture.

**Time:** 2:30 to 5:30 PM

**Venue :** MCA Department, B Building

  
Prof. A.M.Tekale

Program Coordinator

  
Dr.S.S.Solanki

Dean(MCA)

Dean  
Dept. of MCA  
JSPM Narhe Technical Campus,  
Narhe, Pune - 41



Jayawant Shikshan Prasarak Mandal's  
**JSPM Narhe Technical Campus**

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**Prof.(Dr.)T. J.Sawant**  
D.E.E., B.E.(Electrical),Ph.D., MISTE  
Founder - Secretary

**Prof.(Dr.)M.M.Sardeshmukh**  
B.Tech (E&TC) M.Tech (E&TC),Ph.D.(Engg.)  
DIRECTOR

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JSPM'S Narhe Technical Campus, Narhe, Pune-41

2018-2019





Jayawant Shikshan Prasarak Mandal's  
**JSPM Narhe Technical Campus**

S. No. 12/2/2 and 14/9, Narhe, Tal : Haveli, Dist.: Pune - 411041

Phone : +91 20 2460 8700, 701, 702 Email : director@jspmntc.edu.in Web : www.jspmntc.edu.in

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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



**Prof.(Dr.)T. J.Sawant**  
D.E.E., B.E.(Electrical),Ph.D., MISTE  
Founder - Secretary

**Prof.(Dr.) R.K.Lad**  
B.E.(Civil),M.E.(Env.Engg.) Ph.D.(Engg.)  
DIRECTOR

Date : 01/02/2019

**NOTICE**

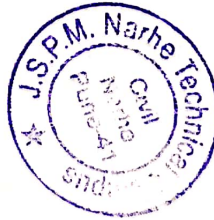
This is to inform all the students that the course of **Basics of Communication and Employability Skills Development** will be conducted from 4<sup>th</sup> Feb 2019. Register your name for the course to Prof Neelam V. Chaple.

Venue: Civil Department, B Building, Seminar Hall.

*Chaple*

Prof. Neelam V. Chaple

Program Coordinator

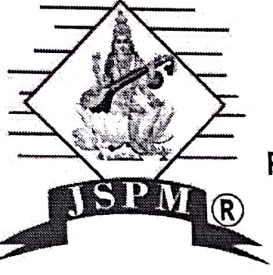


*S. A Choudhari*

Dr. S. A Choudhari

Head  
HOD  
Dept. of Civil Engg.  
JSPM Narhe Technical Campus,  
Narhe, Pune.





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**Prof.(Dr.) R.K.Lad**


B.E.(Civil),M.E.(Env.Engg.) Ph.D.(Engg.)  
DIRECTOR

Date: 11 July 2018

**NOTICE**

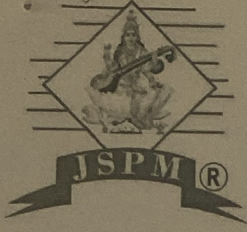
All the students of Mechanical and Civil Engineering are hereby informed that, Department of Mechanical and Civil Engineering has arranged an Interdisciplinary course on “2D and 3D Solid Modeling using AutoCAD” from 16 July 2018 The forum is open to learn hands on aspects of solid modeling using standard tool AutoCAD. So register your name for the course on or before 16 July 2018 to Prof. Bharat Aher, Mechanical Engineering Department and Prof. S.S. Deshpande, Civil Engineering Department.

  
Prof. S. S. Deshpande  
Program Coordinator

  
Dr. S. A. Choudhari

HOD  
Dept. of Civil Engg.  
JSPM Narhe Tech. Campus,  
Narhe, Pune - 411041





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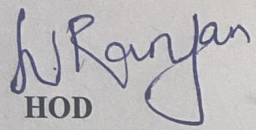
**Department of Computer Engineering**

**Academic Year 2018-19**

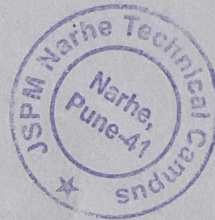
**NOTICE**

All the students of Computer department are hereby informed that “**Artificial Intelligence**” course will be starting from **1/2/2019** to **28/2 /2019** The students who are interested for the course should enrolled their names to Ms.M.S.Namose.

  
Course Coordinator  
Ms.M.S.Namose

  
HOD  
Dr.N.M.Ranjan  
Head

Department of Computer Engineering  
JSPM Narhe Technical Campus,  
R.S.S.O.E. & R. Narhe, Pune-411041.





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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



Date: 20/12/2018

## Department of E & TC Engineering

### Notice

All the TE & BE students are here by informed that our department is organizing Course on **Image Processing Using Python**. It will be starting from 7/01/2019 to 11/01/2019. The students who are interested for the training should enroll their names to Program Coordinator Mrs. K. P. Wagh

Mrs. K. P. Wagh

Program Coordinator



Prof. H. N. Patil

H.O.D.  
HEAD

Dept. of Electronics & Telecom. Engg.  
JSPM Narhe Technical Campus,  
Narhe, Pune - 411041



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**Date- 1 March 2019**

**DEPARTMENT OF MBA**

All the students of MBA are hereby informed that training on 'Communication and Soft Skill' is arranged in JSPMNTC. The program will cover various aspects of soft skills such as Effective communication, Time management, Team work and Collaboration, etc. Details are mentioned below.

Dates: 4 to 8 March 2019

Time: 9.30 AM to 3.30PM

Venue: JSPM NTC, B Building, MBA Dept. 3" Floor Seminar hall

**Note-**

Attendance and I-card is mandatory. Late comers will not be allowed

  
Course coordinator

  
Dean, MBA

Dean  
MBA Department  
JSPM Narhe Technical Campus  
Narhe - 411 041



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Date:30/08/2018

**Notice**

All the students of MCA are here by informed that the course of **Machine Learning** will be conducted from 3<sup>rd</sup> sep 2018 to 13<sup>th</sup> sep 2018 for MCA students.

Attendance is compulsory for lecture.

**Time:** 3:30 to 5:30 PM

**Venue :** MCA Department, B Building

Prof. S.M. Deshmukh

Program Coordinator

Dr.S.S.Solanki

Dean(MCA)

Dean

Dept. of MCA  
JSPM Narhe Technical Campus,  
Narhe, Pune - 41



Jayawant Shikshan Prasarak Mandal's

# JSPM Narhe Technical Campus Department of Mechanical Engineering

S. No. 12/2/2 and 14/9 Narhe, Tal : Haveli, Dist.: Pune - 411041

Phone : +91 20 2460 8700, 701, 702 Fax : +91 20 2460 8888

Affiliated to University of Pune. Approved by AICTE New Delhi and DTE Maharashtra.



DATE: 29/06/2018

## NOTICE

All the students of Mechanical and Civil Engineering are hereby informed that, Department of Mechanical Engineering has arranged an **Interdisciplinary course on "Practical Finite Element Analysis using ANSYS & MATLAB"** from **07/07/2018**. The forum is open to learn hands on experience of Finite Element Method using ANSYS. So register your name of for the course on or before **06/07/2018**



H. O. D.  
Mech. Engg. Dept

**Attachment:** Course content and syllabus of Interdisciplinary  
Element Analysis using ANSYS & MATLAB"

Head  
Department of Mechanical Engineering  
JSPM Narhe Technical Campus  
R.S.S.O.E. & R. Narhe, Pune - 411041.





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DIRECTOR

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## **Institutional Program Course Modules and Outcomes for Certificate/Value added courses offered**





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DIRECTOR

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JSPM'S Narhe Technical Campus, Narhe, Pune-41

2022-2023



# Jayawant Shikshan Prasarak Mandal's JSPM Narhe Technical Campus

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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



**Course Name : Analysis of Structure Using ETAB's**

**Course Code : 23-SDETAB**

**Instructor : Prof . P.N. Patil**

## CONTENTS

| Session   | Topic  | Duration (Hrs) |
|-----------|--|----------------|
| Session 1 | <ul style="list-style-type: none"><li>• Introduction to Structural Engineering</li><li>• Use of Computer Aided Design in Civil Engineering</li><li>• Applications of ETABS</li><li>• Introduction to Interface of ETABS</li><li>• Creating a New File and how to save it</li><li>• Some basic commands<ul style="list-style-type: none"><li>○ Generation of Grid</li><li>○ Editing Grid</li><li>○ Editing Storey Data</li><li>○ Insert Storey</li><li>○ Edit Grid Data</li></ul></li></ul> | 03             |
| Session 2 | <ul style="list-style-type: none"><li>• Introduction Support Systems in ETABS</li><li>• Assigning Supports to Created Geometry</li><li>• Creating Material Properties in ETABS</li><li>• Defining Section Properties for Beams &amp; Columns</li><li>• Practice Session for Geometry Creation</li></ul>  | 03             |
| Session 3 | <ul style="list-style-type: none"><li>• Creating 2D Geometry of the Structure</li><li>• Creating Beams Using Grid Created</li><li>• Creating Columns</li><li>• Creating Slab</li><li>• Converting 2D Structure to 3D</li><li>• Different Viewing Options in ETABS</li><li>• Set Building View Command</li></ul>  | 03             |
| Session 4 | <ul style="list-style-type: none"><li>• Introduction to Types of Loads to be Applied on a Particular Building</li><li>• Manual Load Calculations for The Given Project (by Trainer )</li><li>• Calculations of Loads For All The Projects given( by Students )</li></ul>   | 03             |



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|            |   |          |
|------------|---|----------|
| Session 5  | <ul style="list-style-type: none"><li>• Application of Dead Load And Live Load (Member Loads )<ul style="list-style-type: none"><li>○ Wall Loads</li><li>○ Parapet Load</li><li>○ Stair-Case Load</li><li>○ Projection Load</li><li>○ Water Tank Wall Load</li></ul></li></ul>    | 03       |
| Session 6  | <ul style="list-style-type: none"><li>• Application of floor load dead as well as live load</li><li>• Practice Sessions For Application of Floor Loads</li></ul>  | 02<br>01 |
| Session 7  | <ul style="list-style-type: none"><li>• Analysis of RCC structure and how to see<ul style="list-style-type: none"><li>○ Bending Moment Diagram /Values</li><li>○ Shear Force Diagram /Values</li><li>○ Axial Force Diagram/Values</li><li>○ Support Reactions</li></ul></li></ul> | 03       |
| Session 8  | <ul style="list-style-type: none"><li>• RCC Design</li><li>• How To See Failed Beams and Columns</li><li>• Making All The Members Pass</li><li>• Detailing Concepts Using ETABS Results</li></ul>   | 03       |
| Session 9  | <ul style="list-style-type: none"><li>• Application of Earthquake Load &amp; Wind Load</li></ul>  | 03       |
| Session 10 | <ul style="list-style-type: none"><li>• Introduction to Shear Walls</li><li>• Creating Shear walls</li><li>• Assigning Material Properties and Section Properties to shear walls</li><li>• Analysis and Design of shear wall</li></ul>  | 03       |

Prof. P. N. Patil

Program Coordinator



Dr. S. B. khaple

Head  
Dept. of Civil Engg.  
JSPM Narhe Tech. Campus,  
Narhe, Pune - 41



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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



**Course Name : Analysis of Structure Using ETAB's**

**Course Code : 23-SDETAB**

**Program Outcome**

Students will able to attain following knowledge and skill

1. To foster an ambitious desire to work in design field
2. To update knowledge about ETAB to understand design standards
3. Learn the importance of teamwork and effective communication in structural design projects, as well as how to collaborate with other engineers, architects, and stakeholders.
4. This program helps students to become more familiar with the advanced design techniques
5. Work on practical projects and case studies that simulate real-world scenarios, allowing you to apply the knowledge and skills gained throughout the course.

(a)

Prof. P. N. Patil

Program Coordinator

Dr. S. B. khaple

HOD

Head

Dept. of Civil Engg.  
JSPM Narhe Tech. Campus,  
Narhe, Pune - 41





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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



**Course Name : Introduction to Programming in C**

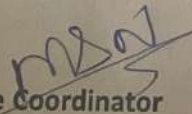
**Course Code : 2022CompCP**

**Instructor : Ms.M.S.Namose**

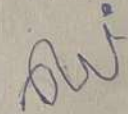
## CONTENTS

| Session    | Topic                                    | Duration (Hrs) |
|------------|--|----------------|
| Session 1  | Lesson 1. Fundamentals in C              | 02             |
| Session 2  | Lesson 2. Operators and Expressions      | 02             |
| Session 3  | Lesson 3. Data types                     | 02             |
| Session 4  | Lesson 4. Input-Output Library Functions | 02             |
| Session 5  | Lesson 5. Control statements             | 02             |
| Session 6  | Lesson 6. Function                       | 02             |
| Session 7  | Lesson 7. Storage class                  | 02             |
| Session 8  | Lesson 8. Pointer                        | 02             |
| Session 9  | Lesson 9. Pointer and Function           | 02             |
| Session 10 | Lesson 10. Array                         | 02             |
| Session 11 | Lesson 11. Pointer and array             | 02             |
| Session 12 | Lesson 12. Array and function            | 02             |
| Session 13 | Lesson 13. String                        | 02             |
| Session 14 | Lesson 14. Structure and function        | 02             |
| Session 15 | Lesson 15 File Handling                  | 02             |

**Programme Outcome:** Students will able to develop a C program. Control the sequence of the program and give logical outputs. Implement strings in your C program. Store different data types in the same memory. Manage I/O operations in your C program. Repeat the sequence of instructions and points for a memory location

