

List of SDP A.Y. 2020-21

- Mobile & Web Development
- Introduction to Embedded System and IoT
- Advanced Antenna Design
- Machine Learning and Image Processing using Python
- Value added course on Data Science
- Network Management and Security
- Simulation Using Ansys and CFD
- 3D Modelling and 3D Printing

SIES Graduate School of Technology
Department of Computer Engineering
Organizing
Student Development Program and Internship
Mobile & Web App Development
21 June– 26 June , 2021 10.00 AM to 5.00 PM

Automation is the current need in all Ecommerce field where Mobile & Web App development plays an important role in all aspects .Considering this objective, we will be grooming in recent web & mobile app development Technologies and also providing a platform to showcase students ideas on the same.

Objectives:

This Mobile & Web App Development course is without a doubt the most comprehensive course will be taught in Virtual Online platform. Even if student has zero programming experience, this course will take you from beginner to Intermediate.

Course Contents:

Day 1: Getting Started with Javascript: variables & strings, numbers, arrays, loops, functions, objects, Client side scripting such as form validations.

Day 2: Intermediate Php: Basic programming constructs, Arrays, functions, GET POST methods , Server side scripting, Basics of Database, Handling MYSQL Database using SQL Queries, PHP - Server Side Scripting , MYSQL Database Connectivity

Day 3 & 4: Flutter : Setting up Flutter, Introducing Widgets, Common Widgets in Flutter and Navigation, Handling User Input, User Interface, Flutter with Firebase.

Day 5 & 6: Node JS : Introduction and Foundation, Node Projects, Working with asynchronous programming, Building HTTP server with Node.js using HTTP APIs., Buffers, Streams, Events, Multiprocessing in Node JS.

Students will be developing Mobile & Web App using above technologies.

Who Should Attend: Any student from SE (all branches)

Highlight : Day 6 will be covered by Industry Expert.

Course Fees: No fees for SIES students, 500 for outside SIES.

Certification: Internship Certificate will be provided after completion of COURSE.



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Internship: At the end of 6 days program participants will undergo 15 days internship covering developing secure Mobile & web app, solution for various organizations (For ex: Bank Sector/Medical Sector/Insurance/IT Sector).

Outcome:

- Students will be able to design App and Host it on server.
- Students will be able to make Dynamic App using Node JS & Php

Contact for Registration:

Prof. Sunil K Punjabi : Email-id: sunilp@sies.edu.in Mo: 8898528620



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Day wise Schedule

Date	Day 1 (28/06/2021)	Day 2 (29/06/2021)	Day 3 (30/06/2021)	Day 4 (01/07/2021)	Day 5 (02/07/2021)	Day 6 (03/07/2021)
Resource person	Mr. Sunil K Punjabi	Ms. Masooda Modak	Ms. Jyoti Tryambake	Ms. Masooda & Ms. Jyoti	Mr. Sunil K Punjabi	Mr. Nilesh Dalvi
Time	10.00 am - 1.00 pm	10.00 am - 1.00 pm	10.00 am - 1.00 pm	10.00 am - 1.00 pm	10.00 am - 1.00 pm	10.00 am - 1.00 pm
	Introduction to Java script : variables & strings, numbers, arrays , loops, Hands on session	Intermediate PHP : Basic programming constructs, Arrays, functions, GET POST methods , Server side scripting,	Introduction to flutter : Setting up Flutter, Introducing Widgets, Common Widgets in Flutter and Navigation,	Flutter : Handling User Input, User Interface, Flutter with Firebase	Introduction to Node JS : Introduction and Foundation, Node JS Installation, Node JS Basics, Node JS NPM, Build Restful APIs with Node JS	Node JS with MongoDB, Node JS Projects, Working with asynchronous programming, Buffers, Streams, Events, Multiprocessing in Node JS.
Date	Day 1 (28/06/2021)	Day 2 (29/06/2021)	Day 3 (30/06/2021)	Day 4 (01/07/2021)	Day 5 (02/07/2021)	Day 6 (03/07/2021)
Resource person	Mr. Sunil K Punjabi	Ms. Masooda Modak	Ms. Jyoti Tryambake	Ms. Masooda & Ms. Jyoti	Mr. Sunil K Punjabi	Mr. Nilesh Dalvi
Time	2.00 pm - 5.00 pm	2.00 pm - 5.00 pm	2.00 pm - 5.00 pm	2.00 pm - 5.00 pm	2.00 pm - 5.00 pm	2.00 pm - 5.00 pm
	functions, objects, Client side scripting such as form validations Hands on session	Basics of Database, Handling MYSQL Database using SQL Queries, PHP - Server Side Scripting , MYSQL Database Connectivity	Hands on session using flutter	Hands on session using flutter	Hands on session using Node JS	Hands on session using Node JS
	Quiz	Quiz	Quiz	Quiz	Quiz	Quiz



