Report

on

Web Designing Fundamentals

Eligible Students: B.Tech. 4th Semester

Date: 11-01-2018 to 16-03-2018

Duration of Course: 32 Hours

Course Code: CC_WDF

No. of Students Enrolled in the course: 40

Timing: 1:50 to 3:20

Days: Thursday & Friday

Course Coordinator: Er. Ankit Sharma, Assistant Professor (CSE)

The Web Designing Fundamentals Programme offered during the B.Tech. 4th Semester focused on providing students with a comprehensive understanding of HTML (Hyper Text Markup Language) and CSS (Cascading Style Sheets). These two technologies are essential for designing visually appealing and user-friendly websites.

The course aimed to equip students with the skills necessary for analyzing website usability and developing websites using HTML and CSS. The syllabus covered the fundamentals of HTML tags and CSS modules, providing a solid foundation for creating well-structured and visually appealing websites. Overall, the Web Designing Fundamentals Programme delved into the essentials of web development, emphasizing the importance of HTML and CSS in creating flexible, attractive, and user-friendly websites. The course duration was 32 hours, where 38 students out of 40 enrolled students successfully completed the course.

Teaching Pedagogy:

The teaching pedagogy for the Web Designing Fundamentals Programme involves a combination of theoretical concepts and practical application. It includes interactive lectures, live coding demonstrations, hands-on activities, group discussions, and peer learning. Real-world examples and case studies are used to illustrate effective web design principles. Regular assessments and feedback help evaluate students' progress. Project-based learning is encouraged, culminating in the creation of a fully functional website. Additional resources are provided for continuous learning. The pedagogy aims to engage students, foster collaboration, and develop practical skills in web design using HTML and CSS.

Topic Covered:

Module 1: Introduction to Web Programming - Provides an overview of web programming and its importance. Covers HTML and CSS fundamentals in website development.

Module 2: Introduction to HTML - Introduces HTML's structure and syntax. Covers basic tags for headings, paragraphs, and line breaks.

Module 3: HTML basic formatting tags - Focuses on text formatting in HTML, including bold, italic, and lists.

Module 4: HTML grouping using DIV span - Teaches how to group and manipulate HTML content using and tags, along with CSS classes and IDs.

Module 5: HTML - Lists, Images, Hyperlink, Table frame, form, Headers, Miscellaneous - Covers various HTML elements, such as lists, images, hyperlinks, tables, forms, headers, and other miscellaneous tags.

Module 6: CSS - Introduction, Syntax, Selector, Color background, Cursor, Text Fonts, List Tables - Introduces CSS and its syntax, selectors, and styling properties for backgrounds, fonts, cursors, and lists.

Assessment Procedure:

The students were evaluated throughout the course based on four parameters: Technical Knowledge, Hands-on Practice, Skill Test, and Attendance. Each parameter carried a certain weightage in the overall evaluation.

1. Technical Knowledge in Concerned Field (20 marks):

This parameter measured their theoretical knowledge, conceptual understanding, and ability to apply that knowledge to practical scenarios.

2. Hands-on Practice (10 marks):

Hands-on practice evaluated the student's ability to apply their knowledge in practical situations. It measured their proficiency in utilizing tools, techniques, or software relevant to the course.

3. Skill Test (10 marks):

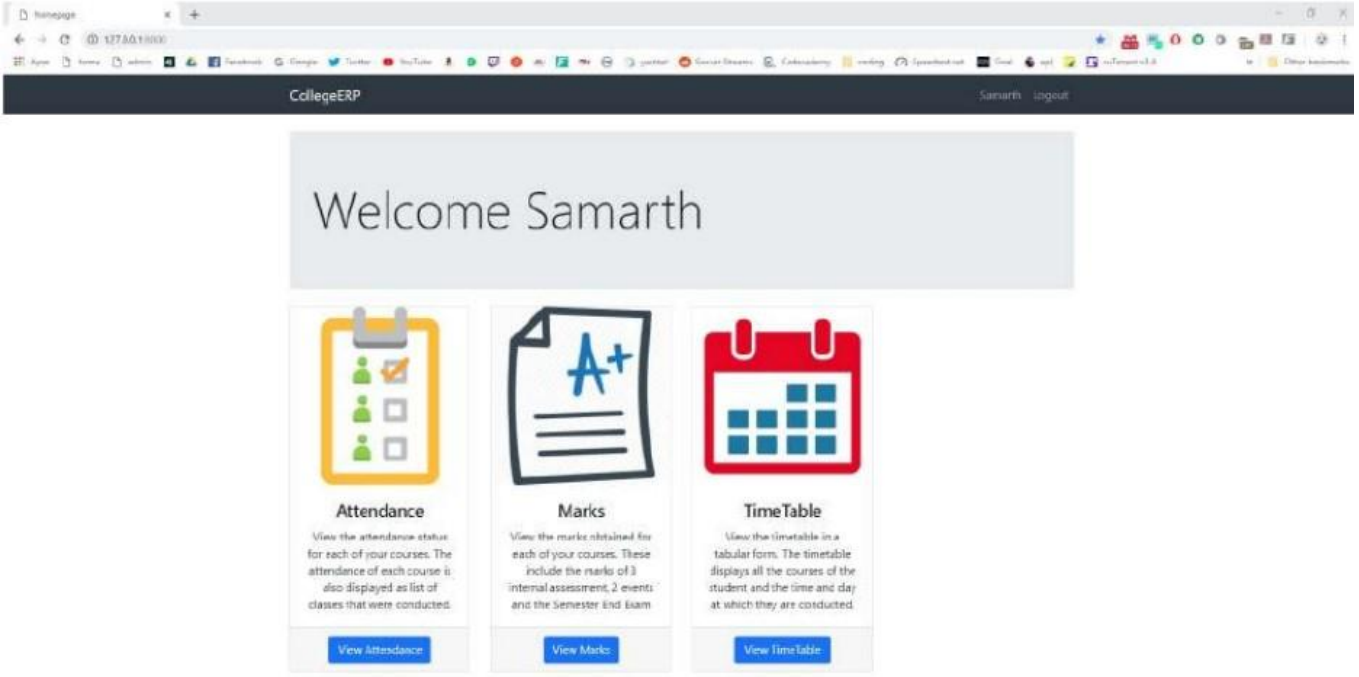
The skill test assessed the student's competency and proficiency in specific skills related to the course. It focused on practical skills that were essential for the field of study.