  
Course Coordinator  
Ms.M.S.Namose



  
HOD  
Dr.N.A.Auti

Head

Department of Computer  
J.S.P.M. Narhe Techn  
S.O.E. & R. Narhe  
1104

JSPM NARHE TECHNICAL CAMPUS, PUNE  
DEPARTMENT OF MECHANICAL ENGINEERING

**Syllabus**

**Finite Element Analysis using ANSYS Software**

**Course Curriculum (30 Hrs.)**

**Chapter 1: Introduction to FEA and ANSYS Workbench**

- a) Introduction to the Finite Element Method
- b) General Steps of the Finite Element Method
- c) Explanation of 1D, 2D and 3D Elements with examples of ANSYS Elements
- d) Need of FEM
- e) Types of analysis that can be done using ANSYS
- f) Advantages of the Finite Element Method
- g) Limitations of FEA
- h) ANSYS Workbench Overview
- i) Mechanical Overview
- j) The Workbench Environment
- k) The Toolbox
- l) The Project Schematic
- m) Workbench File Management
- n) Working with Units

**Chapter 2: Design Modeler**

- a) Introduction to Design Modeler
- b) Planes and Sketches
- c) Modeling
- d) CAD Connections
- e) Beams and Shells
- f) Lines and Surfaces

**Chapter 3: Mechanical Basics**

- a) Basic Analysis Procedure
- b) The Mechanical Interface
- c) Outline Tree and Details
- d) The Mechanical Application Wizard
- e) Scoping Loads and Supports
- f) The Engineering Data Application

**Chapter 4: General Preprocessing**

- a) Geometry Branch
- b) Contact
- c) Meshing
- d) Named Selections
- e) Coordinate Systems
- f) Remote Boundary Conditions
- g) Selection Information
- h) Workshop – Mesh Control

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DEPARTMENT OF MECHANICAL ENGINEERING**

**Chapter 5: Static Structural Analysis**

- a) Basics of Static Structural Analysis
- b) Geometry
- c) Material Properties
- d) Analysis Settings
- e) Nodal Loads and Supports
- f) Solving Models
- g) Results and Postprocessing
- h) Fatigue Analysis

**Chapter 6: Modal and Harmonic Analysis**

- a) Basics of Free Vibration
- b) Geometry
- c) Solution Setup
- d) Static Extension to Modal Analysis
- e) Vibration with Prestress
- f) Static Extension to Harmonic Analysis
- g) Time history information
- h) Graphical representation of results

**Chapter 7: Thermal Analysis**

- a) Basics Steady State Heat Transfer
- b) Geometry
- c) Material Properties
- d) Thermal Contact
- e) Thermal Boundary Conditions
- f) Solution Options
- g) Results and Postprocessing

**Chapter 8: Results and Postprocessing**

- a) Viewing Results
- b) Scoping Results
- c) Exporting Results
- d) Coordinates Systems
- e) Solutions Combinations
- f) Stress Singularities
- g) Error Estimation
- h) Convergence
- i) Workshops

**Mode of Evaluation:** Quiz/Assignment/ Seminar/Written Examination



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## Department of Mechanical Engineering

A.Y. 2022-23

### Finite Element Analysis using ANSYS Software

#### Program Outcomes for on course on Finite Element Analysis using ANSYS Software

There were several lessons to be learned from this course some of which are briefly described below with regards to the use of FE technique in project. Some of the more general learning outcomes relative to solved project were:

Mesh density:

- The number of elements/nodes affect whether the solution has converged
- The engineer needs to determine what the convergence criteria will be and what tolerance is acceptable
- No effort was made to create mapped meshes or reduce the element count while retaining mesh convergence
- Mesh density is critical to obtaining a reasonable FEA simulation result

Element type

- Limitations from using assumptions such as plane-stress need to be considered since they may affect the results particularly if there are other stress components due to other loads
- Effect of higher order, lower order elements, or other elements options such as reduced integration must be understood by the engineer.
- The choice of element type (HO, LO, visco-elastic, etc.) and options (plane-stress/strain, reduced integration, etc.) are also critical to obtaining a reasonable FEA simulation result
- Although higher order elements can be better suited to curved surfaces with its mid-side node, lower order elements are often suggested for plasticity which was not an aspect for this project.





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DTE Code : 6755 PUN Code : CEGP019/70 AISHE Code : C-45874




Course Name: **Data Science for Engineers.**

Instructor: 1. Mrs. N. R. Kadam


2. Mrs. S. N. Pawar

| Session    | Date       | Topic  | Duration (in Hrs) |
|------------|------------|--|-------------------|
| Session 1  | 9-01-2023  | Linear algebra for data science  | 2                 |
| Session 2  | 9-01-2023  | Algebraic view - vectors, matrices, product of matrix & vector,  | 2                 |
| Session 3  | 9-01-2023  | Algebraic view - rank, null space, solution of over-determined set of equations and pseudo-inverse)  | 2                 |
| Session 4  | 10-01-2023 | Geometric view - vectors, distance, projections, eigen value decomposition   | 2                 |
| Session 5  | 10-01-2023 | Statistics descriptive statistics,   | 2                 |
| Session 6  | 10-01-2023 | notion of probability, distributions, mean,  | 2                 |
| Session 7  | 11-01-2023 | variance, covariance, covariance matrix, understanding univariate and multivariate normal distributions, introduction to hypothesis testing, confidence interval for estimates | 2                 |
| Session 8  | 11-01-2023 | Optimization   | 2                 |
| Session 9  | 11-01-2023 | Typology of data science problems and a solution framework   | 2                 |
| Session 10 | 12-01-2023 | Simple linear regression and verifying assumptions used in linear regression   | 2                 |
| Session 11 | 12-01-2023 | Multivariate linear regression, model assessment,  | 2                 |
| Session 12 | 12-01-2023 | assessing importance of different variables, subset selection  | 2                 |
| Session 13 | 13-01-2023 | Classification using logistic regression   | 2                 |
| Session 14 | 13-01-2023 | Classification using kNN and k-means clustering  | 2                 |
| Session 15 | 13-01-2023 | Density based method: Density-Based Spatial Clustering   | 2                 |

  
Mrs. A. S. Patil

Program Coordinator



  
Dr. M. M. Sardeshmukh

HEAD

H.O.D. Engg.

Dept. of Electronics & Telecomm.  
JSPM Narhe Technical Campus,  
Narhe, Pune - 411041



Jayawant Shikshan Prasarak Mandal's  
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DTE Code : 6755 PUN Code : CEGP019073 AISHE Code : C-45074



**Name of the Course: Data Science for Engineers**

**Course Code: 23ETCDSE**

**Program Outcome**

**Student will able to attain following knowledge and skill**

1. Students will be able to describe a flow process for data science problems (Remembering)
2. Classify data science problems into standard typology (Comprehension)
3. Develop R codes for data science solutions (Application)
4. Correlate results to the solution approach followed (Analysis)
5. Assess the solution approach (Evaluation)
6. Construct use cases to validate approach and identify modifications required (Creating)

Program Coordinator

Mrs. A. S. Patil

H.O.D.

Dr. M.M. Sardeshmukh

HEAD  
Dept. of Electronics & Telecom. Engg.  
JSPM Narhe Technical Campus,  
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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



**Course Name :** Personality Development/Employability skills workshop

**Course Code:** 23MBAPD

**Trainer:** Mr.Mahesh Raju

**Organized by:** Rubicon under lifeskill programme

**CONTENTS**

| Session   | Topic  | Duration (Hrs) |
|-----------|--|----------------|
| Session 1 | Expectation setting & Ice breaking, Organizational Structure                         | 08             |
| Session 2 | SWOT Analysis, Presentation Skills, E-mail Etiquette,                                | 08             |
| Session 3 | Corporate Jargons, Public Speaking & Telephone Etiquette<br>Grooming & Body language | 08             |
| Session 4 | Group Discussion & Personal Interview  | 08             |
|           | Total  | 32             |

  
Course co-ordinator

  
Dean  
MBA Department  
JSPM Narhe Technical Campus  
Narhe - 411 041

Dean MBA



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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



**Course Name :** Personality Development/Employability skills workshop

**Course Code:** 23MBAPD

**Trainer:** Mr.Mahesh Raju

**Organized by:** Rubicon under lifeskill programme

**Program Outcome**

1. Students will recognize the importance of lifelong learning and professional development, seeking out opportunities for skill enhancement, further education, and career advancement throughout their professional journey.
2. Students will gain a deeper understanding of their strengths, weaknesses, values; and personality traits, enabling them to make informed career choices and align their personal and professional goals.
3. Students will develop strong communication skills, including verbal, non-verbal, and written communication, enabling them to articulate their ideas, express themselves confidently, and engage effectively with others in various professional settings.
4. Students will develop critical thinking and problem-solving skills to analyze complex issues, evaluate alternative solutions, and make informed decisions, contributing to innovative problem-solving in the workplace.

Course co-ordinator

Dean MBA

Dean  
MBA Department  
JSPM Narhe Technical Campus  
Narhe - 411 041



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DTE Code : 6755 PUN Code : CEIGP019070 AISME Code : C-45874



**Course Name :** Career in cloud computing

**Course Code :** 22MCACICC

**Instructor :** Prof A . N. Hajare

**Chief guest:-** Mr.Vishal Verma

**Program Outcome:**

After attending the program students will be able

1. To understand the principles and paradigm of Cloud Computing .
2. Ability to design and deploy Cloud Infrastructure .
3. Understand cloud security issues and solutions .
4. Ability to understand role of Virtualization Technologies .
5. Design & develop backup strategies for cloud data based on features.

**CONTENTS**

| Session   | Topic   | Duration (Hrs) |
|-----------|---|----------------|
| Session 1 | <ul style="list-style-type: none"><li>• <b>Cloud Computing fundamentals</b></li><li>• Essential characteristics,</li><li>• Architectural Influences,</li><li>• Technological Influences, and</li><li>• Operational Influences.</li></ul>  | 02             |
| Session 2 | <b>Cloud Computing Architecture</b> <ul style="list-style-type: none"><li>• : Cloud Delivery models,</li><li>• The SPI Framework,</li><li>• Cloud Software as a Service (SaaS) ,</li><li>• Cloud Platform as a Service(PaaS),</li><li>• Cloud Infrastructure as a Service(IaaS),</li><li>• Cloud deployment models,</li><li>• Public Clouds, Community Clouds,</li><li>• Hybrid Clouds,</li><li>• Alternative Deployment models,</li><li>• Expected benefits.</li></ul> | 03             |
| Session 3 | <ul style="list-style-type: none"><li>• <b>Cloud Computing Software Security fundamentals:</b></li><li>• Cloud Information Security Objectives,</li><li>• Confidentiality,</li><li>• Integrity, Availability,</li><li>• Cloud Security Services,</li><li>• Relevant Cloud Security Design Principles.</li></ul>   | 02             |



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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



|            |   |    |
|------------|---|----|
|            | <ul style="list-style-type: none"> <li>Secure Cloud Software Requirements,</li> <li>Secure Development practices,</li> <li>Approaches to Cloud Software Requirement Engineering, Cloud Security Policy Implementation.</li> </ul>   |    |
| Session 4  | <ul style="list-style-type: none"> <li>Practice Sessions on <b>Software Security</b></li> </ul>   | 01 |
| Session 5  | <ul style="list-style-type: none"> <li><b>Cloud Computing Risk Issues</b></li> <li>The CIA Traid,</li> <li>Privacy and Compliance Risks,</li> <li>Threats to Infrastructure,</li> <li>Data and Access Control,</li> <li>Cloud Access Control Issues, Cloud Service Provider Risks.</li> </ul>   | 02 |
| Session 6  | <ul style="list-style-type: none"> <li>Cloud Computing Security Architecture</li> <li>: Architectural Considerations,</li> <li>General Issues,</li> <li>Trusted Cloud Computing,</li> <li>Secure Execution environments and Communications, Micro architectures,</li> <li>Identity Management and Access Control,</li> <li>Autonomic Security.</li> </ul>   | 02 |
| Session 7  | <ul style="list-style-type: none"> <li><b>SYSTEM SECURITY</b></li> <li>Intruders, Intrusion Detection,</li> <li>Password Management,</li> <li>Viruses and Related Threads,</li> <li>Virus Counter Measure,</li> <li>Firewall Design principles,</li> <li>Trusted Systems.</li> </ul>  | 02 |
| Session 8  | <p><b>CLOUD STORAGE</b></p> <ul style="list-style-type: none"> <li>Describe the overall organization of data and storage.</li> <li>List the various types of data within the data taxonomy and classify different data types within the data taxonomy.</li> <li>Identify the problems of scale and management in big data. Discuss various storage abstractions.</li> <li>Compare and contrast Hadoop Distributed File System (HDFS) with Ceph File System (CephFS).</li> </ul> | 02 |
| Session 9  | <ul style="list-style-type: none"> <li><b>Practice Sessions on SYSTEM SECURITY</b></li> </ul>   | 02 |
| Session 10 | <ul style="list-style-type: none"> <li><b>Programming Models</b></li> <li>students study data-parallel analytics along with Hadoop MapReduce (YARN),</li> <li>distributed programming for the cloud,</li> </ul>   | 02 |