SDP on Web & Mobile App Development

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Brochure
Introduction to Embedded System and IoT
28th June 2021 to 3rd July 2021

Click [here](#)

to register

Today's embedded systems development ranges from microprocessor-based control systems to system-on-chip (SoC) design, and device software development. A myriad of implementations can be found in consumer electronics, medical devices, commercial, military applications. Embedded Systems have a very wide application in different domains. This course will help the students to improve the technical skills and give them a better understanding of an Embedded system and Internet of Things.

About Instructors:-


This course will be taught by a team of Embedded system and IoT from ,talk by Mr . Abhay Phansikar , Director of Azilen Technologies , Chairman of IEEE for Bombay Section ,Prof. Vaishali Mangrulkar , SIES GST, Prof. Kintu Patel ,SIESGST and Prof. Pratibha Joshi, SIES GST.

Course Objectives:-

To develop background knowledge Embedded Systems.
To understand designing of embedded systems.
To understand use of wireless sensors/communications with Embedded systems
To understand communication techniques.
To write programs for embedded systems and real time operating systems /IoT

Course Outcomes:

- Understand the embedded Systems with its design metrics.
- Understand various microprocessor/microcontroller based boards with suitable programming language.
- Implement the embedded system with different sensors and peripherals as IoT.
- Implement Embedded systems with different communication protocols as IoT.
- Analyze concepts of Real time operating systems.
- Design embedded systems applications using sensors, peripherals and RTOS.


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• **Content:**

Module	Contents	Hours
1.	Introduction to Embedded System Definition of Embedded System, Embedded Systems Vs General Computing Systems, Classification, Major Application Areas. Characteristics and quality attributes (Design Metric) of embedded system. Real time system's requirements, real time issues, interrupt latency. Embedded Product development life cycle.	4 hrs
2.	Microprocessor and Microcontroller Boards ARM LPC 21XX (2148), Texas MSP 430 lunchbox STM32 boards /PSoC, Intel Galileo.	4 hrs
3.	Sensor Interfacing GLCD, Relays and Motors with motor drivers. BLDC motors and drivers, USB/HDMI camera interfacing	4 hrs
4.	Communication Protocols CAN bus, I2C, MOD bus, SPI, wifi, ZigBee, Bluetooth and putting data on IoT GPS module interfacing, GPS module interfacing	4hrs
5.	Introduction to RTOS Operating system basics, Types of OS, Tasks, process, Threads Multiprocessing and Multitasking, Task scheduling, RTLinux/Implementation with RTOS	4 hrs
6	Introduction to cloud and IoT Implementation on web server, thingspeak, AWS cloud platform for IOT based programming and modelling Expert Talk	2 hrs

Assessment:

1. Students will be assessed based on module wise assignments and quizzes.
2. In this value-added course students will develop Mini projects/Case study based on above concepts.

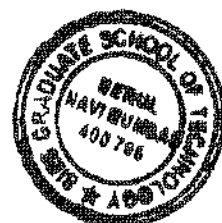
Course Co-ordinator: Prof. Kintu Patel

E-mail ID:- kintup@sies.edu.in

Contact No:7738383680




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Day wise schedule of workshop