4. Attendance (10 marks):

Attendance refers to the student's regular presence in the course. It emphasizes the importance of active participation and consistent engagement throughout the duration of the program.

Outcomes:

1. Students gained a comprehensive understanding of web programming concepts and their significance in website development.
2. Students developed proficiency in HTML and CSS, including syntax, tags, attributes, selectors, and styling properties.
3. Students learned to create well-structured web pages using HTML, organizing content effectively with headings, paragraphs, lists, images, and hyperlinks.
4. Students acquired skills in CSS to enhance the presentation of web pages, including background colors, fonts, layouts, and responsive design for multiple devices.
5. As part of the course, students undertook a project named "ERP system for College." They applied their knowledge of HTML and CSS to design and develop an interactive portfolio website showcasing their skills, projects, and achievements.



Screenshot of ERP System for College

Report

on

Data Analytics with Python

Eligible students: B.Tech. 6th Semester

Date: 11-01-2018 to 16-03-2018

Duration of Course: 32 Hours

Course Code: CC_DAP

No. of Students Enrolled in the course: 39

Timing: 11:30 to 1:05

Days: Thursday & Friday

Course Coordinator: Er. Charandeep Singh Bedi, Assistant Professor (CSE)

The "Data Analytics with Python" course was conducted for the 6th semester students pursuing B.Tech. in Computer Science & Engineering. The course duration was 32 hours, and 37 students who has successfully completed the course. Python, a widely used programming language known for its versatility and data analysis capabilities, was the primary focus of the course. Students were introduced to the fundamentals of data analytics using Python and its applications in various fields.

Teaching Pedagogy:

The teaching pedagogy for the "Data Analytics with Python" course involves a balanced blend of theoretical concepts, practical hands-on exercises, and real-world applications. The course begins with interactive lectures to introduce fundamental data analytics principles and techniques using Python. Students actively engage in coding exercises, where they manipulate and analyze datasets using Python libraries like NumPy and Pandas. They also work on case studies and projects to apply their knowledge in real-world scenarios. The teaching methodology emphasizes active learning through group discussions, code reviews, and problem-solving sessions. Regular assessments and feedback ensure continuous learning.

Topics Covered:

Module 1: Python environment Setup & working with Plots - Covered Python environment setup and basic plotting techniques using Matplotlib.

Module 2: Working with Lists, arrays - Explored accessing and manipulating elements in lists and arrays.

Module 3: Matrix, loops, Tuples, dictionaries - Covered matrices, loops, and data containers like tuples and dictionaries.

Module 4: Functions and Python modules - Introduced functions and modular programming using Python modules.

Module 5: Introduction to OOPs and Modules - Covered Object-Oriented Programming (OOP) concepts and module usage.

Module 6: Introduction to NumPy, Pandas, Matplotlib - Introduced essential Python libraries for data analysis and visualization.

Assessment Procedure:

Throughout the course, students were evaluated based on four parameters: Technical Knowledge, Hands-on Practice, Skill Test, and Attendance. Each parameter carried a certain weightage in the overall evaluation.

1. **Technical Knowledge in Concerned Field (20 marks):**

This parameter measured their theoretical knowledge, conceptual understanding, and ability to apply that knowledge to practical scenarios in data analytics using Python.

2. **Hands-on Practice (10 marks):**

Hands-on practice evaluated the student's ability to apply their knowledge in practical data analytics tasks. It measured their proficiency in utilizing Python libraries and techniques to analyze and manipulate datasets.

3. **Skill Test (10 marks):**

The skill test assessed the student's competency and proficiency in specific skills related to data analytics using Python. It focused on their ability to perform data cleaning, exploratory data analysis, and statistical analysis.

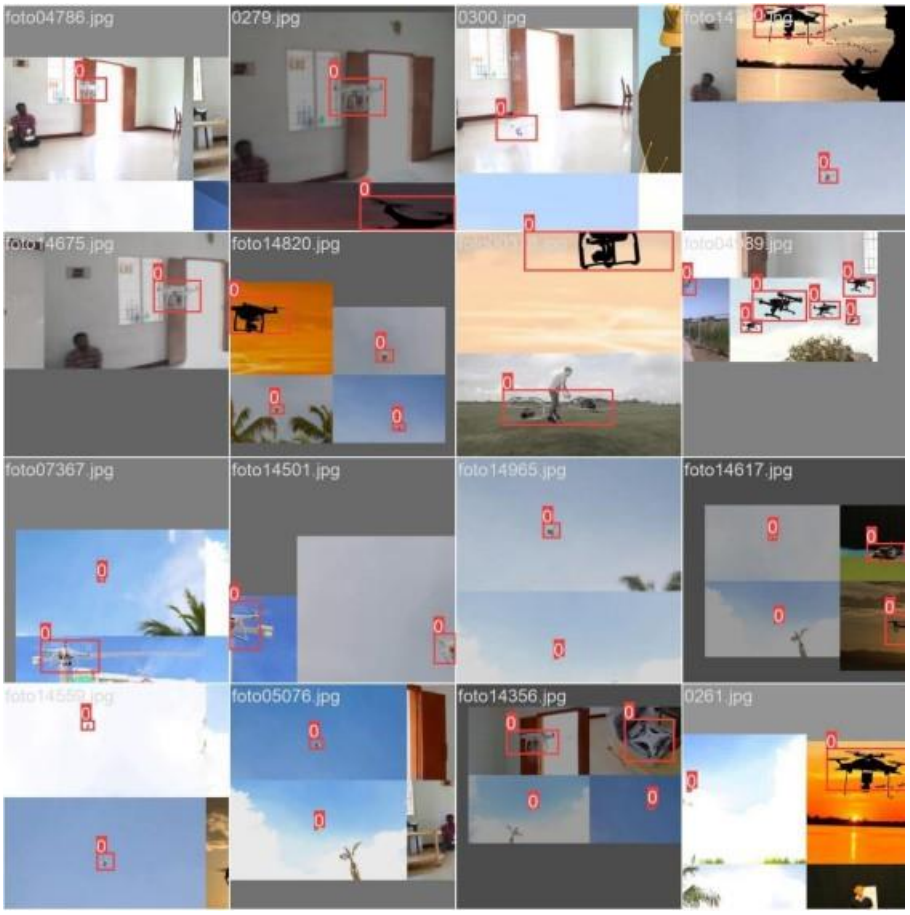
4. **Attendance (10 marks):**

Attendance referred to the student's regular presence in the course, emphasizing active participation and consistent engagement in the program.