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 DTE Code : 6755 PUN Code : CEGPD19070 AISHE Code : C-45874



|            |  |    |
|------------|--|----|
| Session 11 | <ul style="list-style-type: none"> <li>graph parallel analytics (with GraphLab 2.0),</li> <li>and iterative data-parallel analytics (with Apache Spark).</li> </ul> <p><b>Virtualization (with Case Studies)</b></p> <ul style="list-style-type: none"> <li>case studies on Software Defined Storage (SDS),</li> <li>Software Defined Networks (SDN), and Amazon EC2.</li> </ul> | 02 |
| Session 12 | <p><b>Cloud Big Data Analytics Services</b></p> <ul style="list-style-type: none"> <li>Data Science and Big Data Characteristics</li> <li>Data Collection, Mining, and Analytics on Clouds</li> <li>Example: Big Data Analytics for Healthcare Applications</li> <li>Example: Big Data Analytics for Social Media Applications</li> </ul>  | 02 |
| Session 13 | <p><b>Cloud Streaming Big Data Analytics Services</b></p> <ul style="list-style-type: none"> <li>Scientific Streams Examples</li> <li>Basic Design Challenges of Streaming Systems</li> <li>Data Stream Analytics Frameworks</li> </ul>  | 02 |
| Session 14 | <p><b>Cloud Machine Learning Services</b></p> <ul style="list-style-type: none"> <li>Taxonomy of Machine Learning Methods</li> <li>Unsupervised Machine Learning Algorithms</li> <li>Clustering and Dimensionality Reduction Methods</li> <li>Model Development and Selection for Machine Learning</li> </ul>  | 02 |
| Session 15 | <p><b>Cloud Deep Learning Services</b></p> <ul style="list-style-type: none"> <li>Artificial Intelligence and Smart Machine Development</li> <li>Text and Image Recognition Using ANN and CNN</li> <li>Google TensorFlow for Neural Network Computing</li> <li>Predictive Software Libraries for Cognitive Applications</li> </ul>   | 02 |

Prof.A.N. Hajare

Program Coordinator

Prof. Dr.S.S.Solanki

Dean MCA

**Dean**

Dept. of MCA

JSPM Narhe Technical Campus  
 Narhe, Pune - 41



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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



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**Prof.(Dr.)T. J.Sawant**  
D.E.E., B.E.(Electrical),Ph.D., MISTE  
Founder - Secretary

**Prof.(Dr.)M.M.Sardeshmukh**  
B.Tech (E&TC) M.Tech (E&TC),Ph.D.(Engg.)  
DIRECTOR

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JSPM'S Narhe Technical Campus, Narhe, Pune-41

2021-2022





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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



**Course Name :** “ETAB’s -A Solution for Structural Design”

**Course Code :** 23-SDETAB

**Instructor :** Prof . K. B. Narwade

## CONTENTS

| Session   | Topic  | Duration (Hrs) |
|-----------|--|----------------|
| Session 1 | <ul style="list-style-type: none"><li>• Introduction to Structural Engineering</li><li>• Use of Computer Aided Design in Civil Engineering</li><li>• Applications of ETABS</li><li>• Introduction to Interface of ETABS</li><li>• Creating a New File and how to save it</li><li>• Some basic commands<ul style="list-style-type: none"><li>○ Generation of Grid</li><li>○ Editing Grid</li><li>○ Editing Storey Data</li><li>○ Insert Storey</li><li>○ Edit Grid Data</li></ul></li></ul> | 03             |
| Session 2 | <ul style="list-style-type: none"><li>• Introduction Support Systems in ETABS</li><li>• Assigning Supports to Created Geometry</li><li>• Creating Material Properties in ETABS</li><li>• Defining Section Properties for Beams&amp; Columns</li><li>• Practice Session for Geometry Creation</li></ul>   | 03             |
| Session 3 | <ul style="list-style-type: none"><li>• Creating 2D Geometry of the Structure</li><li>• Creating Beams Using Grid Created</li><li>• Creating Columns</li><li>• Creating Slab</li><li>• Converting 2D Structure to 3D</li><li>• Different Viewing Options in ETABS</li><li>• Set Building View Command</li></ul>  | 03             |
| Session 4 | <ul style="list-style-type: none"><li>• Introduction to Types of Loads to be Applied on a Particular Building</li><li>• Manual Load Calculations for The Given Project (by Trainer )</li><li>• Calculations of Loads For All The Projects given( by Students )</li></ul>   | 03             |



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|            |   |          |
|------------|---|----------|
| Session 5  | <ul style="list-style-type: none"><li>• Application of Dead Load And Live Load (Member Loads )<ul style="list-style-type: none"><li>○ Wall Loads</li><li>○ Parapet Load</li><li>○ Stair-Case Load</li><li>○ Projection Load</li><li>○ Water Tank Wall Load</li></ul></li></ul>    | 03       |
| Session 6  | <ul style="list-style-type: none"><li>• Application of floor load dead as well as live load</li><li>• Practice Sessions For Application of Floor Loads</li></ul>  | 02<br>01 |
| Session 7  | <ul style="list-style-type: none"><li>• Analysis of RCC structure and how to see<ul style="list-style-type: none"><li>○ Bending Moment Diagram /Values</li><li>○ Shear Force Diagram /Values</li><li>○ Axial Force Diagram/Values</li><li>○ Support Reactions</li></ul></li></ul> | 03       |
| Session 8  | <ul style="list-style-type: none"><li>• RCC Design</li><li>• How To See Failed Beams and Columns</li><li>• Making All The Members Pass</li><li>• Detailing Concepts Using ETABS Results</li></ul>   | 03       |
| Session 9  | <ul style="list-style-type: none"><li>• Application of Earthquake Load &amp; Wind Load</li></ul>  | 03       |
| Session 10 | <ul style="list-style-type: none"><li>• Introduction to Shear Walls</li><li>• Creating Shear walls</li><li>• Assigning Material Properties and Section Properties to shear walls</li><li>• Analysis and Design of shear wall</li></ul>  | 03       |

  
Prof. A. S. Jadhav

Program Coordinator



  
Dr. S. B. khaple

HOD  
Head  
Dept. of Civil Engg.  
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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874




**Course Name : "ETAB's -A Solution for Structural Design"**

**Course Code : 23-SDETAB**

**Program Outcome**

Students will able to attain following knowledge and skill

1. Learn to perform linear and nonlinear structural analysis, including static and dynamic analyses. Understand the significance of these analyses in design
2. Gain experience in designing structural components like beams, columns, slabs, and foundations, using ETABS. Learn about design codes and how to apply them.
3. Gain experience in creating design reports, drawings, and documentation that are essential for structural design projects
4. Develop problem-solving skills to troubleshoot common issues encountered in structural design and analysis using ETABS.
5. To pursue a lifelong career in design field and professional growth for betterment of society.

  
Prof. A. S. Jadhav

Program Coordinator

  
Dr. S. B. khaple

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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



**Course Name : Advanced C++ Programming**

**Course Code : 22COMPCPP**

**Instructor : Ms.J.S.Kharat**

## CONTENTS

| Session    | Topic  | Duration (Hrs) |
|------------|--|----------------|
| Session 1  | <b>WEEK 1:</b> Programming in C++ is Fun : Build and execute a C program in C++, Write equivalent programs in C++  | 02             |
| Session 2  | <b>WEEK 2:</b> C++ as Better C : Procedural Extensions of C  | 02             |
| Session 3  | <b>WEEK 3:</b> Overview of OOP in C++ : Classes and basic Object-Oriented features (encapsulation)   | 02             |
| Session 4  | <b>WEEK 4:</b> Overview of OOP in C++ : More OO features, overloading, namespace and using struct and union  | 02             |
| Session 5  | <b>WEEK 5:</b> Inheritance : Generalization / Specialization of Object Modeling in C++   | 02             |
| Session 6  | <b>WEEK 6:</b> Polymorphism : Static and Dynamic Binding   | 02             |
| Session 7  | <b>WEEK 7:</b> Type Casting & Exceptions : C++ cast operators; C++ Exceptions & standard exception classes   | 02             |
| Session 8  | <b>WEEK 8:</b> Templates & STL – Function and Class templates and using STL like containers, algorithms  | 02             |
| Session 9  | Lesson 9. <b>RTTI (Run Time Type Identification)</b> <ul style="list-style-type: none"><li>▪ Why RTTI?<ul style="list-style-type: none"><li>▪ Implications for Class Library Design</li><li>▪ Controlling Object Behaviors</li></ul></li><li>▪ RTTI Operators<ul style="list-style-type: none"><li>▪ dynamic_cast</li><li>▪ typeid</li><li>▪ type_info Class</li></ul></li></ul> | 02             |
| Session 10 | Lesson 10. <b>Object Storage Management</b> <ul style="list-style-type: none"><li>▪ New and Delete Formats<ul style="list-style-type: none"><li>▪ Nothrow Operator new</li><li>▪ Placement Formats</li><li>▪ Explicit Destructor Calls</li></ul></li></ul>   | 02             |
| Session 11 | Lesson 11. <b>Pointer and array</b>  | 02             |
| Session 12 | Lesson 12. <b>Array and function</b>   | 02             |
| Session 13 | Lesson 13. <b>String</b>   | 02             |
| Session 14 | Lesson 14. <b>Structure and function</b>   | 02             |
| Session 15 | Lesson 15 <b>File Handling</b>   | 02             |



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**Programme Outcome:** Students are able to gain a foundation for writing efficient, safe C++ code. Learn how to use STL libraries. Understand memory pitfalls in C++. Know how to expand the C++ memory model. Utilize object-oriented for analysis and design. Apply multiple inheritance to an application. Understand how streams work.

*JSK*

Course Coordinator  
Ms. J.S. Kharat

*m. d. Salunke*  
HOD

Dr. M.D. Salunke



Head  
Department of Computer Engineering  
JSPM Narhe Technical Campus,  
R.S.S.O.E. & R. Narhe, Pune-411041.

**Course Name: Add-on Course on “Project Based Analysis of Mechanical Component using ANSYS Workbench”**

**PO Addressed: PO1, PO3, PO6, PO11, PO12**

|       |  |
|-------|--|
| PO1.  | <b>Engineering knowledge:</b> Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.  |
| PO3.  | <b>Design/development of solutions:</b> Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations. |
| PO6.  | <b>The engineer and society:</b> Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.   |
| PO11. | <b>Project management and finance:</b> Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.                                       |
| PO12. | <b>Life-long learning:</b> Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.   |

**CO Addressed are-**

**CAD/CAM and Automation Subject – CO3**

**CO3.** Find stresses and displacements of 1D and 2D problems by using FEA.

**Project Stage-I & II – CO1**

**CO1** Implement suitable methodology to solve the Problems pertaining to the mechanical engineering by utilizing the knowledge gained during the curriculum.

**Purpose-** To apply modern analysis tool for the analysis of mechanical components in various domain like design strength analysis, thermal analysis, analysis for composite material, etc.



### Course Outcome:

Students should be able,

CO1. to apply knowledge for analysis of mechanical components using FEA Package.

CO1. to do static and dynamic structural, thermal, thermo-mechanical, fluid, fatigue analysis of complex three dimension model.

CO3. to demonstrate the ability to evaluate and interpret FE analysis results for design and evaluation purposes.

Establish the correlation between the Courses and the Program Outcomes (POs)

| CO  | PO1 | PO3 | PO6 | PO11 | PO12 |
|-----|-----|-----|-----|------|------|
| CO1 | 3   | 3   | 2   | 1    | 2    |
| CO2 | 3   | 2   | 2   | 1    | 3    |
| CO3 | 3   | 2   | 3   | 3    | 1    |

Justification for mapping CO to corresponding PO

| Course Outcome (CO) | Mapped PO                 | Justification   |
|---------------------|---------------------------|---|
| CO1                 | PO1, PO3, PO6, PO11, PO12 | Apply engineering knowledge by solving problem (PO1, PO3)<br>Understanding of design concept for analysis using finite element package (PO6, PO11, PO12)                          |
| CO2                 | PO1, PO3, PO6, PO11, PO12 | Apply engineering knowledge to analyze mechanical model. (PO1, PO3)<br>Practical significance by analyzing in various way like static structural, fatigue etc. (PO6, PO11, PO12). |
| CO3                 | PO1, PO3, PO6, PO11, PO12 | Apply engineering knowledge by solving problem (PO1, PO3)<br>Interpretation of results for stresses and displacements of 1D, 2D and 3D problems. (PO6, PO11, PO12)                |





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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



## Department of Mechanical Engineering

A.Y. 2021-22

### Project Based Analysis of Mechanical Components using ANSYS Workbench

#### Program Outcomes for on course on “Project Based Analysis of Mechanical Components using ANSYS Workbench

There were several lessons to be learned from this course some of which are briefly described below with regards to the use of FE technique in project. Some of the more general learning outcomes relative to solved project were:

Mesh density:

- The number of elements/nodes affect whether the solution has converged
- The engineer needs to determine what the convergence criteria will be and what tolerance is acceptable
- No effort was made to create mapped meshes or reduce the element count while retaining mesh convergence
- Mesh density is critical to obtaining a reasonable FEA simulation result

Element type

- Limitations from using assumptions such as plane-stress need to be considered since they may affect the results particularly if there are other stress components due to other loads
- Effect of higher order, lower order elements, or other elements options such as reduced integration must be understood by the engineer.
- The choice of element type (HO, LO, visco-elastic, etc.) and options (plane-stress/strain, reduced integration, etc.) are also critical to obtaining a reasonable FEA simulation result
- Although higher order elements can be better suited to curved surfaces with its mid-side node, lower order elements are often suggested for plasticity which was not an aspect for this project.





# Jayawant Shikshan Prasarak Mandal's JSPM Narhe Technical Campus

S. No. 102/2 and 14/9, Narhe, Tal: Haveli, Dist: Pune - 411041  
Phone : +91 20 2460 8700, 701, 702 Email : [director@jspmnc.edu.in](mailto:director@jspmnc.edu.in) Web : [www.jspmnc.edu.in](http://www.jspmnc.edu.in)  
Affiliated to Savitribai Phule Pune University, Approved by AICTE New Delhi and DTE Maharashtra.  
DTE Code : 6755 PUN Code : CEGPD10070 AISHE Code : C-45674



**Prof.(Dr.)T. J.Sawant**  
D.E.E. - B.E. (Electrical), Ph.D., MISTE  
Founder - Secretary

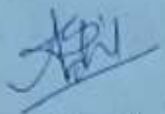
**Prof.(Dr.) R.K.Lad**  
D.E. (Civil), M.C. (Env. Engg.), Ph.D. (Engg.)  
DIRECTOR

Course Name: Machine Learning and Data Science.