Day	Activity
Day 1 15/6/2020	Introduction to Embedded System by an Expert
	Quiz
Day 2 16/6/2020	Microprocessor and Microcontroller Boards ARM LPC 21XX (2148), Texas MSP 430 lunchbox STM32 boards /PSoC, Intel Galileo.
	Quiz
Day 3 17/6/2020	Sensor Interfacing GLCD, Relays and Motors with motor drivers. BLDC motors and drivers, USB/HDMI camera interfacing
	Quiz
Day 4 18/6/2020	Communication Protocols CAN bus, I2C, MOD bus, SPI, wifi, ZigBee, Bluetooth and putting data on IoT GPS module interfacing, GPS module interfacing
	Quiz
Day 5 19/6/2020	Introduction to cloud and IoT Implementation on web server, thingspeak, AWS cloud platform for IOT based programming and modelling Expert Talk
	Quiz
Day 6 22/6/2020	Introduction to RTOS Operating system basics, Types of OS, Tasks, process, Threads Multiprocessing and Multitasking, Task scheduling, RTLinux/Implementation with RTOS
	Quiz


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Brochure

Advanced Antenna Design

June 28 to July 04, 2021

Click [here](#) to register

Although the microstrip antenna has been extensively studied in the past few decades as one of the standard planar antennas, it still has a huge potential for further developments. Microstrip antennas are considered as the most common types of antennas due to their obvious advantages. Since there are several challenges in the design of antennas, a training programme on this topic would be very beneficial to enrich their knowledge and to carry out advanced research in antenna domain. The objective of this SDP is to train the participants in both fundamental and research levels.

About Instructors:

This course will be taught by a team of Dr. K. P. Ray, Professor, Dean & Head, Electronics Engineering and CSE Dept., Defence Institute of Advanced Technology Pune, Mr. Swapnil Gaul, Founder of Numergion (TaraNG), Dr. Shubhangi Kharche, Prof. Vandana Sawant,, Prof. Kintu Patel, SIES GST.


Course Objectives:

Students should be able to
Design and analyse microstrip line.
Develop applications of microstrip line.
Design of line feed rectangular patch antenna and develop its applications.
Design and analysis of electrically small antennas for wireless communication.

Course Outcomes:

- Design and analysis of microstrip line.
- Design of the Patch Antenna.
- Simulation of the Patch Antenna using simulation software HFSS.
- To evolve, develop and improvise different types of patch antennas suitable for numerous applications like microwave communication, radar, mobile communication, IOT applications so on.

Course Content:


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Module	Contents	Hours
1.	Installation and testing of related software.	2 hrs
2.	MICROSTRIP LINE: Design of microstrip line, S parameter analysis, characterization of microstrip line based on length of line, design and simulate impedance matching using quarter wave transformer using HFSS.	2 hrs
3.	RECTANGULAR PATCH ANTENNA AND ITS APPLICATIONS : Introduction to microstrip structure, calculate dimensions of rectangular patch antenna at 2.4GHz, design and simulate line feed rectangular patch antenna for various applications using HFSS.	4 hrs
4.	Design wired antennas and development of microstrip network.	2hrs
4.	Antennas for wireless communication	2hrs
5.	ELECTRICALLY SMALL ANTENNAS Introduction to electrically small antennas, design of electrically small antennas for wireless communication.	4 hrs
6.	WIDE BAND ANTENNA Introduction to wideband antennas, Design of wideband antennas.	2 hrs
7.	Antenna design and latest applications	2 hrs
8.	Mini Project on Design and Simulation of Antenna	8 hrs


Assessment:

1. Students will be assessed based on module wise assignments and quizzes.
2. In this value added course students will develop Mini projects based on above concepts.

Course Co-ordinator: Prof. Vandana Sawant

E mail ID: vandanas@sies.edu.in


Contact no.: 9820755314


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Day wise schedule of workshop