Outcomes:

1. Students gained a strong foundation in data analytics principles and techniques using Python.
2. Students acquired the skills to clean, manipulate, and analyze datasets using Python libraries such as NumPy and Pandas.
3. Students acquired the ability to perform numeric and symbolic computations using Python. They learned techniques for handling complex mathematical operations and calculations.
4. Students learned how to create and manipulate graphs using Python. They gained proficiency in plotting 2D and 3D graphs, enabling them to visually represent data and analyze trends.
5. They gained proficiency in cleaning, manipulating, and visualizing datasets, enabling them to extract meaningful insights from complex data.

6. As part of their project “Drone Detection System”, students conducted statistical analysis on a given dataset. They performed hypothesis testing, evaluated correlations between variables, and built regression models to analyze and predict trends in the data.



Screenshot of Drone Detection System

Report

on

Introduction to Digital Marketing

Eligible Students: B.Tech. 4th Semester

Date: 11-01-2018 to 19-03-2018

Duration of Course: 33 Hours

Course Code: CC_IDM

No. of Students Enrolled in the course: 36

Timing: 11:30 am to 01:05

Days: Monday & Thursday

Course Coordinator: Er. Ashish Kumar

Introduction to digital marketing course conducted during the session 2017-18 for B.Tech. students. This certificate course explored several aspects of the new digital marketing environment, including topics such as digital marketing analytics, search engine optimization, social media marketing, and 3D Printing. The course duration was 33 hours, where 36 enrolled students successfully completed the course.

The course emphasized the development of creative and analytical skills among the students, enabling them to comprehend and explain emerging trends in digital marketing. Through the application of relevant marketing theories and frameworks, the students acquired the ability to critically assess the use of digital marketing tools.

Teaching Pedagogy:

The teaching pedagogy for the digital marketing course involved interactive and immersive learning methods. These included group discussions, quizzes, presentations (PPT), hands-on practice sessions, and interactive exercises/games. Emphasis was placed on developing creative and analytical skills among students. They explored emerging trends in digital marketing, critically assessed the use of digital marketing tools, and analyzed the implications for marketers and consumers. Practical exercises and digital asset creation allowed students to apply their knowledge. The course culminated in a video reflection where students shared what they learned and how they planned to utilize their

new skills. This comprehensive approach aimed to equip students with practical knowledge and critical thinking abilities in digital marketing.

Topics Covered:

Module 1: Introduction to digital marketing
Module 2: Website planning and creation.
Module 3: Introduction to search engine optimization
Module 4: Social Media Marketing.
Module 5: Content marketing and Web Analytics

Assessment Procedure:

The students were evaluated throughout the course based on four parameters: Technical Knowledge, Hands-on Practice, Skill Test, and Attendance. Each parameter carried a certain weightage in the overall evaluation.

1. **Technical Knowledge in Concerned Field (20 marks):**
   This parameter measured their theoretical knowledge, conceptual understanding, and ability to apply that knowledge to practical scenarios.
2. **Hands-on Practice (10 marks):**
   Hands-on practice evaluated the student's ability to apply their knowledge in practical situations. It measured their proficiency in utilizing tools, techniques, or software relevant to the course.
3. **Skill Test (10 marks):**

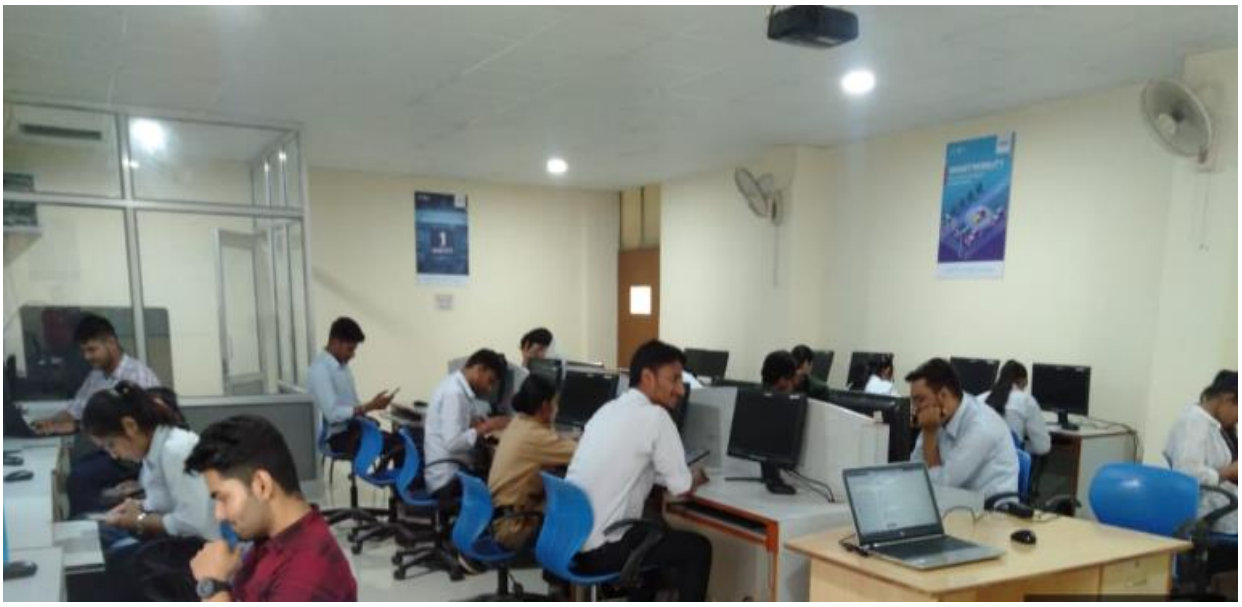
   The skill test assessed the student's competency and proficiency in specific skills related to the course. It focused on practical skills that were essential for the field of study.
4. **Attendance (10 marks):**
   Attendance refers to the student's regular presence in the course. It emphasizes the importance of active participation and consistent engagement throughout the duration of the program.