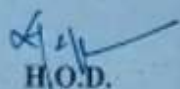
Instructor: 1. Dr. M. M. Sardeshmukh

2. Mrs. S. N. Pawar

| Session    | Date      | Topic   | Duration<br>(in Hrs) |
|------------|-----------|---|----------------------|
| Session 1  | 3-01-2022 | Overview of statistical linear models   | 2                    |
| Session 2  | 3-01-2022 | Overview of residuals   | 2                    |
| Session 3  | 3-01-2022 | Overview of regression inference  | 2                    |
| Session 4  | 4-01-2022 | Generalized linear models, logistic regression                                | 2                    |
| Session 5  | 4-01-2022 | Interpretation of odds and odds ratios  | 2                    |
| Session 6  | 4-01-2022 | Maximum likelihood estimation in Poisson regression                           | 2                    |
| Session 7  | 5-01-2022 | Maximum likelihood estimation in logistic regression                          | 2                    |
| Session 8  | 5-01-2022 | Interpreting logistic regression  | 2                    |
| Session 9  | 5-01-2022 | Visualizing fitting logistic regression curves                                | 2                    |
| Session 10 | 6-01-2022 | Support Vector Machine classification algorithm                               | 2                    |
| Session 11 | 6-01-2022 | Introduction to ensemble and its techniques                                   | 2                    |
| Session 12 | 6-01-2022 | Bagging and Bootstrap ensemble methods  | 2                    |
| Session 13 | 7-01-2022 | Overview of clustering and unsupervised learning                              | 2                    |
| Session 14 | 7-01-2022 | Introduction to clustering methods :Partitioning methods<br>K-Means algorithm | 2                    |
| Session 15 | 7-01-2022 | Density based method: Density-Based Spatial<br>Clustering                     | 2                    |

  
**Program Coordinator**  
Mrs. A. S. Patil



  
**H.O.D.**  
Dr. M. M. Sardeshmukh  
HEAD  
Dept. of Electronics & Telecom. Engg.  
JSPM Narhe Technical Campus,  
Narhe, Pune - 411041



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DTE Code : 6755 PUN Code : CEOP019070 AIBHE Code : C-45874



**Prof. (Dr.) T. J. Sawant**  
D.E.C., B.E. (Electronics), Ph.D., MISTC  
Founder - Secretary

**Prof. (Dr.) R.K. Lad**  
B.E. (Civil), M.E. (Elec. Engg.), Ph.D. (Engg.)  
DIRECTOR

**Name of the Course:** Machine Learning and Data Science

**Course Code:** 22ETCML

**Program Outcome**

**Student will able to attain following knowledge and skill**

1. Students will become proficient in the statistical analysis of data and the use of computation tools for data analysis.
2. Students will apply statistical and computational tools to applied problems.
3. Students will clearly communicate the results in both written reports and oral presentations.
4. Students will understand the importance of proper data management.
5. Students will be documentation of work to allow reproducibility of results, and how to assess the ethical considerations of a data science project.

Program Coordinator

Mrs. A. S. Patil



H.O.D.

**Dr. M.M. Sardeshmukh**  
Dept. of Electronics & Telecom. Engg.  
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**Course Name : Android Application Development**

**Course Code : 22MCAAAD**

**Instructor : Prof.S.M.Deshmukh**

**CONTENTS**

| Sr.No | Topic  | Duration (Hrs) |
|-------|--|----------------|
| 1     | <ul style="list-style-type: none"><li>• Introduction to mobile computing, installing of required software and preparing the working environment, creating your first Android Application</li><li>• Layouts, Views, Resources</li><li>• Activities, Intents</li></ul>   | 6              |
| 2     | <ul style="list-style-type: none"><li>• Background tasks, Connecting to the Internet</li><li>• Fragments, Preferences</li><li>• User Interaction – input, menu items, custom views</li><li>• User Experience – themes and styles, material design, adaptive layouts, accessibility, localization, debugging the UI</li></ul> | 12             |
| 3     | <ul style="list-style-type: none"><li>• Storing Data, SQLite database</li><li>• Sharing Data, content resolvers and providers, loaders to load data</li><li>• Services, background work, alarms, broadcast receivers</li></ul>   | 12             |



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**Program Outcome:**

1. Strongly mapped as students will be able to gain the knowledge of mobile application development using Android development environment.
2. Strongly mapped as designing and implementation is required to build the mobile application.
3. Slightly mapped as students will be able to gain the knowledge of storing, sharing and retrieving the data in Android Application.
4. Moderately mapped as students learn modern IDE tools to develop android applications (Android development environment).
5. Strongly mapped as students will be able to create mobile application using activity, views, services, content providers and receivers

**Prof.S.M.Deshmukh**  
**Program Coordinator**

**Prof.Dr.S.S.Solanki**  
**Dean MCA**

**Dean**  
**Dept. of MCA**  
**JSPM Narhe Technical Campus,**  
**Narhe, Pune - 41**



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**Prof.(Dr.)T. J.Sawant**  
D.E.E., B.E.(Electrical), Ph.D., MISTE  
Founder - Secretary

**Prof.(Dr.) S.A.Choudhari**  
B.E.(CWM), M.E.(WRE) Ph.D.(Engg.)  
DIRECTOR

**Course Name;** Innovative Venture Plan

**Course Code:** IVP 22

**Instructor:**

1. Mr. Sagar Satish Waghmode
2. Mr. Amarsingh Rajpurohit

## Contents

| Session    | Topic   | Duration (Hr) |
|------------|---|---------------|
| Session 1  | The entrepreneur, Profile analysis, behavior and motivations Lean Start -up, The entrepreneurial ecosystem, Entrepreneurs and strategic decisions   |               |
| Session 2  | Sustainability of Entrepreneurship: Dilemmas of an entrepreneur for success; Handling doubts on survival of business  | 03            |
| Session 3  | Causes of failure-Product/ market, financing, managerial Resilience. Legal Fundamentals   | 03            |
| Session 4  | Entrepreneurial Opportunity Search and Identification; Market Intelligence, Market analysis, Market research. Customer validation, developing your business model   | 03            |
| Session 5  | Go-to-Market Strategy. The role of selling in a startup, Sales forecasting for startups.  | 03            |
| Session 6  | Planning/Budgeting, Developing a financial roadmap, financial statements: the four components, How to budget for startup success, Bootstrapping and alternative sources of funding.                                 | 03            |
| Session 7  | Building and managing the founder team, Attracting and retaining the right people. The Team - Board/Governance. The role of a successful board.   | 03            |
| Session 8  | Legal Matters- Organizational form-partnership, sole proprietorship, Tax, Legal expenses, hiring the service Employee providers. management and leadership in the workforce.  | 03            |
| Session 9  | Need & Objectives, Target audience. Contents - Cover page and table of contents, Executive summary, Description of the current situation.   | 03            |
| Session 10 | Business Plan - Elevator pitch, Building a strong presentation, innovative methods of presenting a business plan -mind map, animated videos, etc. funding requirements, Risk analysis and possible exit strategies. | 03            |

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Course Name : **Innovative Venture Plan**

Course Code : **IVP 22**

Trainer : **1. Mr.Sagar Satish Waghmode**  
**2. Mr.Amarsingh Rajpurohit**

### **Program Outcome**

1. Students will demonstrate the ability to identify and evaluate opportunities for innovation and entrepreneurship, leveraging market research, trend analysis, and customer insights to uncover unmet needs or untapped markets.
2. Students will generate creative and original business ideas that address identified opportunities, employing techniques such as brainstorming, design thinking and problem-solving to generate innovative solutions.
3. Students will develop a comprehensive business plan for their innovative venture, including elements such as market analysis, competitive positioning, value proposition, revenue model, marketing strategy, operational plan, and financial projections.
4. Students will demonstrate the feasibility and viability of their venture through rigorous analysis and validation of key assumptions, market demand, scalability, resource requirements, and potential risks and challenges.
5. Students will create prototypes or minimum viable products to test and iterate on their business concept, gathering feedback from potential customers, stakeholders, and mentors to refine their value proposition and business model.

Course co-ordinator

Dean MBA  
JSPM Narhe Technical Campus  
Narhe - 411 041



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Founder - Secretary

**Prof.(Dr.)M.M.Sardeshmukh**  
B.Tech (E&TC) M.Tech (E&TC),Ph.D.(Engg.)  
DIRECTOR

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JSPM'S Narhe Technical Campus, Narhe, Pune-41

2020-2021



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**Course Name : Structural Design using ETAB's**

**Course Code : 20SDETAB**

**Instructor : Prof . D.A. Zamre**

## CONTENTS

| Session   | Topic  | Duration (Hrs) |
|-----------|--|----------------|
| Session 1 | <ul style="list-style-type: none"><li>• Introduction to Structural Engineering</li><li>• Use of Computer Aided Design in Civil Engineering</li><li>• Applications of ETABS</li><li>• Introduction to Interface of ETABS</li><li>• Creating a New File and how to save it</li><li>• Some basic commands<ul style="list-style-type: none"><li>○ Generation of Grid</li><li>○ Editing Grid</li><li>○ Editing Storey Data</li><li>○ Insert Storey</li><li>○ Edit Grid Data</li></ul></li></ul> | 03             |
| Session 2 | <ul style="list-style-type: none"><li>• Introduction Support Systems in ETABS</li><li>• Assigning Supports to Created Geometry</li><li>• Creating Material Properties in ETABS</li><li>• Defining Section Properties for Beams &amp; Columns</li><li>• Practice Session for Geometry Creation</li></ul>  | 03             |
| Session 3 | <ul style="list-style-type: none"><li>• Creating 2D Geometry of the Structure</li><li>• Creating Beams Using Grid Created</li><li>• Creating Columns</li><li>• Creating Slab</li><li>• Converting 2D Structure to 3D</li><li>• Different Viewing Options in ETABS</li><li>• Set Building View Command</li></ul>  | 03             |
| Session 4 | <ul style="list-style-type: none"><li>• Introduction to Types of Loads to be Applied on a Particular Building</li><li>• Manual Load Calculations for The Given Project (by Trainer )</li><li>• Calculations of Loads For All The Projects given( by Students )</li></ul>   | 03             |





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|            |   |          |
|------------|---|----------|
| Session 5  | <ul style="list-style-type: none"><li>• Application of Dead Load And Live Load (Member Loads )<ul style="list-style-type: none"><li>○ Wall Loads</li><li>○ Parapet Load</li><li>○ Stair-Case Load</li><li>○ Projection Load</li><li>○ Water Tank Wall Load</li></ul></li></ul>    | 03       |
| Session 6  | <ul style="list-style-type: none"><li>• Application of floor load dead as well as live load</li><li>• Practice Sessions For Application of Floor Loads</li></ul>  | 02<br>01 |
| Session 7  | <ul style="list-style-type: none"><li>• Analysis of RCC structure and how to see<ul style="list-style-type: none"><li>○ Bending Moment Diagram /Values</li><li>○ Shear Force Diagram /Values</li><li>○ Axial Force Diagram/Values</li><li>○ Support Reactions</li></ul></li></ul> | 03       |
| Session 8  | <ul style="list-style-type: none"><li>• RCC Design</li><li>• How To See Failed Beams and Columns</li><li>• Making All The Members Pass</li><li>• Detailing Concepts Using ETABS Results</li></ul>   | 03       |
| Session 9  | <ul style="list-style-type: none"><li>• Application of Earthquake Load &amp; Wind Load</li></ul>  | 03       |
| Session 10 | <ul style="list-style-type: none"><li>• Introduction to Shear Walls</li><li>• Creating Shear walls</li><li>• Assigning Material Properties and Section Properties to shear walls</li><li>• Analysis and Design of shear wall</li></ul>  | 03       |

Prof. D. A. Zamre

Program Coordinator



Dr. S. A. Choudhari

**HOD**  
Dept. of Civil Engg.  
JSPM Narhe Tech. Campus,  
Narhe, Pune - 41

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**Course Name : Structural Design using ETAB's**

**Course Code : 20SDETAB**

**Program Outcome**

Students will able to attain following knowledge and skill

1. Learn to use ETABS for creating, analyzing, and designing structural models. This includes mastering the software's interface, tools, and features
2. Acquire skills in modeling various types of structures, such as buildings, bridges, and towers, within ETABS. Learn to define different structural elements like beams, columns, slabs, and walls.
3. Understand how to define different types of loads (e.g., dead loads, live loads, wind loads, seismic loads) and create appropriate load combinations according to building codes and standards.
4. To pursue a lifelong career in design field and professional growth for betterment of society
5. This program helps students to become more familiar with the advanced design techniques

*Dambre*

Prof. D. A. Zamre

Program Coordinator

*S. A. Choudhari*

Dr. S. A. Choudhari

HOD

Head  
Dept. of Civil Engg.  
JSPM Narhe Tech. Cam.,  
Narhe, Pune - 41





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**Course Name : Python Programming**

**Course Code : 21COMPPY**

**Instructor : Ms. J.S. Kharat**

**Programme Outcome:** Students will understand how to use variables, work with common Python data types like integers, floats, strings, characters, lists, dictionaries, as well as pandas DataFrames, use basic flow control, including for loops and conditionals, read data from text files, obtain basic summary statistics from data files.