Day	Activity
Day 1 28/6/2021	INSTALLATION OF HFSS BY PROF. VANDANA SAWANT
	DESIGN AND SIMULATION OF MICROSTRIP LINE BY PROF. VANDANA SAWANT
Day 2 29/6/2021	DESIGN, SIMULATION AND OPTIMIZATION OF QUARTERWAVE TRANSFORMER BY PROF. VANDANA SAWANT
	INTRODUCTION TO MICROSTRIP ANTENNA DESIGN, SIMULATION AND OPTIMIZATION OF EDGE FED MICROSTRIP ANTENNA BY PROF. VANDANA SAWANT
Day 3 30/6/2021	DESIGN, SIMULATION AND OPTIMIZATION OF INSET FEED MICROSTRIP ANTENNA BY PROF. VANDANA SAWANT
	ANTENNA DESIGN AND LATEST APPLICATIONS BY DR. K. P. RAY
Day 4 01/7/2021	1G-6G ANTENNA, TYPES, DESIGN, DRAWBACKS, ADVANTAGES AND CHALLENGES. BY DR. SHUBHANGI KHARCHE
	DESIGN OF ELECTRICALLY SMALL ANTENNA BY PROF. KINTU PATEL
Day 5 02/7/2021	SIMULATION OF ELECTRICALLY SMALL ANTENNA BY PROF. KINTU PATEL
	WIRE ANTENNA DESIGN AND DEVELOPMENT OF MICROSTRIP NETWORK BY MR. SWAPNIL GAUL
Day 6 03/7/2021	WIDEBAND ANTENNA, BODY WEARABLE ANTENNA BY PROF. VANDANA SAWANT
	FABRICATION OF ANTENNA AND MINIPROJECT DISTRIBUTION BY PROF. VANDANA SAWANT
Day 7 04/7/2021	MINIPROJECT FOR ONE WEEK


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Brochure



South Indian Education Society's
GRADUATE SCHOOL OF TECHNOLOGY, Navi Mumbai.
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION
ENGINEERING

Machine Learning and Image Processing using Python

June 21 to July 9, 2021

Click [here](#) to register

There is difference between education and knowledge. Education provides learning. While knowledge translates that learning into a career that earns a living. But the truth is, our education system is largely structured around academic learning, leaving the task of turning it into a career to the individual. For the less-privileged though, the only barrier that stands between them and a technocrat is knowledge of practical aspects of technology.

This course is meant to be a hands-on type course, giving students a chance to learn python and its applications in image processing and Machine learning which is considered to be a current trend of technology.

About Instructors:

This course will be taught by a team of software design researchers, Mr. Abhay Phansikar, Director, Agilen Technologies, Mr. Prasanna Biswas, Machine learning Engineer at Corporate R & D Qualcomm and Prof. Swati Rane, Prof. Pushkar Sathe, Prof. Shyamala Mathi, SIES GST.

Course Objectives:

CO
To write and explain basics commands of python
To explain basics of image processing
To implement basic image processing using python
To explain concepts of machine learning
To write codes of machine learning using python
To implement mini project based on image processing and machine learning using python

Course Outcomes:

- To use Python – Jupyter tool
- Perform all basic operations in the Dataset and Visualize data using the libraries
- Perform basic operations on digital image using Python
- Implement classifier model for given data and compare its performance with other classifier.

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Course Content:

Module	Contents	Hours
1.	Basics of python Overview of python, python data types, build in data structure, Lists, tuples, dictionaries, string built in methods.	8 hrs
2.	Applications in image processing Histogram of image, splitting color image into RGB, Histogram Equalization, edge detection using simple operators.	8 hrs
3.	Applications in Machine learning Introduction to machine learning, data manipulation and pre-processing, data visualization, linear and logistic regression, SVM, decision tree, classification using KNN, Implementation of CNN.	24 hrs


Assessment:

1. Students will be assessed based on module wise assignments and quizzes.
2. Students have to develop Mini projects based on above concepts.

Course Co-ordinator: Prof. Pushkar Sathe

E mail ID: pushkars@sies.edu.in

Contact no.: 9870630637


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Value added course on Data Science

(June 28-July 3, 2021)

Click [here](#) to register

Data science is an interdisciplinary field that uses scientific methods, processes, algorithms and systems to extract knowledge and insights from structured and unstructured data, and apply knowledge and actionable insights from data across a broad range of application domains.

Duration of Course: 48 Hrs

About Instructors:

This course will be taught by a team of various eminent programming experts from Industry and SIESGST faculty members of Computer Engineering Department.

Various Industry Experts from Data Science and Deep Learning Domain:

1. Shadab BNY Mellon- (Founder of Quantum Computing India and a full-stack Data Scientist)

Faculty Members:

1. Dr. Varsha Patil (Assistant Professor)
2. Prof. Anindita Khade (Assistant Professor)

Course Objectives:

The objective of this course is to explore the Data science concepts with more hands on practice, and analyze data using different Machine Learning, Deep Learning and Natural Language Processing models.