Outcome:

1. Structured Digital Marketing Plan: Students learned to create a comprehensive and well-structured digital marketing plan. They will understand the key components of a digital marketing strategy and how to align it with organizational goals and objectives.
2. Budgeting for Digital Marketing: Students learned the skills to develop a digital marketing

budget. They will learn how to allocate resources effectively across various digital marketing channels and tactics, considering factors such as cost, reach, and expected ROI.

3. Objective Setting and Evaluation: Students identified the appropriate measures and metrics to set objectives for digital marketing campaigns. They will understand how to evaluate the performance of digital marketing initiatives using relevant KPIs and analytics tools.
4. Strategic Options Prioritization: Students gained the ability to review and prioritize strategic options for enhancing customer acquisition, conversion, and retention using digital marketing techniques. They will learn to analyze market trends, consumer behavior, and competition to make informed strategic decisions.
5. Students learned the optimization techniques of marketing and many more. It was the major achievement of the certificate course.



Session for Optimizing Techniques in Marketing

Report

on

Fundamentals of Auto CAD

Eligible Students: B.Tech. 6th Semester

Date: 11-01-18 to 19-03-2018

Duration of Course: 32 Hours

Course Code: CC_FAC

No. of Students Enrolled in the course: 30

Timing: 01:50 to 03:20pm

Days: Monday & Thursday

Course Coordinator: Er. Ashish

The Fundamentals of AutoCAD course conducted during the session 2017-18 for B.Tech. students. This certificate course offers a comprehensive learning experience for individuals seeking to develop proficiency in computer-aided design (CAD). AutoCAD is a powerful software widely used in various industries, including architecture, engineering, and construction. The course duration was 32 hours, where 30 enrolled students successfully completed the course.

The faculty expert ensured to equip students with the necessary knowledge and skills to effectively utilize AutoCAD for creating precise 2D and 3D digital designs. Through hands-on practice and interactive sessions, students will learn the fundamental tools and techniques of AutoCAD, enabling them to produce professional drawings, models, and layouts.

Teaching Pedagogy:

The teaching pedagogy for the Fundamentals of AutoCAD course focuses on hands-on learning and interactive methods. Students will receive live demonstrations to understand AutoCAD functionalities, followed by ample opportunities for hands-on practice. Individual guidance and collaborative learning activities will enhance the learning experience. Regular assessments will provide feedback, and real-world applications will highlight the practical relevance of AutoCAD. A project-based approach will allow students to apply their skills, and additional resources will encourage continuous learning beyond the classroom. Through these methods, the course aims to provide a comprehensive and practical understanding of AutoCAD for 2D and 3D design purposes.

Topics Covered:

Module 1: Introduction to Auto CAD

Introduction of AutoCAD, AutoCAD versions, Interface, Control the Drawing, Function keys, AutoCAD basics, Coordinate system, Cartesian, coordinate system,

Module 2: Draw and Modify commands

Draw Commands-Line, Poly line command, Rectangle command, Modify commands-Move, Rotate, Scale, copy, Mirror, erase, trim, extend, Annotate-Dimension Style, Manager Linear, Aligned, Radius, Angular, Arc length

Module 3: Text command, Layers, blocks

Text command-Single line text, Multiline text Layers, Layer properties, Blocks, Insert blocks, Parametric Geometric, Dimensional Manage

Module 4: Isometric views

Isometric views-Isometric top, left, right Isometric diagrams, Isometric drawings, Isometric diagrams, exercise, 2D Fundamentals, Drawing units, Sheet settings, Mechanical diagrams

Module 5: Project

Mechanical Projects

Assessment Procedure:

The students were evaluated throughout the course based on four parameters: Technical Knowledge, Hands-on Practice, Skill Test, and Attendance. Each parameter carried a certain weightage in the overall evaluation.

1. **Technical Knowledge in Concerned Field (20 marks):**
   This parameter measured their theoretical knowledge, conceptual understanding, and ability to apply that knowledge to practical scenarios.

2. **Hands-on Practice (10 marks):**
   Hands-on practice evaluated the student's ability to apply their knowledge in practical situations. It measured their proficiency in utilizing tools, techniques, or software relevant to the course.

3. **Skill Test (10 marks):**

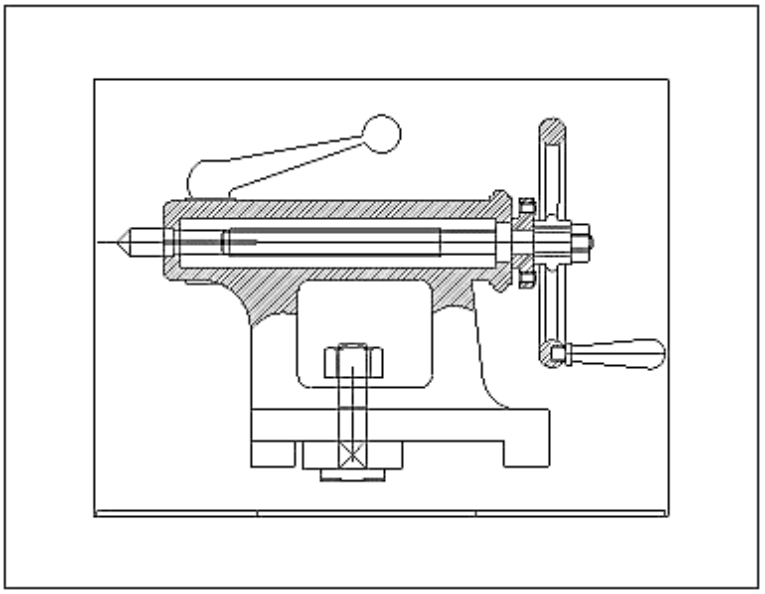
   The skill test assessed the student's competency and proficiency in specific skills related to the course. It focused on practical skills that were essential for the field of study.