## CONTENTS

| Session    | Topic   | Duration (Hrs) |
|------------|---|----------------|
| Session 1  | Chapter 1: Introduction to Python What is Python and history of Python? Unique features of Python Python-2 and Python-3 differences Install Python and Environment Setup First Python Program Python Identifiers, Keywords and Indentation Comments and document interlude in Python Command line arguments | 02             |
| Session 2  | Chapter 2: List, Ranges & Tuples in Python Introduction Lists in Python More About Lists Understanding Iterators Generators , Comprehensions and Lambda Expressions   | 02             |
| Session 3  | Chapter 3: Python Dictionaries and Sets Introduction to the section Python Dictionaries More on Dictionaries Sets Python Sets Examples  | 02             |
| Session 4  | Chapter 4: Input and Output in Python Reading and writing text files writing Text Files Appending to Files and Challenge Writing Binary Files Manually Using Pickle to Write Binary Files   | 02             |
| Session 5  | Chapter 5: Python built in function Python user defined functions Python packages functions Defining and calling Function   | 02             |
| Session 6  | The anonymous Functions Loops and statement in Python Python Modules & Packages   | 02             |
| Session 7  | Chapter 6: Python Object Oriented Overview of OOP Creating Classes and Objects Accessing attributes Built-In Class Attributes Destroying Objects  | 02             |
| Session 8  | Chapter 7: Python Exceptions Handling What is Exception? Handling an exception try...except...else try-finally clause Argument of an Exception Python Standard Exceptions Raising an exceptions User-Defined Exceptions   | 02             |
| Session 9  | Chapter 8: Python Regular Expressions What are regular expressions? The match Function  | 02             |
| Session 10 | The search Function Matching vs searching Search and Replace Extended Regular Expressions Wildcard  | 02             |
| Session 11 | Chapter 9: Python Multithreaded Programming What is multithreading? Starting a New Thread The Threading   | 02             |



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|            |  |    |
|------------|--|----|
| Session 12 | Chapter 10: Using Databases in Python Python MySQL Database Access Install the MySQLdb and other Packages Create Database Connection CREATE, INSERT, READ, UPDATE and DELETE Operation                           | 02 |
| Session 13 | Chapter 11: Python For Data Analysis Numpy: Introduction to numpy Creating arrays Using arrays and Scalars Indexing Arrays Array Transposition Universal Array Function Array Processing Array Input and Output, | 02 |
| Session 14 | Pandas: What is pandas? Where it is used? Series in pandas Index objects Reindex Drop Entry Selecting Entries Data Alignment Rank and Sort Summary Statics Missing Data Index Hierarchy                          | 02 |
| Session 15 | Chapter 12: Django Web Framework in Python Introduction to Django and Full Stack Web Development   | 02 |

Course Coordinator  
Ms.J.S.Kharat

HOD

Dr. N.M. Ranjan

Department of Computer Engineering  
JSPM Narhe Technical Campus,  
R.S.S.O.E. & R. Narhe, Pune-411041.





# JSPM Narhe Technical Campus

## Department of Mechanical Engineering

S. No. 12/2/2 and 14/9 Narhe, Tal : Haveli, Dist.: Pune - 411041  
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### Yoga for Mind and Body

#### Objective of the Course:

This is an introductory course on Yoga and is specially meant for Engineering Students. The main motive of this Yoga Workshop is to increase awareness regarding Yoga Practice among students .Yoga Practice will help students to remove their stress, boosting their confidence and building strong mindset of students.

#### Learning Outcomes:

At the end of the course the participant will be able to understand awareness regarding giving life-long learning to the students. Yoga Practice will be helping students to remove their stress, boosting their confidence achieving the Program Outcome of communication.

Team leading qualities of the students will improve.

**Duration of the Course (in hours):** 30 hrs (17<sup>th</sup> May 2021 to 23<sup>rd</sup> May 2021)

**Eligible Students:** Mechanical Engineering,

**Expert:** Mr. Kaushal Patidar QCI Certified Yoga Trainer

| Sr. No             | Topic  | Minimum No. of Hours |
|--------------------|--|----------------------|
| 1                  | Introduction to yoga   | 01 hrs               |
| 2                  | Introduction to meditation for college students                                | 02 hrs               |
| 3                  | Foundations of yoga for shoulder health<br>Foundations of yoga for knee health | 02 hrs               |
| 4                  | Foundations of yoga for spine health   | 02 hrs               |
| 5                  | Introduction to Ayurveda and Yoga  | 03 hrs               |
| 6                  | Introduction to chanting and its effects                                       | 03 hrs               |
| 7                  | Introduction to pranayam   | 03 hrs               |
| 8                  | Introduction to sun salutations  | 03 hrs               |
| 9                  | Asana For yoga alignment   | 04 hrs               |
| 10                 | Introduction to yoga for stress relief   | 03 hrs               |
| 11                 | Yoga For Daily Practice  | 04 hrs               |
| <b>Total hours</b> |  | <b>30 hrs</b>        |



# “A Certificate Course on Finite Element Analysis using ANSYS Workbench”

## Objective of the Course:

This course is structured and designed to bridge the gap between theoretical finite element knowledge and its industrial applications by providing plenty of insights into the relationship between physical data (e.g., loads, boundary conditions, material behavior, etc.) and finite element models. The course is intended to provide graduate students, engineers, and researchers working in different specializations of mechanical engineering such as design, thermal, biomedical engineering, automobile engineering, etc. The main objective is to introduce Finite Element Analysis (FEA) technique to solve various real life problems of mechanical engineering by using ANSYS Workbench software package.

## Learning Outcomes:

At the end of the course the participant will be able to use the ANSYS package to solve mechanical engineering analysis problems using FEA techniques. The participants should have some basic concept of finite element method, engineering mechanics, and familiarity with desktop environment.

**Duration of the Course (in hours):** 30 hrs

**Eligible Students:** Mechanical Engineering

**Expert:** Dr. M. A. Kumbhalkar, H.O.D, Mech. Engg. Dept. Second Shift

**Program Code –** 675561220

**Course Code -** 2020ME01

## Outline of Course

| S. No | Topic   | Minimum No. of Hours |
|-------|---|----------------------|
| 1     | Introduction to FEA   | 01 hrs               |
| 2     | ANSYS and its interfaces, Information of Modeling, Meshing and Element type | 02 hrs               |
| 3     | Projects based on Static structural analysis                                | 04 hrs               |
| 4     | Projects based on Static structural analysis                                | 04 hrs               |
| 5     | Projects based on Static structural analysis                                | 02 hrs               |
| 6     | Projects based on Thermal analysis  | 04 hrs               |
| 7     | Projects based on Modal Analysis  | 02 hrs               |
| 8     | Projects based on Harmonic Analysis   | 02 hrs               |
| 9     | Projects based on Transient Analysis  | 04 hrs               |
| 10    | Projects based on Fatigue Analysis  | 03 hrs               |
| 11    | Tutorial / Project Work   | 02 hrs               |
|       | <b>Total hours</b>  | <b>30 hrs</b>        |

## Syllabus

### A Certificate Course on Finite Element Analysis using ANSYS Workbench

Course Curriculum (30 Hrs.)

#### Chapter 1: Introduction to FEA and ANSYS Workbench

- a) Introduction to the Finite Element Method
- b) General Steps of the Finite Element Method
- c) Explanation of 1D, 2D and 3D Elements with examples of ANSYS Elements
- d) Need of FEM
- e) Types of analysis that can be done using ANSYS
- f) Advantages of the Finite Element Method
- g) Limitations of FEA
- h) ANSYS Workbench Overview
- i) Mechanical Overview
- j) The Workbench Environment
- k) The Toolbox
- l) The Project Schematic
- m) Workbench File Management
- n) Working with Units

#### Chapter 2: Mechanical Basics

- a) Basic Analysis Procedure
- b) The Mechanical Interface
- c) Outline Tree and Details
- d) The Mechanical Application Wizard
- e) Scoping Loads and Supports
- f) The Engineering Data Application

#### Chapter 3: Static Structural Analysis

- a) Basics of Static Structural Analysis
- b) Geometry
- c) Material Properties
- d) Analysis Settings
- e) Nodal Loads and Supports
- f) Solving Models
- g) Results and Postprocessing
- h) Fatigue Analysis

#### Chapter 4: Modal, Harmonic, Transient Analysis

- |                                       |   |
|---------------------------------------|---|
| a) Basics of Free Vibration           | f) Static Extension to Harmonic Analysis  |
| b) Geometry                           | g) Frequency response information         |
| c) Solution Setup                     | h) Static Extension to Transient Analysis |
| d) Static Extension to Modal Analysis | i) Time history information               |
| e) Vibration with Prestress           | j) Graphical representation of results    |

**Chapter 5: Thermal Analysis**

- a. Basics Steady State Heat Transfer
- b. Geometry
- c. Material Properties
- d. Thermal Contact
- e. Thermal Boundary Conditions
- f. Solution Options
- g. Results and Postprocessing

**Chapter 6: Results and Post processing**

- a. Viewing Results
- b. Scoping Results
- c. Exporting Results
- d. Coordinates Systems
- e. Solutions Combinations
- f. Stress Singularities
- g. Error Estimation
- h. Convergence
- i. Workshops

**Mode of Evaluation:** Quiz/Assignment/ Seminar/Written Examination



**Course Name - "A Certificate Course on Finite Element Analysis using ANSYS Workbench"**

**PO Addressed: PO1, PO3, PO6, PO11, PO12**

|       |  |
|-------|--|
| PO1.  | <b>Engineering knowledge:</b> Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.  |
| PO3.  | <b>Design/development of solutions:</b> Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations. |
| PO6.  | <b>The engineer and society:</b> Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.   |
| PO11. | <b>Project management and finance:</b> Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.                                       |
| PO12. | <b>Life-long learning:</b> Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.   |

**CO Addressed are-**

**CAD/CAM and Automation Subject – CO3**

**CO3.** Find stresses and displacements of 1D and 2D problems by using FEA.

**Project Stage-I & II – CO1**

**CO1** Implement suitable methodology to solve the Problems pertaining to the mechanical engineering by utilizing the knowledge gained during the curriculum.

**Purpose-** To apply modern analysis tool for the analysis of mechanical components in various domain like design strength analysis, thermal analysis, analysis for composite material, etc.

**Course Outcome:**

Students should be able,

CO1.to apply knowledge for analysis of mechanical components using FEA Package.

CO1.to do static and dynamic structural, thermal, thermo-mechanical, fluid, fatigue analysis of complex three dimension model.

CO3. to demonstrate the ability to evaluate and interpret FE analysis results for design and evaluation purposes.

Establish the correlation between the Courses and the Program Outcomes (POs)

| CO  | PO1 | PO3 | PO6 | PO11 | PO12 |
|-----|-----|-----|-----|------|------|
| CO1 | 3   | 3   | 2   | 1    | 2    |
| CO2 | 3   | 2   | 2   | 1    | 3    |
| CO3 | 3   | 2   | 3   | 3    | 1    |

Justification for mapping CO to corresponding PO

| Course Outcome (CO) | Mapped PO                 | Justification   |
|---------------------|---------------------------|---|
| CO1                 | PO1, PO3, PO6, PO11, PO12 | Apply engineering knowledge by solving problem (PO1, PO3)<br>Understanding of design concept for analysis using finite element package (PO6, PO11, PO12)                          |
| CO2                 | PO1, PO3, PO6, PO11, PO12 | Apply engineering knowledge to analyze mechanical model. (PO1, PO3)<br>Practical significance by analyzing in various way like static structural, fatigue etc. (PO6, PO11, PO12). |
| CO3                 | PO1, PO3, PO6, PO11, PO12 | Apply engineering knowledge by solving problem (PO1, PO3)<br>Interpretation of results for stresses and displacements of 1D, 2D and 3D problems. (PO6, PO11, PO12)                |



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## Department of Mechanical Engineering

A.Y. 2020-21

### A Certificate Course on Finite Element Analysis using ANSYS Workbench

#### Program Outcomes for on course on “A Certificate Course on Finite Element Analysis using ANSYS Workbench

There were several lessons to be learned from this course some of which are briefly described below with regards to the use of FE technique in project. Some of the more general learning outcomes relative to solved project were:

Mesh density:

- The number of elements/nodes affect whether the solution has converged
- The engineer needs to determine what the convergence criteria will be and what tolerance is acceptable
- No effort was made to create mapped meshes or reduce the element count while retaining mesh convergence
- Mesh density is critical to obtaining a reasonable FEA simulation result

Element type

- Limitations from using assumptions such as plane-stress need to be considered since they may affect the results particularly if there are other stress components due to other loads
- Effect of higher order, lower order elements, or other elements options such as reduced integration must be understood by the engineer.
- The choice of element type (HO, LO, visco-elastic, etc.) and options (plane-stress/strain, reduced integration, etc.) are also critical to obtaining a reasonable FEA simulation result
- Although higher order elements can be better suited to curved surfaces with its mid-side node, lower order elements are often suggested for plasticity which was not an aspect for this project.