Course Outcomes:

At the end of the course Students will be able to

1. Understand and Implement Machine Learning models
2. Understand Deep Learning text mining and analytical techniques
3. Use various Deep Learning Libraries
4. Build Deep Learning Models
5. Implement various NLP techniques

Course Content:

Prerequisite:

1. Basic knowledge of python.



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Module	Content	Duration
1.	Machine Learning Models: In this module you will learn to implement Simple Linear Regression, Multiple linear Regression, Logistic Regression, Clustering	8Hrs
2.	Introduction to DL : In this module you will learn basic concepts Deep Learning Nerul Network component, Multilayer perception	8 Hrs
3.	Deep Learning Libraries: In this module you will learn basics of python Deep Learning Libraries and how to use them.	8 Hrs
4.	Deep Learning Networks: In this module you will learn to implement CNN, RNN models with the help of TF Learn and Keras Libraries	8 Hrs
5.	Quantum Machine Learning Introduction to Quantum-enhanced ML, Quantum information processing, Quantum Linear algebra.	8 Hrs
6.	Natural Language Processing In this module you will learn basics of NLP, NLTK toolkit for NLP, Lexical Ambiguity at syntactic and semantic level	8 Hrs

Assessment:

1. Module wise assignments and quizzes should be completed by students.

Internship: Project Based Internship after successful completion of the course will be offered to the participants.

Course Coordinators: Dr. Varsha Patil
varshap@sies.edu.in
9768287595
Prof. Anindita Khade
aninditak@sies.edu.in
9769843248



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Day wise Schedule

Day	Topics	Faculty	Timings
1	Machine Learning Models: In this module you will learn to implement Simple Linear Regression, Multiple linear Regression, Logistic Regression, Clustering	Prof. Anindita Khade	9:30-4:30
2	Introduction to DL : In this module you will learn basic concepts Deep Learning Nerul Network component, Multilayer perception	Mr.Shadab Hussain	9:30-4:30
3	Deep Learning Libraries: In this module you will learn basics of python Deep Learning Libraries and how to use them.	Mr.Shadab Hussain	9:30-4:30
4	Deep Learning Networks: In this module you will learn to implement CNN, RNN models with the help of TF Learn and Keras Libraries	Mr.Shadab Hussain	9:30-4:30
5	Quantum Machine Learning Introduction to Quantum-enhanced ML, Quantum information processing, Quantum Linear algebra.	Mr.Shadab Hussain	9:30-4:30
6	Natural Language Processing In this module you will learn basics of NLP, NLTK toolkit for NLP, Lexical Ambiguity at syntactic and semantic level	Dr.Varsha Patil	9:30-4:30



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South Indian Education Society's
GRADUATE SCHOOL OF TECHNOLOGY, Navi Mumbai.
DEPARTMENT OF INFORMATION TECHNOLOGY



Network Management and Security

June 23 to June 29, 2021

[Click here](#) to register

Computer networks are built to support business functionality and beyond communication the result of business is data. The data needs organization, maintenance and above all protection from malicious attackers. We live in a digital world, where an increasing amount of our day-to-day activities have migrated online. Cyber-criminals can effortlessly wreak havoc on our lives and businesses. Our increased use of the internet and mobile usage gives them even more opportunities to exploit our vulnerabilities. That's where networking and security awareness comes in! To address this need, this course is designed to educate our students on the different security risks and threats out there, as well as potential weak spots. Students must learn the best practices and procedures for keeping networks and data secure.

About Instructors:

This course will be taught by the Internal faculty of SIES GST and the Industry experts from Networking and Security Domain.

Industry Experts from Networking and Security Domain:


1. Dr. Dipanjan Biswas- Certified Trainer (CCNA, CCNP and CCIE), NOKIA, WAN Optimization and Design Architect.
2. Mr. Sandesh Gupta- Forensic Consultant, Lab Systems Pvt Ltd.

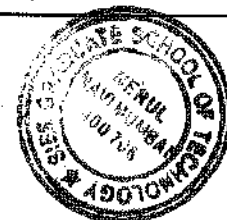
Internal Expert:

Dr. K. Lakshmi Sudha, Associate Professor

Course Objectives:

CO
To learn the fundamental aspects of security in a modern networked environment with the focus on system design aspects in the specific context of network / internetwork security.
To learn the effective assessment methodologies in Digital Forensics.