4. **Attendance (10 marks):**
   Attendance refers to the student's regular presence in the course. It emphasizes the importance of

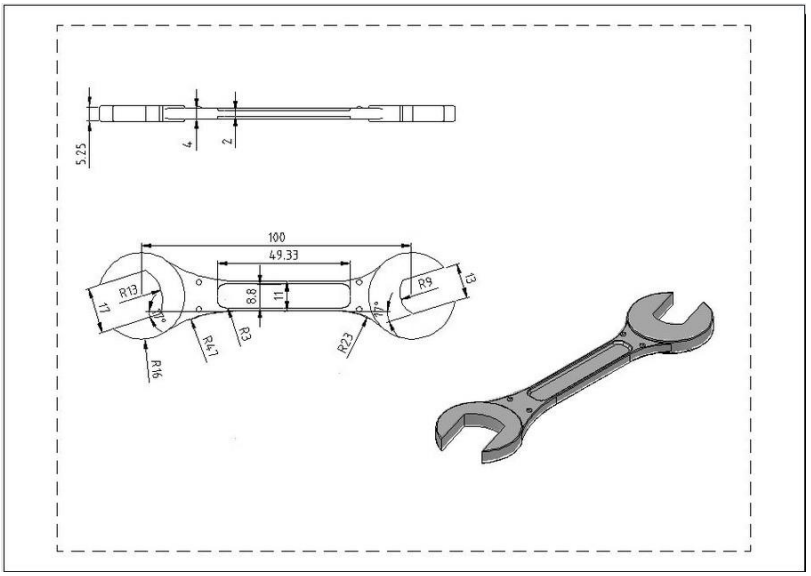
active participation and consistent engagement throughout the duration of the program.

Outcome:

1. They have gained a comprehensive understanding of CAD concepts and CAD tools, allowing them to navigate and utilize CAD software effectively.
2. The students now possess a solid understanding of Concepts, Wireframe, and Surface modeling techniques, enabling them to create complex and detailed 3D models.
3. They have acquired the ability to create precise engineering drawings using CAD software, utilizing the Part modeling feature to develop accurate representations of engineering components.
4. Students made a design of tailstock, spanner and many more. It was the major achievement of the certificate course.



Design of Tailstock using CAD software



Design of Spanner using AUTOCAD software

Report

on

Concrete Repair and Maintenance

Eligible Students: B.Tech. 4th Semester

Date: 11-01-2018 to 19-04-2018

Duration of Course: 33 Hours

Course Code: CC_CRM

No. of students Enrolled: 32

Timing: 01.50-03.20

Days: Monday & Thursday

Course Coordinator: Er. Sandeep Maan, Assistant Professor (CE)

The maintenance and repair strategies required for concrete structures can vary depending on factors such as age, condition, usage, and exposure. This course was selected to impart knowledge to students regarding the criticality of corrosion in concrete structures, the different mechanisms leading to deterioration, and the utilization of non-destructive techniques for assessment and repair purposes. Ultimately, the course aimed to preserve and restore the physical and structural integrity of concrete elements, with the intention of prolonging their lifespan and enhancing their overall performance.

The course received overwhelmingly positive feedback from students, who highly appreciated the practical learning opportunities provided. It is worth noting that 30 participants successfully completed the program and were duly awarded certificates as recognition of their achievement.

Teaching Pedagogy:

This course was adopted to ensure optimal learning outcomes. The curriculum encompassed several modules that extensively covered topics such as corrosion in concrete structures, deterioration of cementitious systems, non-destructive assessment techniques, as well as methods for strengthening and stabilizing structures. By employing this comprehensive teaching pedagogy, the course facilitated a thorough understanding of the subject matter, empowering students to acquire the necessary skills and expertise in addressing corrosion-related challenges in concrete structures.

Topics Covered:

Module-1 Introduction to corrosion in concrete structures

Definition of corrosion, significance of corrosion and corrosion mechanism, embedded metal corrosion

Module-2 Deterioration of cementitious systems

Deterioration of cementitious systems- Acid attack, Alkali Silica Reaction (ASR), Shrinkage and others

Module-3 Non-Destructive Techniques

Concrete assessment using non-destructive tests (NDT), Concrete assessment and load effects, and Surface repair – Condition assessment, Analysis, strategy, and design

Module-4 Strengthening and stabilization

Introduction and beam shear capacity strengthening, Column strengthening, Flexural strengthening

Assessment Procedure:

The students were evaluated throughout the course based on four parameters: Technical Knowledge, Hands-on Practice, Skill Test, and Attendance. Each parameter carried a certain weightage in the overall evaluation.

1. Technical Knowledge in Concerned Field (20 marks):

This parameter measured their theoretical knowledge, conceptual understanding, and ability to apply that knowledge to practical scenarios.

2. Hands-on Practice (10 marks):

Hands-on practice evaluated the student's ability to apply their knowledge in practical situations. It measured their proficiency in utilizing tools, techniques, or software relevant to the course.

3. Skill Test (10 marks):

The skill test assessed the student's competency and proficiency in specific skills related to the course. It focused on practical skills that were essential for the field of study.

4. Attendance (10 marks):

Attendance refers to the student's regular presence in the course. It emphasizes the importance of active participation and consistent engagement throughout the duration of the program.

Outcomes:

The course outcomes can be summarized as follows:

1. Students learned essential knowledge in recognizing the various causes of deterioration.
2. Students explored all thec aspects of repair and restoration processes.
3. The course provided comprehensive instruction on the practical application of non-destructive tools.
4. Students cultivated the skill of selecting quantifiable parameters.
5. Students were introduced to a wide range of repair and retrofitting techniques.
6. Students developed the capacity to effectively tackle deterioration mechanisms.
7. The course empowered students to apply appropriate repair and maintenance practices within their college campus, such as fixing wall cracks and repairing stairs.