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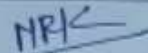


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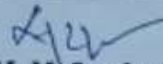
Course Name: **Data Analytics with Python.**

- Instructor: 1. Mrs. N. R. Kadam  
2. Mrs. V. S. Patil  
3. Mrs. K. P. Wagh

| Session    | Date       | Topic  | Duration (in Hrs) |
|------------|------------|--|-------------------|
| Session 1  | 2-11-2020  | Introduction to data analytics.  | 2                 |
| Session 2  | 3-11-2020  | Installing Python/Jupyter/IPython on Windows   | 2                 |
| Session 3  | 4-11-2020  | Python fundamentals  | 2                 |
| Session 4  | 4-11-2020  | Python fundamentals  | 2                 |
| Session 5  | 5-11-2020  | Matplotlib, Pandas, Seaborn: Sactterplot, Barchart, Linechart, Histogram                                 | 2                 |
| Session 6  | 6-11-2020  | Other Graphs: Boxplot, Heatmap, Faceting, Pairplot.  | 2                 |
| Session 7  | 7-11-2020  | Pre-processing Data in Python and Dealing with Missing Values in Python                                  | 2                 |
| Session 8  | 7-11-2020  | Data Formatting in Python and Data Normalization in Python   | 2                 |
| Session 9  | 8-11-2020  | Using the Pandas library to manipulate data (filtering and sorting data, combining files, GroupBy, etc.) | 2                 |
| Session 10 | 9-11-2020  | Using the Pandas library to manipulate data (filtering and sorting data, combining files, GroupBy, etc.) | 2                 |
| Session 11 | 10-11-2020 | Statistical Data Analysis  | 2                 |
| Session 12 | 11-11-2020 | Exploratory Data Analysis  | 2                 |
| Session 13 | 12-11-2020 | Basic concepts of AI & ML,   | 2                 |
| Session 14 | 13-11-2020 | Introduction to various classification algorithms  | 2                 |
| Session 15 | 13-11-2020 | Introduction to Model Development  | 2                 |

  
Mrs. N.R.Kadam  
Program Coordinator



  
Dr. M. M. Sardeshmukh

HOD  
Dept. of Electronics & Telecom. Engg.  
JSPM Narhe Technical Campus,  
Narhe, Pune - 411041



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**Name of the Course: Data Analytics using Python**

**Course Code: 21ETCDAP**

**Program Outcome**

**Student will able to attain following knowledge and skill**

1. Implement statistical analysis techniques for solving practical problems.
2. Perform statistical analysis on variety of data.
3. Practically realize the working experiments of Python using Hadoop.
4. Perform appropriate statistical tests using R and visualize the outcome.
5. Understands the applications using Map Reduce Concepts.
6. Develop Big Data Solutions using Hadoop Eco System.
7. Manage Job Execution in Hadoop Environment.

Mrs. N.R.Kadam

Program Coordinator

Dr. M.M.Sardeshmukh

HOD

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**Course Name :** How do we keep adding learning and experiences from day 1 of MBA

**Course Code:** 21MBALE

**Speaker:** Mr. Rahul Bohra

**CONTENTS**

| Session   | Topic   | Duration (Hrs) |
|-----------|---|----------------|
| Session 1 | Introduction to Maximizing Learning and Experiences                     | 06             |
| Session 2 | Effective Study Techniques, Experiential Learning Opportunities         | 06             |
| Session 3 | Building a Learning Community   | 06             |
| Session 4 | Networking and Relationship Building, Reflecting on Learning and Growth | 06             |
| Session 5 | Final Project Presentations   | 06             |
|           | Total   | 30             |

  
Course co-ordinator

  
Dean MBA

Dean  
MBA Department  
JSPM Narhe Technical Campus  
411 041



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**Course Name :** How do we keep adding learning and experiences from day 1 of MBA

**Course Code:** 21MBALE

**Speaker:** Mr. Rahul Bohra

### Program outcome

1. Foster a culture of continuous learning where students are encouraged to seek out new knowledge and skills both inside and outside the classroom.
2. Design curriculum and learning experiences that bridge theory with real-world application, allowing students to immediately apply what they learn in practical settings.
3. Provide a variety of experiential learning opportunities such as case studies, simulations, internships, consulting projects, and field visits that expose students to diverse business environments and challenges.
4. Offer flexibility for students to pursue personalized learning paths based on their interests, career goals, and learning styles, allowing them to delve deeper into areas of specialization from the outset.

Course co-ordinator

Dean MBA

MBA Department  
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**Course Name : Parallel Computing**

**Course Code : 20MCAPC**

**Instructor : Prof. S. R. Lende**

Prof. S.M. Deshmukh

**Program Outcome:**

After attending the program students will be able to

1. Understand implicit and explicit parallel platform
2. Decompose given problem into many sub problems using different decomposition techniques.
3. Use different performance metrics for analysis of parallel algorithms.
4. Use message passing library for communication among process running on parallel platform.
5. Develop parallel algorithms for shared address space platform using multithreading.
6. Develop parallel algorithms for tightly coupled and loosely coupled parallel systems for various applications.

**CONTENTS**

| Sr.No | Topic  | Duration (Hrs) |
|-------|--|----------------|
| 1     | <ul style="list-style-type: none"><li>• Principles of parallel algorithm design<ul style="list-style-type: none"><li>•decomposition techniques</li><li>•mapping &amp; scheduling computation</li><li>•templates</li></ul></li><li>•Programming shared-address space systems</li><li>•Cilk Plus</li><li>•OpenMP</li><li>•Pthreads</li></ul>   | 6              |
| 2     | <ul style="list-style-type: none"><li>• Parallel computer architectures<ul style="list-style-type: none"><li>•shared memory systems and cache coherence</li><li>•distributed-memory systems</li><li>•interconnection networks and routing</li></ul></li><li>•Programming scalable systems<ul style="list-style-type: none"><li>•message passing: MPI</li><li>•global address space languages</li></ul></li></ul> | 12             |





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|   |  |    |
|---|--|----|
|   | <ul style="list-style-type: none"><li>•Analytical modeling of program performance<ul style="list-style-type: none"><li>•speedup, efficiency, scalability</li><li>•cost optimality</li><li>•is efficiency</li></ul></li></ul>   |    |
| 3 | <ul style="list-style-type: none"><li>• Collective communication</li><li>•Synchronization</li><li>•Non-numerical algorithms<ul style="list-style-type: none"><li>•sorting</li><li>•graphs</li></ul></li><li>•Numerical algorithms<ul style="list-style-type: none"><li>•dense matrix algorithms</li><li>•sparse matrix algorithms</li></ul></li><li>•Performance measurement and analysis of parallel programs</li><li>•GPU Programming</li><li>•Problem solving on clusters using MapReduce</li><li>•Warehouse-scale computing</li><li>• Practice Session for Geometry Creation</li></ul> | 12 |

Prof. S. R. Lende

Program Coordinator

Prof. Dr. S. S. Solanki

Dean MCA

**Dean**

Dept. of MCA

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Narhe, Pune - 41



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**Prof.(Dr.)T. J.Sawant**  
D.E.E., B.E.(Electrical),Ph.D., MISTE  
Founder - Secretary

**Prof.(Dr.)M.M.Sardeshmukh**  
B.Tech (E&TC) M.Tech (E&TC),Ph.D.(Engg.)  
DIRECTOR

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JSPM'S Narhe Technical Campus, Narhe, Pune-41

2019-2020



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**Course Name : MATLAB Simulink for System Modeling**

**Course Code : 20COMPMT**

**Instructor : Mr.A.R.Uttarkar**

**Programme Outcome :** Students will able to simulink is the platform for Model-Based Design that supports system-level design, simulation, automatic code generation, and continuous test and verification of embedded systems. Key capabilities include: A graphical editor for modeling all components of a system. The ability to model a nonlinear system, which a transfer function is unable to do

**CONTENTS**

| Session   | Topic  | Duration (Hrs) |
|-----------|--|----------------|
| Session 1 | Introductory Sessions Of MATLAB Training Course Why MATLAB<br>What Are Toolboxes<br>MATLAB Interface<br>Introduction To Arrays And Matrices<br>MATLAB File Types<br>Basics Of MATLAB Programming | 02             |
| Session 2 | Handling Data And Data Flow In MATLAB<br>Data Types<br>Creating Variables<br>Scalars, Vectors And Matrix Operations & Operators<br>Importing & Exporting Of Data<br>File Input-Output            | 02             |
| Session 3 | File Editing And Debugging In MATLAB<br>Writing Script Files<br>Writing Function Files<br>Inserting Breakpoints And Debugging<br>Error Correction  | 02             |
| Session 4 | MATLAB Graphics I<br>Simple Graphics & Types<br>Plotting Functions<br>Creating And Editing Plots (2D & 3D)<br>Handling Graphics  | 02             |
| Session 5 | MATLAB Graphics II<br>Introduction To Graphical User Interfaces (GUI)<br>GUI Tools<br>Creating Functioning GUIs  | 02             |
| Session 6 | MATLAB Programming II<br>Probability & Statistics<br>Cells & Structures<br>Performance Measures<br>Introduction To Symbolic Math<br>Symbolic Operations  | 02             |
| Session 7 | Introduction To MATLAB Toolboxes   | 02             |



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|            |  |    |
|------------|--|----|
|            | Signal Processing Toolbox In MATLAB<br>Image Acquisition Toolbox In MATLAB<br>Image Processing Toolbox In MATLAB   |    |
| Session 8  | Data Acquisition & Signal Processing Toolbox Of MATLAB<br>Basics Of Signal Processing<br>Representing & Analyzing Signals  | 02 |
| Session 9  | Analog Input Acquisition<br>Transforms Computation<br>Analog & Digital Filter Designing  | 02 |
| Session 10 | Image Acquisition & Image Processing Toolbox<br>Introduction To Image Processing<br>Images In MATLAB<br>Spatial Referencing<br>Image Enhancement<br>Morphological Processing<br>Using Image Tool | 02 |
| Session 11 | Image Data Acquisition<br>Reading And Writing Images<br>Converting Between Image Types And Classes<br>Simple Image Arithmetic<br>Image Transformations   | 02 |
| Session 12 | Spatial Referencing<br>Image Enhancement<br>Morphological Processing<br>Using Image Tool   | 02 |
| Session 13 | Introduction To SIMULINK<br>What Is SIMULINK<br>Importance<br>Mathematical Modeling<br>Converting Mathematical Model Into SIMULINK Model   | 02 |
| Session 14 | SIMULINK Interface<br>Libraries & Tools<br>Sources & Sinks<br>Building Systems   | 02 |
| Session 15 | Creating Systems & Subsystems<br>Solver Configuration  | 02 |

*ARV*  
Course Coordinator  
Mr.A.R.Uttarkar



*hRanjan*  
Head  
HOD  
Department of Computer Engineering  
JSPM Narhe Technical Campus  
R.S.S.O.E. & R. Narhe, Pune-411041

# JSPM Narhe Technical Campus

## Department of Mechanical Engineering

### “Course on Pre-processing using Hypermesh”

#### Course Overview:

This comprehensive course is designed to equip mechanical engineering professionals with the essential skills needed to proficiently use Hypermesh for finite element analysis (FEA) pre-processing tasks. Participants will learn fundamental concepts and practical techniques required to efficiently create and prepare 3D models for simulation and analysis.

#### Course Objectives:

- Understand the role of pre-processing in the finite element analysis (FEA) workflow.
- Learn to navigate the Hypermesh interface and utilize its key functionalities.
- Develop proficiency in model cleanup, mesh generation, and assembly creation.
- Acquire skills in setting up boundary conditions and material properties for FEA.
- Gain hands-on experience in preparing models for various engineering analyses.

#### Course Outcome:

#### By the end of this course, participants will be able to:

- Independently navigate and utilize Hypermesh for pre-processing tasks.
- Efficiently prepare 3D models for finite element analysis.
- Apply meshing techniques to generate high-quality meshes.
- Setup boundary conditions and material properties necessary for accurate simulations.
- Identify and resolve pre-processing issues to ensure robust analysis outcomes.

**Duration of the Course (in hours):** 30 hrs

**Eligible Students:** Mechanical Engineering,

**Expert:** Prof. A.S. Patil, Assistant Professor, Mech. Engg. Dept.

#### Course-PO Mapping (Course to Program Outcome Mapping):

This course aligns with the following Program Outcomes (PO) of the Mechanical Engineering Department at JSPM NTC Narhe:

PO1: Apply mathematical, scientific, and engineering principles to solve complex problems.



PO2: Identify, formulate, and analyze engineering problems to derive feasible solutions.  
PO3: Design and conduct experiments, analyze data, and interpret results.  
PO4: Utilize modern engineering tools and software effectively in engineering practice.

## “Course on Pre-processing using Hypermesh”

### Course Content:

1. **Introduction to Finite Element Analysis (FEA) and Pre-processing**
  - Overview of FEA process and importance of pre-processing
  - Introduction to Hypermesh and its capabilities
2. **Hypermesh Basics**
  - Hypermesh interface overview
  - Customization and workspace management
3. **Geometry Import and Cleanup**
  - Importing CAD geometries into Hypermesh
  - Geometry cleanup techniques: defeaturing, simplification, and repair
4. **Mesh Generation**
  - Understanding different mesh types (tetrahedral, hexahedral, etc.)
  - Mesh controls and quality assessment
5. **Mesh Editing and Optimization**
  - Node and element editing for improved mesh quality
  - Techniques for mesh optimization and refinement
6. **Assembly Creation and Connections**
  - Building assemblies in Hypermesh
  - Defining part connections, joints, and contacts
7. **Material Assignment and Properties**
  - Assigning materials to components
  - Defining material properties (elasticity, thermal, etc.)
8. **Boundary Conditions and Loads**
  - Applying boundary conditions (constraints and supports)
  - Defining loads (forces, pressures, temperatures, etc.)
9. **Model Check and Verification**
  - Performing model checks and diagnostics
  - Resolving common issues and errors
10. **Exporting Models for Analysis**
  - Exporting pre-processed models for analysis in FEA software





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## Department of Mechanical Engineering

**A.Y. 2019-2020**

### Program outcomes on Pre-processing using Hypermesh

Altair HyperMesh is a computer-aided design (CAD) program that helps users create meshes for complex models, and the meshed models needed for finite element (FEM) analysis. It can be used to prepare large models, from importing CAD geometry to exporting an analysis run

HyperMesh helps users develop complex and connected products efficiently by leveraging domain knowledge and increasing team productivity. It has a number of panels that can be used to create a mesh based on geometry rather than surfaces. Some companies that use HyperMesh include Lockheed Martin, BorgWarner Inc., Mercedes Benz, and Boeing

HyperMesh's features:

- Skeleton modelling: Simplifies the modelling process and reduces model complexity
- Post-processing and data analysis: Uncovers insights from FEM simulations
- Intuitive user interface: Includes in-app support, workflow guidance, mouse controls, and keyboard shortcuts
- Open and programmable architecture: Integrates with third-party software and supports Python scripting



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Course Name: **Robotics using Arduino.**

Instructor: 1. H. N. Patil

2. N. R. Kadam

| Session    | Date       | Topic                                       | Duration<br>(in Hrs) |
|------------|------------|---|----------------------|
| Session 1  | 6-01-2020  | Introduction to Robots and Robotics         | 2                    |
| Session 2  | 6-01-2020  | Introduction to Arduino                     | 2                    |
| Session 3  | 6-01-2020  | Learning About Sensors                      | 2                    |
| Session 4  | 7-01-2020  | Making Two Sensors Work Together in Arduino | 2                    |
| Session 5  | 7-01-2020  | Robot Kinematics                            | 2                    |
| Session 6  | 7-01-2020  | Robot Kinematics                            | 2                    |
| Session 7  | 8-01-2020  | Trajectory Planning                         | 2                    |
| Session 8  | 8-01-2020  | Singularity Checking                        | 2                    |
| Session 9  | 8-01-2020  | Robot Dynamics                              | 2                    |
| Session 10 | 9-01-2020  | Robot Dynamics                              | 2                    |
| Session 11 | 9-01-2020  | Sensors                                     | 2                    |
| Session 12 | 9-01-2020  | Sensors                                     | 2                    |
| Session 13 | 10-01-2020 | Robot Vision                                | 2                    |
| Session 14 | 10-01-2020 | Robot Motion Planning                       | 2                    |
| Session 15 | 10-01-2020 | Intelligent Robot                           | 2                    |

Prof. H. N. Patil

Program Coordinator



Dr. M. M. Sardeshmukh

HEAD.H.O.D.