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Course Outcomes:

- Students will be able to design a secured Enterprise Network.
- Students will be able to develop effective assessment methodologies in Digital Forensics.


Course Content:

Prerequisite: Computer Networks, Basics of security.

Module	Contents	External Expert/ Internal Faculty Member	Hours
1.	Fundamentals of Networking and design Introduction, IP addressing (IPV4 and IPV6) Understanding, configure Router and Switch, Module, Implementation of DHCP, ACL, NAT, PAT etc, Password Recovery, Backup of running config to startup config, Trunking, VLAN, OSPF, EIGRP protocols etc, Design of Wireless Network.	Dr. K. Lakshmi Sudha	20 hrs
2.	Security fundamentals, VPNs, Wireless security protocols Key security concepts, Security program elements, Configure device access control using local passwords, Describe security password policies elements, such as management, complexity, and password alternatives, Remote access and site-to-site VPNs, Configure and verify access control lists, Configure Layer 8 security features, Differentiate authentication, authorization, and accounting concepts, Describe wireless security protocols, Configure WLAN using WPA8 PSK using the GUI.	Dr. Dipanjan Biswas- Certified Trainer (CCNA, CCNP and CCIE)	10 hrs
3.	Digital forensics Introduction to Digital forensic, Disk forensic workflow Mobile forensic workflow, Video Forensic with live tool demo	Mr. Sandesh Gupta - Forensic Consultant, Lab Systems Pvt. Ltd.	5 hrs
4.	Problem statement formulation for Mini project and its implementation based on the concepts learned.	Dr.K.Lakshmi sudha	05 hrs


Assessment:

1. Module wise assignments and quizzes should be completed by students.
2. Mini project should be completed.


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Course Coordinator: Prof. Bushra Shaikh
bushras@sies.edu.in
9833199844


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Simulation using ANSYS and CFD

Jun 21 to July 03, 2021

Click [here](#) to register

Computational aided engineering tools are now an essential component of cutting-edge solutions in industries. As a result of this CAE method, the critical region as well as flow regimes in the model can be identified, resulting in component and thermal process optimization. The integrated workflow will cover all engineering tools for decision making in the engineering processes. This training program is meant to be a hands-on type course, giving students opportunity to work on Ansys software and learn various techniques.

Prerequisite:

This course is designed to enhance the learning and require prior basic knowledge in the field of Strength of Material and fluid mechanics.

- 1) Laptop/PC with minimum 4 GB ram
- 2) Ansys Student Version

About Instructors:

This course will be taught by a team of software design researchers from Industry expert and SIESGST faculty.

Prof. Ajay S.Hundiwale
Prof. Chandan D.Chaudhari

Course Objectives:

ANSYS capabilities, terminology, and ANSYS Interactive (GUI).
How to build Finite Element Models in ANSYS.
Basic steps of performing a complete CAE analysis.
Meshing Techniques
Results Post processing

Course Outcomes:

- Students will be able to understand and apply knowledge of ANSYS and CFD in industrial application
- To be able to plot and validate simulation results with analytical or experimental approach



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Course Content:

Module	Contents	Hours
1.	Introduction to CAE Using ANSYS WORKBENCH- <ul style="list-style-type: none">- Introduction to computational theory, various applications of CAE in Industrial Perspective, concept of implicit and explicit analysis, live examples to demonstrate solver theories.	4 Hrs
2.	Introduction to Meshing and Convergence criteria – <ul style="list-style-type: none">- Geometric modeling using ANSYS Design Modeler, Concept of meshing and Mesh Metrics statistics, 2D & 3D Mesh generation , Concept of patch independent and patch dependent test criteria, convergence criteria.	4 Hrs
3.	Structural Analysis and its validation – <ul style="list-style-type: none">- Problem Definition and converting into 2D or 3D modeler, Meshing, Mesh Criteria and boundary condition, solver theory, validation of model using analytical or experimental method.	4 Hrs
4.	Thermal Analysis and its validation – <ul style="list-style-type: none">- Problem Definition and converting into 2D or 3D modeller, Meshing, Mesh Criteria and boundary condition, solver theory, validation of model using analytical or experimental method.	4 Hrs
5.	Introduction to CFD and its application – <ul style="list-style-type: none">- Basic of Computational theories and equations, Concept of viscous modeling theory, creating fluid domain in circular pipe and meshing	4 Hrs
6.	Hands on training & overview on Ansys Fluent – <ul style="list-style-type: none">- Hands on session to tackle CFD Numerical using ANSYS Fluent Solver	4 Hrs
7.	Flow through pipe –[Laminar & Turbulent pipe]– <ul style="list-style-type: none">- 2D/3D flow visualization and plotting the data using ansys fluent post processor	4 Hrs
8.	Analysis of Jet Impinging Process using ANSYS Fluent- <ul style="list-style-type: none">- 2D flow visualization and plotting the data using ansys fluent post processor	4 Hrs
9.	Case study 1 – Real life problem based on Thermal/Fluid Module	4 Hrs
10.	Case Study 2 - Real life problem based on Structural Module	4 Hrs