Project on Repair and Restoration Processes

Report

on

Best Practices in Civil Engineering

Eligible Students: B.Tech. 6th Semester

Date: 11-01-2018 to 09-04-2018

Duration of Course: 32 Hours

Course Code: CC_BPCE

No. of students Enrolled: 40

Timing: 02.35-04.00

Days: Monday & Thursday

Course Coordinator: Er. Rajan Vinayak, Assistant Professor (CE)

The Civil Engineering Practices course encompassed a wide range of topics related to surveying and construction. Its primary focus was on equipping students with the necessary expertise in utilizing total station instruments, preparing bar bending schedules (BBS), and conducting quantity surveying for building materials. By delving into both theoretical concepts and hands-on applications of total station operations, BBS creation, and material quantity calculations, the course aimed to furnish students with the essential skills sought after in the surveying industry.

Undeniably, this course served as an effective platform for students to acquire practical knowledge and skills in surveying, total station instruments, bar bending schedules, and quantity surveying of building materials. The feedback from students was overwhelmingly positive, and an impressive 38 out of the 40 participants were awarded certificates in recognition of their successful completion of the program.

Teaching Pedagogy:

The course commenced by providing students with a comprehensive introduction to various surveying techniques. They gained knowledge about coordinate systems, units of measurement, and the establishment of survey control points. Practical sessions focused on ensuring students' familiarity with the machine's components, handling the instrument, setting up the equipment, establishing job and station setups, employing traversing techniques, and conducting detailed surveys. Moreover, the course encompassed theoretical teachings on bar

bending schedules, including the calculation of bar length, weight, and quantities. Students were also educated on methods for determining material volumes and analyzing rates pertaining to different building materials.

Topics Covered:

The modules covered in this course are as follows:

Module-1: Fundamentals of Surveying (Theoretical Aspects)

- Introduction to surveying methods and principles.
- Basics of trigonometry functions for distance and angular measurements.
- Understanding coordinate systems and units of measurements.
- Establishing survey control points.

Module-2: Total Station (Theoretical Aspects)

- Common concepts related to Total Station (EDM).
- How Total Station works and its machine components.
- Exploring the advantages and limitations of Total Station technology.

Module-3: Total Station (Practical Aspects)

- Familiarization with the different parts of the Total Station machine.
- Handling and operating the Total Station instrument.
- Setting up the Total Station equipment, including leveling, centering, and focusing.
- Job setup, station setup, and orientation techniques.
- Conducting detail surveys using Total Station.

Module-4: Bar Bending Schedule (BBS) (Theoretical Aspects)

- Preparation of Bar Bending Schedule for reinforcement steel.
- Calculation of length, weight, and quantity of bars.

Module-5: Quantity Surveying of Building Materials

- Methods for calculating the volume of building materials.
- Analysis of rates for different types of building materials.

Assessment Procedure:

The students were evaluated throughout the course based on four parameters: Technical Knowledge, Hands-on Practice, Skill Test, and Attendance. Each parameter carried a certain weightage in the overall evaluation.

1. Technical Knowledge in Concerned Field (20 marks):

This parameter measured their theoretical knowledge, conceptual understanding, and ability to apply that knowledge to practical scenarios.

2. Hands-on Practice (10 marks):

Hands-on practice evaluated the student's ability to apply their knowledge in practical situations. It measured their proficiency in utilizing tools, techniques, or software relevant to the course.

3. Skill Test (10 marks):

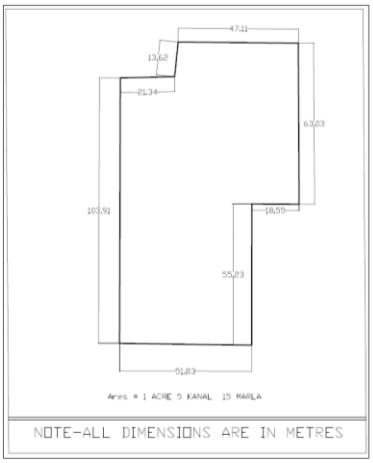
The skill test assessed the student's competency and proficiency in specific skills related to the course. It focused on practical skills that were essential for the field of study.

4. Attendance (10 marks):

Attendance refers to the student's regular presence in the course. It emphasizes the importance of active participation and consistent engagement throughout the duration of the program.

Outcomes:

1. The course equipped students with the essential knowledge required to effectively employ total station technology across a range of surveying tasks, expanding their understanding of its versatile applications.
2. Students developed the skills necessary to conduct precise field surveys using total station techniques, ensuring accuracy in their measurements and data collection.
3. Students obtained a comprehensive understanding of the intricate functions and components of total station equipment, mastering techniques such as centering, leveling, and focusing to proficiently set up the instruments.
4. They acquired the ability to calculate the quantities of diverse building materials essential for construction purposes, enabling them to accurately estimate the materials required for various projects.
5. At the end of this course students were given a project for creating maps, calculating area, and performing other essential survey tasks using TS instrument, also calculated cost of college boundary wall.



Project on Measurement of Existing area in BFGI

BABA FARID COLLEGE OF ENGINEERING & TECHNOLOGY								
CIVIL ENGINEERING DEPARTMENT								
BOUNDARY WALL COST according to Latest Slips of CSR								
S.no	**Particulars**	**No.**	**Length (m)**	**Breadth (m)**	**Height (m)**	**Volume**	**Rate in Rs**	**Cost**
1	Excavation (in cum)	1	4.5	0.75	1	3.375	119.30	402.64
2	PCC 1:4:8 (in cum)	1	4.5	0.575	0.1	0.25875	2667.73	690.28
3	First Class Brick work in Sub Structure (1:6)							0.00
3a	First Footing (in cum)	1	3.3	0.45	0.15	0.22275	3715.45	827.62
3b	Second Footing (in cum)	1	4.27	0.345	0.15	0.2209725	3715.45	821.01
3c	Third Footing (in cum)	1	4.27	0.23	0.6	0.58926	3715.45	2189.37
4	First Class Brick work in Super Structure (1:6)	1	4.27	0.115	1.9	0.932995	3715.45	3466.50
5	Earth Filling (in cum)	1				1.6875	42.7	72.06
6	RCC Footing (in cum)	1	1.2	1.2	0.23	0.3312	4183.01	1385.41
7	RCC Column (in cum)	1	0.23	0.23	2.82	0.149178	4183.01	624.01
8	Shuttering for Column per sqm	4	0.23	0.23	2.82	2.5944	158.31	410.72
9	DPC per sqm	1	4.5	0.23	1	1.035	205.24	212.42
10	Steel in Column (in kg)	1				25	60	1500.00
11	Steel in Column Footing (in kg)	1				25	60	1500.00
12							**Total Cost acc to 4.5m length**	**14102.03**
13							**Total Cost acc to per metre length**	**3133.78**
14							**Total Cost acc to per feet length**	**955.42**