Dept. of Electronics & Telecom. Engr.  
JSPM Narhe Technical Campus,  
Narhe, Pune - 411041





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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



**Name of the Course: Robotics using Arduino**

**Course Code: 20ETCRA**

**Program Outcome**

**Student will able to attain following knowledge and skill**

1. Understand the value and importance of learning a coding language.
2. Transform a physical input into a digital input and analyze it.
3. Work to complete a customizable full Arduino project autonomously, from the beginning to the end.
4. Understand the function of electronic sensors and components.
5. Learn to build your own led circuit.
6. Plan and design innovative and fun tools for education.

Prof. H. N. Patil

Program Coordinator

Dr. M. M. Sardeshmukh

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Dept. of Electronics & Telecom. Engr

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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



Course Name : **Soft Skill and Personality Development**

Course Code : **SSPD19**

Trainer : **Mr. Sumit Tamuthkar**

**CONTENTS**

| Session   | Topic  | Duration (Hrs) |
|-----------|--|----------------|
| Session 1 | Foundation of Communication                    | 06             |
| Session 2 | Advanced Communication Skills                  | 06             |
| Session 3 | Soft Skills Development                        | 06             |
| Session 4 | Teamwork and Collaboration & Leadership Skills | 06             |
| Session 5 | Practical Application and Review               | 06             |
|           | Total  | 30             |

  
Course co-ordinator

  
Dean MBA

Department  
Narhe Technical Cam  
Narhe - 411 041



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**Course Name : Soft Skill and Personality Development**

**Course Code : SSPD19**

**Trainer : Mr. Sumit Tamuthkar**

### Program Outcome

1. Program participants should be able to express ideas clearly, listen actively, and adapt their communication style to different situations and audiences.
2. Participants should demonstrate the ability to work effectively in teams, understanding group dynamics, resolving conflicts constructively, and contributing positively to collective goals.
3. Encourage the development of leadership qualities such as decision-making, problem-solving, delegation, and motivation, whether it's leading a project or influencing others.
4. Equip participants with skills to prioritize tasks, manage their time efficiently, and maintain productivity, fostering a sense of accountability and responsibility.

  
Course co-ordinator

  
Dean MBA

Dean  
MBA Department  
JSPM Narhe Technical Campus  
Narhe - 411 041



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**Prof.(Dr.)T. J.Sawant**

D.E.E., B.E.(Electrical),Ph.D., MISTE  
Founder - Secretary

**Prof.(Dr.) R.K.Lad**

B.E.(Civil),M.E.(Env.Engg.) Ph.D.(Engg.)  
DIRECTOR

**Course Name : Application of MATLAB in Civil Engineering**

**Course Code : 20MATLAB**

**Instructor : Prof . V.P. Padmawar, Asst.Professor,Civil Engg Dept.**

**Duration of course : 30 Hr's**

## CONTENTS

| Sr No | Topics   | Duration |
|-------|--|----------|
| 1     | • Introduction of MATLAB & Application   | 3 Hr's   |
| 2     | • Determine resultant force & moment of plane or space force                       | 3 Hr's   |
| 3     | • Calculation of Reaction & Bending Moment of beam & frame                         | 3 Hr's   |
| 4     | • Plotting shear force and bending moment diagram using force equilibrium          | 3 Hr's   |
| 5     | • Calculation cross section area properties for sections                           | 3 Hr's   |
| 6     | • Practice Session   | 3 Hr's   |
| 7     | • Analysis of beam & frame using flexibility method having more than three unknown | 3 Hr's   |
| 8     | • Analysis of beam & frame using stiffness method having more than three unknown   | 3 Hr's   |
| 9     | • Introduction of interpretation using mathematical operations                     | 3 Hr's   |
| 10    | • Doubt clearing & Practice Session  | 3 Hr's   |

*V.P. Padmawar*

Prof. V.P. Padmawar

Program Coordinator



*S. A. Choudhari*

Dr. S. A Choudhari

Head

Dept HOD, Engg.

JSPM Narhe Tech. Campus,

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**Prof.(Dr.) R.K.Lad**

B.E.(Civil), M.E.(Env.Engg.) Ph.D.(Engg.)  
DIRECTOR

**Course Name : Application of MATLAB in Civil Engineering**

**Course Code : 20MATLAB**

**Duration of course : 30 Hrs**

## **Program Outcome**

Students will able to attain following knowledge and skill

1. Students gain experience with complex computations and simulations, improving their ability to solve engineering problems. MATLAB's versatile functions enable them to tackle complex mathematical operations and understand their results.
2. MATLAB is used to simulate structural behavior and analyze stress, strain, and load distributions. Students learn how to use MATLAB to model structures, perform finite element analysis, and assess safety and stability. This knowledge is essential for designing safe and efficient structures
3. MATLAB can integrate with other engineering software, such as AutoCAD, SolidWorks, and GIS tools. This interoperability provides a broader context for civil engineering students, enabling them to work with different types of software commonly used in industry.
4. This hands-on approach allows students to apply theoretical knowledge to practical scenarios, preparing them for real engineering challenges.

Prof. V.P. Padmawar

Program Coordinator



Dr. S. A Choudhari

HOD,  
Head  
Dept. of Civil Engg.  
JSPM Narhe Tech. Campus,  
Narhe, Pune - 41



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DIRECTOR

**Course Title: - Red Hat Linux**

**Course Code: MCA RH**

**Instructor: Mr.Vilas Gaikwad**

**CONTENTS**

| Module                             | Topic                                   | Learning Objectives  | Duration |
|------------------------------------|---|--|----------|
| Getting started with Red Hat Linux | Linux, introduction to Command line     | What is Linux, Accessing the Command Line, Accessing the Command Line Using the Desktop, Executing Commands Using the Bash Shell       | 8        |
| Physical Storage                   | Managing Files                          | Managing Files from command line, Creating viewing and editing text file, controlling access to the file , Accessing Linux file system | 10       |
| Linux Processor                    | Monitoring and managing Linux Processor | Controlling services and daemons, Configuring and Securing SSH, Analyzing and Storing Logs,  | 12       |
| Total                              |   |  | 30       |

*Tekale*

Prof.A.M.Tekale

Program Coordinator

*S.S. Solanki*

Dr. S. S. Solanki

**Dean MCA**  
Dept. of MCA  
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**Program Outcome:**

1. The Red Hat Linux Program delivers industry-leading developer tools, instructional resources, and an ecosystem of experts to help Linux programmers maximize productivity in building great Linux applications.
2. Red Hat Program delivers a comprehensive suite of runtime languages and open source databases on a separate life cycle with a more frequent release cadence. Hence you can take advantage of new innovations as you build and deploy modern web apps.
3. Learn new concepts from industry experts
4. Gain a foundational understanding of a subject or tool.
5. Develop job-relevant skills with hands-on projects.

  
**Prof. A. M. Tekale**  
**Program Coordinator**

  
**Dr. S. S. Solanki**  
**Dean(MCA)**  
**Dean**  
**Dept. of MCA**  
**JSPM Narhe Technical Campus,**  
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Founder - Secretary

**Prof.(Dr.)M.M.Sardeshmukh**  
B.Tech (E&TC) M.Tech (E&TC),Ph.D.(Engg.)  
DIRECTOR

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JSPM'S Narhe Technical Campus, Narhe, Pune-41

2018-2019





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**Prof.(Dr.) R.K.Lad**

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DIRECTOR

## Course Title: - Basics of Communication and Employability Skills Development

Course Code: 19BCESD

Instructor: Prof. Jayant Kulkarni

Prof. Neelam V. Chaple

### CONTENTS

| Module                 | Topic                  | Learning Objectives  | Duration |
|------------------------|------------------------|--|----------|
| Employability Skills   | S-T-A-R Techniques     | Enhancement of the employability of the students through development of their skills | 6        |
| Interpersonal Skill    | 3P'S of Interview      | Improve interpersonal skills and presentation skill of students                      | 8        |
| Assertiveness          | Guess the emotion game | Personality Development of the students  | 5        |
| Critical Thinking      | Origami                | Preparation of Group Discussion , Personal Interview, how to write/form your CV      | 4        |
| Time Management        | Types and rules of GD  | Improve interpersonal skills and presentation skill of students                      | 5        |
| How to prepare your CV | Group Activity         | Preparation of Group Discussion , Personal Interview, how to write/form your CV      | 2        |
|                        |                        | Total  | 30       |

*N Chaple*

Prof. Neelam V. Chaple

Program Coordinator

*S. A. Choudhari*

Dr. S. A. Choudhari



**HOD**  
Dept. of Civil Engg.  
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B.E.(Civil),M.E.(Env.Engg.) Ph.D.(Engg.)  
DIRECTOR

## Course Title: - Basics of Communication and Employability Skills Development

Course Code: 19BCESD

### Program Outcome

Students will able to attain following knowledge and skill:

1. Improved ability to articulate ideas clearly, confidently, and effectively in both informal and formal settings
2. Enhanced skills in writing reports, emails, and other business-related documents with clarity and coherence
3. Development of a strong work ethic, including responsibility, dependability, and punctuality.
4. Enhanced ability to make informed decisions using critical thinking and analytical skills.
5. Enhanced ability to create and deliver compelling presentations, including use of visual aids and audience engagement techniques.
6. Understanding career paths, goal setting, and how to develop a personal career strategy.

Prof. Neelam V. Chaple

Program Coordinator

Dr. S. As Choudhari

HOD  
Head

Dept. of Civil Engg.  
JSPM Narhe Tech. Campus,  
Narhe P. ...





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DIRECTOR

**Name of Course : Interdisciplinary Course on 2D and 3D Solid Modeling using AutoCAD**

**Course Code : 18CAD01**

**Objective of the Course :**

Students will learn the recommended workflows and basic skills required to navigate AutoCAD. Using hands-on exercises representing real-world, industry-specific design scenarios, students explore the fundamental concepts and workflows for creating 3D models using AutoCAD. Students learn how to create and modify both solid and surface models. This courseware also teaches students how to present their designs while they are still being created, using visualization tools such as visual styles, model walk and flythrough, materials, and lighting. Students also learn how to output 3D models from AutoCAD to either paper or a distributable, electronic version.

**Duration of the Course (in hours): 30 hrs**

**Expert:** Prof. Bharat Aher, Assistant Professor, Mech. Engg. Dept.

Prof. S.S. Deshpande, Assistant Professor, Civil Engg. Dept.

**Curriculum**

| S. No | Topic                     | Minimum No. of Hours |
|-------|---------------------------|----------------------|
| 1.    | AutoCAD Basics            | 01 hrs               |
| 2.    | Working with Drawing Aids | 01 hrs               |
| 3.    | Editing Sketched Objects  | 02 hrs               |
| 4.    | Text and Applications     | 02 hrs               |
| 5.    | Working with Dimensions   | 02 hrs               |
| 6.    | Blocks and Applications   | 02 hrs               |

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DIRECTOR

|     |                                    |               |
|-----|------------------------------------|---------------|
| 7.  | Working with Hatching              | 02 hrs        |
| 8.  | Advanced CAD for 2D                | 02 hrs        |
| 9.  | Plotting and Applications          | 02 hrs        |
| 10. | Isometric Practices                | 02 hrs        |
| 11. | Working with 3D Objects            | 02 hrs        |
| 12. | Modifying and Editing 3D Objects   | 02 hrs        |
| 13. | Solid, Mesh, Surface Modelling     | 02 hrs        |
| 14. | Rendering and Animating Designs    | 02 hrs        |
| 15. | Project (Assignment) Documentation | 04 hrs        |
|     | <b>Total Hrs</b>                   | <b>30 hrs</b> |

Prof. S. S. Deshpande

Program Coordinator

Dr. S. A. Choudhari



HOD  
**Head**  
Dept. of Civil Engg.  
JSPM Narhe Tech. Campus,  
Narhe, Pune - 41



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Founder - Secretary

**Prof.(Dr.) R.K.Lad**  
B.E.(Civil),M.E.(Env.Engg.) Ph.D.(Engg.)  
DIRECTOR


**Name of Course : Interdisciplinary Course on 2D and 3D Solid Modeling using AutoCAD**


**Course Code : 18CAD01**

**Program Outcome**

Students will able to attain following knowledge and skill

1. To foster an ambitious desire to work in design field
2. To update knowledge about AutoCAD to understand design standards
3. To pursue a lifelong career in design field and professional growth for betterment of society
4. Knowledge of corporate compliance requirements and frameworks
5. This program helps students to become more familiar with the advanced design techniques

  
Prof. S. S. Deshpande  
Program Coordinator

  
Dr. S. A. Choudhari

HOD/lead  
Dept. of Civil Engg.  
JSPM Narhe Tech. Campus,  
Narhe, Pune - 41





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**Course Name : Artificial Intelligence**

**Course Code : 19COMPAI**

**Instructor : Ms.M.S.Namose**

**Programme Outcome:** Students will able to identify problems where artificial intelligence techniques are applicable. Apply selected basic AI techniques; judge applicability of more advanced techniques. Participate in the design of systems that act intelligently and learn from experience. Solve basic AI based problems. Define the concept of Artificial Intelligence. Apply AI techniques to real-world problems to develop intelligent systems.