Assessment:

1. Students will be assessed based on module wise assignments and quizzes.



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2. Fifteen days internship will be provided in which students have to develop Mini projects based on above concepts.

Course Coordinator – Prof. Ajay S Hundiware
Email – ajayh@sies.edu.in
Mobile no - 9423977842



PRINCIPAL
S.I.E.S. GRADUATE SCHOOL OF TECHNOLOGY
C. J. Chandrasekarendra Saraswathi Vidyapeetham
Nerul, Mumbai

3D Modelling and 3D Printing

June 21 to July 03, 2021

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Now a days, three-dimensional(3D) modelling is an elementary step for demonstration of solid components used for variety of applications in industry. With important advantages like, quick editing, visualization, rendering of individual and whole assembly, reduce the time to produce the conceptual product and time-to-market. Further development will be dependent on more & more steadfast integration of modelling and analysis for specific application. For the engineering processes, the integrated workflow will cover all engineering tools for conceptual generation and production using 3D printing or additive manufacturing. Additive manufacturing requires data in standard format for conversion of conceptual product to physical product using 3D printing machinery.

This training program is meant to be a hands-on type of course, giving students opportunity to work on 3D modelling software and learn various techniques of solid model generation and 3D printing.

About Instructors:

This course will be taught by people from industry working in this field and SIESGST faculty.

Prof. Prashant K. Ambadekar
Prof. Siddique J. Ahmed
Mr. Uday Akapasu [Force Motor, Pune Division]
Mr. Viraj Kanchan [Intern at IIT Bombay]

Course Objectives:

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To construct a 3D model of the object to be fabricated using 3D printing.
To identify the 3D printing technique to fabricate a particular component.
To design the 3D printing technique by understanding the physics of the technique.
To create a 3D model using the related software.
To design a complete setup for a prototype obtained by 3D printing.

Course Outcomes:

- To demonstrate different 3D modelling techniques.
- To design a complete 3D printing set up.



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Course Content:

Module	Contents	Hours
1.	3D Modelling Introduction to tolerance and fits, 2D modelling techniques, 3D modelling techniques. In this module you will learn how to create a 3D model of any object using software and convert it into STL format.	8 hrs
2.	3D Modelling using Reverse Engineering. Reverse Engineering, 3D modelling using Reverse Engineering In this module you will learn how to create a 3 D model from the actual physical model. The concept of reverse engineering will be demonstrated and the related software will be explained.	8 hrs
3.	Additive Manufacturing 3D printing techniques, 3D printing machinery In this module you will learn about the different additive manufacturing techniques. You will learn these processes in depth along with the physics involved in it.	8 hrs
4.	Software for Slicing In this module you will learn to use the software used in industry for slicing the 3D models created using modelling software.	8 hrs
5.	Case Study and Industry Awareness In this module experts from industry or those working in this field will share their experience with you. They will also present some case study for in-depth exposure to the concept.	8 hrs

Assessment:

1. Students will be assessed based on module wise assignments and quizzes.
2. After successful training, fifteen-day internship will be provided in which students have to develop Mini projects based on above concepts.

Course Coordinator – Prof. Prashant K Ambadekar
Email Id - prashanta@sies.edu.in
Mobile No - 9224636634



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