Project on Calculating the cost of BFGI Boundary wall

Report

on

Introduction to Neural Networks using MATLAB

Eligible Students: B.Tech 8th Semester

Date: 11-01-2018 to 29-03-2018

Duration of Course: 32 Hours

Course Code: CC_INM

No. of students Enrolled: 34

Timing: 1:50 PM-3.20 PM

Days: Thursday & Friday

Course Coordinator: Er. Dinesh Kumar, Assistant Professor (EE)

The course on "Introduction and Implementation of Neural Networks" was conducted for eligible B.Tech. 4th-semester students. It was conducted over a duration of 32 hours, with classes held on Thursdays and Fridays from 1:50 PM to 3:20 PM. Out of the enrolled students, 30 students had successfully completed the course.

The Introduction to Neural Networks using MATLAB course provided students with a comprehensive understanding of neural networks and their applications. The course covered the structure of neural networks, different learning processes, and the types of learning categories. It also focused on the implementation of neural networks using MATLAB, including the MATLAB neural network toolbox and various algorithms.

Teaching Pedagogy:

The course followed a structured teaching approach, covering four modules that progressively built upon the fundamental concepts of neural networks. Each module provided theoretical knowledge and practical examples to enhance understanding. The teaching methods included lectures, demonstrations, hands-on practice sessions, and the use of MATLAB for implementation. The students' progress and understanding were assessed through skill tests, technical knowledge assessments, hands-on practice sessions, and regular attendance.

Topics Covered:

1. Introduction of Neural Networks: Understanding the structure of neural networks, the learning process, and visualization techniques.
2. Application of Neural Networks: Exploring applications in facial recognition, stock market prediction, social media analysis, aerospace, defense, and healthcare.
3. Theory of Neural Networks: Covering the basics and importance of neural networks, classification methods, and implementing neural networks using MATLAB code and the neural network toolbox.
4. A Neural Network Demo: Showcasing the use of neural networks in artificial intelligence, machine learning, text translation, and facial identification.

Assessment Procedure:

The students were evaluated throughout the course based on four parameters: Technical Knowledge, Hands-on Practice, Skill Test, and Attendance. Each parameter carried a certain weightage in the overall evaluation.

1. Technical Knowledge in Concerned Field (20 marks):

This parameter measured their theoretical knowledge, conceptual understanding, and ability to apply that knowledge to practical scenarios.

2. Hands-on Practice (10 marks):

Hands-on practice evaluated the student's ability to apply their knowledge in practical situations. It measured their proficiency in utilizing tools, techniques, or software relevant to the course.

3. Skill Test (10 marks):

The skill test assessed the student's competency and proficiency in specific skills related to the course. It focused on practical skills that were essential for the field of study.

4. Attendance (10 marks):

Attendance refers to the student's regular presence in the course. It emphasizes the importance of active participation and consistent engagement throughout the duration of the program.

Outcome:

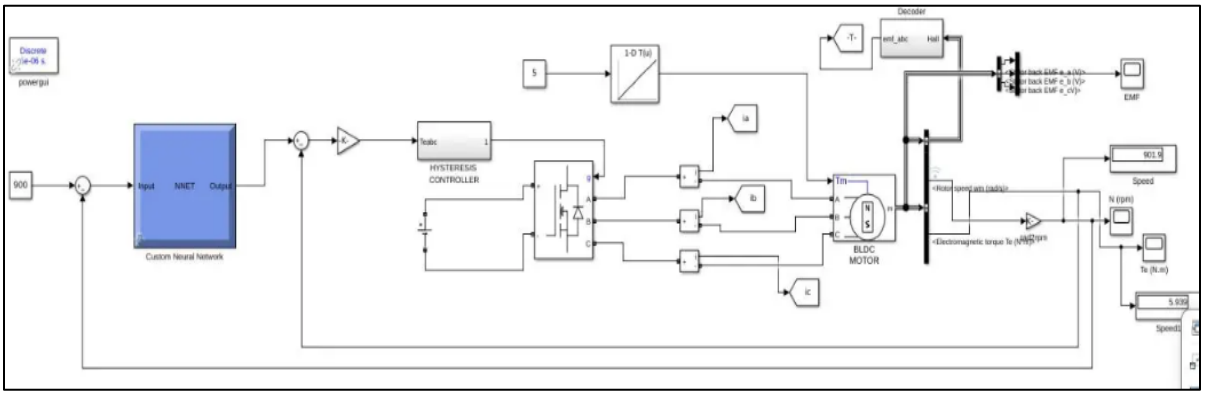
Upon completion of the course, the students have achieved the following learning outcomes:

1. Proficiency in MATLAB neural network tool-box:

- The students have developed the ability to effectively utilize the MATLAB neural network tool-box for various applications.

2. Implementation of various algorithms of neural networks in MATLAB:
    - The students have gained familiarity with implementing different neural network algorithms using MATLAB, enabling them to solve complex problems.
3. Familiarity with program scripts and functions:
    - The students have acquired an understanding of the creation and execution of program scripts and functions using mathematical formulas in neural networks.
4. Ability to design basic models of neural networks in various fields:
    - The students have developed skills to design and create basic neural network models applicable to diverse domains.

It can be observed that after completing the course, the students have successfully attained proficiency in MATLAB neural network tool-box, implemented various algorithms of neural networks in MATLAB, gained familiarity with program scripts and functions, and acquired the ability to design basic models of neural networks in various fields. These outcomes highlight the students' progress and achievement in the course.