**CONTENTS**

| Session    | Topic  | Duration (Hrs) |
|------------|--|----------------|
| Session 1  | AI problems, foundation of AI and history of AI intelligent agents: Agents and Environments, the concept of rationality,   | 02             |
| Session 2  | The nature of environments, structure of agents, problem solving agents, problem formulation.  | 02             |
| Session 3  | Searching- Searching for solutions, uniformed search strategies – Breadth first search, depth first Search. Search with partial information (Heuristic search)                       | 02             |
| Session 4  | Hill climbing, A* ,AO* Algorithms, Problem reduction, Game Playing-Adversial search,   | 02             |
| Session 5  | Games, mini-max algorithm, optimal decisions in multiplayer games, Problem in Game playing, Alpha-Beta pruning, Evaluation functions   | 02             |
| Session 6  | Knowledge representation issues, predicate logic- logic programming, semantic nets- frames and inheritance, constraint propagation, representing knowledge using rules               | 02             |
| Session 7  | Rules based deduction systems. Reasoning under uncertainty, review of probability, Baye's probabilistic interferences and dempstershafer theory.                                     | 02             |
| Session 8  | First order logic. Inference in first order logic, propositional vs. first order inference, unification & lifts forward chaining,  | 02             |
| Session 9  | Backward chaining, Resolution, Learning from observation Inductive learning ,Decision trees, Explanation based learning, Statistical Learning methods ,Reinforcement Learning        | 02             |
| Session 10 | Expert systems:- Introduction, basic concepts, structure of expert systems, the human element in expert systems how expert systems works, problem areas addressed by expert systems, | 02             |



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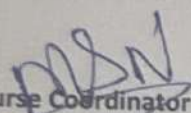
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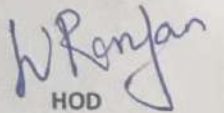
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|            |  |    |
|------------|--|----|
| Session 11 | Expert systems success factors, types of expert systems, expert systems and the internet interacts web, knowledge engineering, scope of knowledge, difficulties, in knowledge acquisition methods of knowledge acquisition | 02 |
| Session 12 | Machine learning, intelligent agents, selecting an appropriate knowledge acquisition method,   | 02 |
| Session 13 | with frames: model based reasoning, case based reasoning,  | 02 |
| Session 14 | Societal impacts reasoning in artificial intelligence, inference with rules,   | 02 |
| Session 15 | Explanation & meta knowledge inference with uncertainty representing uncertainty   | 02 |

  
Course Coordinator  
Ms. M. S. Namose

  
HOD

Dr. N. M. Ranjan  
Head

Department of Computer Engineering  
JSPM Narhe Technical Campus,  
R.S.S.O.E. & R. Narhe, Pune-411041.





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
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Course Name: **Image Processing Using Python.**

Instructor: 1. Mrs. K. P. Wagh  
2. Mrs. H. N. Patil

| Session    | Date       | Topic   | Duration (in Hrs) |
|------------|------------|---|-------------------|
| Session 1  | 7-01-2019  | Introduction to Python libraries for image processing, Basic image manipulation and enhancement techniques.   | 2                 |
| Session 2  | 7-01-2019  | Advanced image manipulation and enhancement techniques, Geometric transformations, understanding image color spaces, Applying color manipulation techniques.  | 2                 |
| Session 3  | 7-01-2019  | Understanding image histograms, applying image smoothing and sharpening techniques, understanding and applying basic and advanced image filtering techniques. | 2                 |
| Session 4  | 8-01-2019  | Image restoration techniques, Edge detection techniques, Feature extraction techniques.   | 2                 |
| Session 5  | 8-01-2019  | Image segmentation, Thresholding techniques, Watershed segmentation.  | 2                 |
| Session 6  | 8-01-2019  | Object detection and recognition, template matching, deep learning for image classification and recognition.  | 2                 |
| Session 7  | 9-01-2019  | Image classification model with Tensor Flow, Advanced deep learning models for medical image processing.  | 2                 |
| Session 8  | 9-01-2019  | Preprocessing, Segmentation and Registration of medical images.   | 2                 |
| Session 9  | 9-01-2019  | Understanding 3D image processing,  | 2                 |
| Session 10 | 10-01-2019 | Image visualization and manipulation, filtering and segmentation.   | 2                 |
| Session 11 | 10-01-2019 | Image compression technique.  | 2                 |
| Session 12 | 10-01-2019 | JPEG and Wavelet-based compression technique.   | 2                 |
| Session 13 | 11-01-2019 | Introduction to image steganography.  | 2                 |
| Session 14 | 11-01-2019 | Hiding data and Extracting hidden data from images using Python.  | 2                 |
| Session 15 | 11-01-2019 | Review of course materials, Final project presentation and wrap-up  | 2                 |

  
Mrs. K. P. Wagh

Program Coordinator



  
Prof. H. N. Patil

H.O.D.  
HEAD

Dept. of Electronics & Telecom. Engg.  
JSPM Narhe Technical Campus,  
Narhe, Pune - 411041





Jayawant Shikshan Prasarak Mandal's  
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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



**Name of the Course: Image Processing Using Python.**

**Course Code: 19ETCIP**

**Program Outcome**

**Student will able to attain following knowledge and skill**

1. Review the fundamental concepts of a digital image processing system.
2. Analyze images in the frequency domain using various transforms.
3. Evaluate the techniques for image enhancement and image restoration.
4. Categorize various compression techniques.
5. Interpret Image compression standards.
6. Interpret image segmentation and representation techniques.

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**Course Name : Communication and soft skill**

**Course Code : CSS18**

**Instructor : Mr.Amit Ghadge**

**CONTENTS**

| Session   | Topic                         | Duration (Hrs) |
|-----------|-------------------------------|----------------|
| Session 1 | Introduction                  | 06             |
| Session 2 | Effective Communication       | 06             |
| Session 3 | Time Management               | 06             |
| Session 4 | Team Work and Collaboration   | 06             |
| Session 5 | Individual presentations Test | 06             |
|           | Total                         | 30             |

  
Course co-ordinator

  
Dean MBA

Dean  
MBA Department  
JSPM Narhe Technical Campus  
Narhe - 411 041



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**Course Name :** Communication and soft skill

**Course Code :** CSS18

**Instructor :** Mr.Amit Ghadge

## Program Outcome

1. Students should demonstrate the ability to express ideas clearly, confidently, and persuasively through spoken language.
2. Students should exhibit active listening skills, including the ability to understand, interpret, and respond appropriately to verbal and nonverbal cues from others.
3. Students should be able to compose clear, coherent, and well-structured written messages tailored to specific purposes, audiences, and contexts, including emails, reports, proposals, and other professional documents.
4. Students should demonstrate proficiency in interpersonal communication, including the ability to establish and maintain positive relationships, resolve conflicts constructively, and collaborate effectively in diverse team settings.
5. Students should cultivate empathy and emotional intelligence, showing an understanding of others' perspectives, feelings, and needs, and demonstrating the ability to communicate and interact with sensitivity, respect, and empathy.
6. Students should develop effective presentation skills, including the ability to organize and deliver engaging, informative, and persuasive presentations using appropriate visual aids and delivery techniques.
7. Students should engage in giving and receiving constructive feedback, as well as self-reflection, continuously improving their communication skills through self-awareness, self-assessment, and active learning.

  
Course Coordinator

  
Dean MBA

Dean  
MBA Department  
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**Prof.(Dr.)T. J.Sawant**  
D.E.E., B.E.(Electrical),Ph.D., MISTE  
Founder - Secretary

**Prof.(Dr.) R.K.Lad**  
B.E.(Civil),M.E.(Env.Engg.) Ph.D.(Engg.)  
DIRECTOR

**Course Title: - Machine Learning**


**Course Code: MCAML**

**Instructor: Miss. Snehal Shinde**

**CONTENTS**

| Module       | Topic                        | Learning Objectives   | Duration |
|--------------|------------------------------|---|----------|
| Introduction | Machine Learning with Python | Python basics, Methods for Machine Learning, Understanding Data with statistics and virtualization for Machine Learning | 8        |
| Algorithms   | Machine Learning Algorithms  | Logistic Regression, Support Vector Machine, decision tree, Random forest, Clustering                                   | 14       |
| Lab Session  | Hands on Sessions            | Lab Session   | 8        |
| Total        |                              |   | 30       |

  
Prof. S.M.Deshmukh  
Program Coordinator

  
Dr. S.S.Solanki  
Dean  
Dept. of MCA  
Dean MCA  
JSPM Narhe Technical Campus,  
Narhe, Pune - 41



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**Program Outcome:**

1. Be able to demonstrate an understanding of advanced knowledge of the practice of machine learning, from vision to formulation, analysis, design, validation and deployment.
2. Be able to tackle complex machine learning problems using contemporary principles, algorithms, technologies, methodologies, and tools.
3. Be able to lead and participate in a team to develop AI and machine learning applications
4. Be able to advance successfully in their profession, and sustain a process of life-long learning in engineering or other professional areas.
5. Be able to communicate effectively and persuasively with a variety of audiences.

**Prof. S. M. Deshmukh**  
Program Coordinator

**Dr. S. S. Solanki**  
Dean MCA

**Dean**  
Dept. of MCA  
JSPM Narhe Technical Campus,  
Narhe, Pune - 41

**Course Name: Interdisciplinary Course on Practical Finite Element Analysis  
using ANSYS & MATLAB**

**PO Addressed: PO1, PO3, PO6, PO11, PO12**

- PO1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- PO11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

**CO Addressed for CAD/CAM and Automation Subject – CO3**

**CO3.** Find stresses and displacements of 1D and 2D problems by using FEA.

**Purpose-** To bridge the gap of theoretical concepts of 1D and 2D problems and practical solutions by the analysis of 2D and 3D components used in the applications of mechanical and civil engineering using modern FEA software.



**Course Outcome:**

Students should be able,

CO1. to apply knowledge for analysis of mechanical components using FEA Package.

CO1. to do static and dynamic structural, thermal, thermo-mechanical, fluid, fatigue analysis of complex three dimension model.

CO3. to demonstrate the ability to evaluate and interpret FEA analysis results for design and evaluation purposes.

Establish the correlation between the Courses and the Program Outcomes (POs)

| CO  | PO1 | PO3 | PO6 | PO11 | PO12 |
|-----|-----|-----|-----|------|------|
| CO1 | 3   | 3   | 2   | 1    | 2    |
| CO2 | 3   | 2   | 2   | 1    | 3    |
| CO3 | 3   | 2   | 3   | 3    | 1    |

Justification for mapping CO to corresponding PO

| Course Outcome (CO) | Mapped PO                 | Justification   |
|---------------------|---------------------------|---|
| CO1                 | PO1, PO3, PO6, PO11, PO12 | Apply engineering knowledge by solving problem (PO1, PO3)<br>Understanding of design concept for analysis using finite element package (PO6, PO11, PO12)                          |
| CO2                 | PO1, PO3, PO6, PO11, PO12 | Apply engineering knowledge to analyze mechanical model. (PO1, PO3)<br>Practical significance by analyzing in various way like static structural, fatigue etc. (PO6, PO11, PO12). |
| CO3                 | PO1, PO3, PO6, PO11, PO12 | Apply engineering knowledge by solving problem (PO1, PO3)<br>Interpretation of results for stresses and displacements of 1D, 2D and 3D problems. (PO6, PO11, PO12)                |





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DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



## Department of Mechanical Engineering

**A.Y. 2018-2019**

### Interdisciplinary course on “Practical Finite Element Analysis using ANSYS & MATLAB

#### Material Selection

- Structural steel is the default material in ANSYS workbench which has to modify or change as per the requirement in analysis.
- The material properties can be added for different material or can be selected and edit from available library.
- S-N curve has to be plot for fatigue analysis as per analytical and experimental values of dynamic model.

#### Boundary Conditions

- Boundary conditions can affect the results.
- Since this project iteratively solved to balance the axial force, the single fixed node was not a deterrent in application for this specific problem which may normally cause local issues on other problems
- The engineer must determine the locations of interest and accurately model them so the model is not polluted

#### Static Structural Analysis

- The method of loading must be considered particularly if local stresses are of interest
- Understand the concept of connection i.e. contact and target element to join components in assembly of product. Selection of connection affects very much on the result in static structural analysis.
- High stresses regions must be modeled in a more representative fashion if an area of interest
- An elastic foundation with contact elements may account for load redistribution and alter the results locally or globally
- Understand the potential load variations and the effect on the final margin of safety, interpretation of results and in post-processing.