Project on Speed Control of BLDC Motor using Neural Network in MATLAB Simulink

Report

on

Solar Photovoltaic Modeling and Simulation

Eligible Students: B.Tech 6th Semester

Date: 11/01/2018 to 29/03/2018

Duration of Course: 32 Hours

Course Code: CC_SPMS

No. of students Enrolled: 20

Timing: 1:50 PM-3.20 PM

Days: Thursday & Monday

Course Coordinator: Er. Pushpinder Sharma, Assistant Professor (ECE)

The course on Solar Photovoltaic Modeling and Simulation was conducted from 11th January 2018 to 29th March 2018 for eligible students of B.Tech 6th semester. Out of the enrolled students, 18 students had successfully completed the course. The course aimed to provide students with a comprehensive understanding of solar photovoltaic technology, its components, and practical applications..

The Solar Photovoltaic Modeling and Simulation course focused on providing students with a comprehensive understanding of solar photovoltaic technology and its practical applications. The course covered various aspects, including the estimation of incident energy on PV cells, sizing of PV systems, maximum power point tracking (MPPT) algorithms, PV-battery interfaces, interfacing methods for PV and water pumping, and life cycle costing.

Teaching Pedagogy:

The course employed a structured teaching approach, covering six modules that progressively built upon the fundamental concepts of solar photovoltaic systems. Each module provided in-depth knowledge and practical insights into the respective topic. The teaching methods included lectures, hands-on practice sessions, skill tests, and technical knowledge assessments. Students were also required to maintain regular attendance throughout the course.

Topics Covered:

The course comprised six modules, each addressing different aspects of solar photovoltaic modeling and simulation:

Module 1: The PV Cell Incident Energy Estimation

- Introduction to PV cells and their basics
- Estimation of incident energy on PV cells

Module 2: Sizing PV, Maximum Power Point Tracking

- Concepts of sizing PV systems
- Methods for achieving maximum power point tracking (MPPT)

Module 3: MPPT Algorithms

- Exploration of different algorithms used for MPPT in PV systems

Module 4: PV-Battery Interfaces, Peltier Cooling

- Different methods of interfacing PV systems with battery banks
- Cooling approaches using Peltier cooling

Module 5: PV and Water Pumping, PV-Grid Interface-I

- Various methodologies for interfacing PV systems with water pumps
- PV-grid interface approaches and techniques

Module 6: Interface-II and Life Cycle Costing

- Understanding the basics of life cycle analysis
- Interfacing methods and approaches in PV systems
- Incorporating life cycle costing in PV system design

Assessment Procedure:

The students were evaluated throughout the course based on four parameters: Technical Knowledge, Hands-on Practice, Skill Test, and Attendance. Each parameter carried a certain weightage in the overall evaluation.

1. Technical Knowledge in Concerned Field (20 marks):

This parameter measured their theoretical knowledge, conceptual understanding, and ability to apply that knowledge to practical scenarios.

2. Hands-on Practice (10 marks):

Hands-on practice evaluated the student's ability to apply their knowledge in practical situations. It measured their proficiency in utilizing tools, techniques, or software relevant to the course.

3. Skill Test (10 marks):

The skill test assessed the student's competency and proficiency in specific skills related to the course. It focused on practical skills that were essential for the field of study.

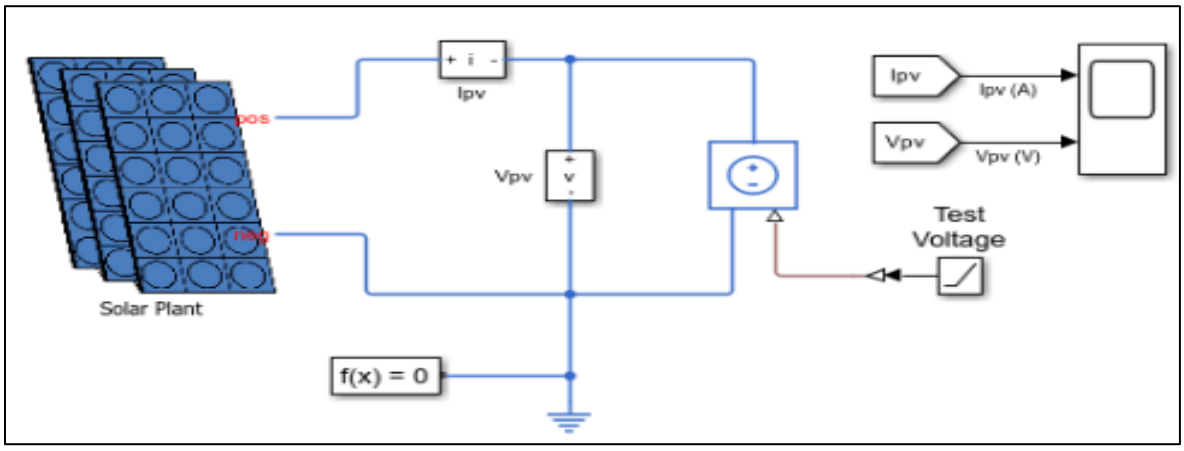
4. Attendance (10 marks):

Attendance refers to the student's regular presence in the course. It emphasizes the importance of active participation and consistent engagement throughout the duration of the program.

Outcome:

After completion of the course, the students have achieved the following learning outcomes:

1. Acquiring knowledge about information and regulations related to solar photovoltaic technology:
    - The students have gained a comprehensive understanding of the relevant organizations, major projects at the international level, and the main sources of information and regulations in the field of solar photovoltaic technology.
2. Understanding how to specify, analyze, and design (sizing) an autonomous photovoltaic system:
    - The students have developed the skills to specify the requirements, analyze the components, and design the sizing of an autonomous photovoltaic system.
3. Analyzing the behavior of self-consumption demand and understanding the role of electrical systems in the industry:
    - The students have gained the ability to analyze the energy consumption patterns of self-consumption systems and understand the role of electrical systems in industrial settings.
4. Designing basic engineering projects based on Solar PV:
    - The students have acquired the necessary skills to design and plan basic engineering projects that utilize solar photovoltaic technology.



Project on Analysis of Solar Photovoltaic System Shading - MATLAB & Simulink

Report

on

Cloud Computing Foundations

Eligible Students: B.Tech. 5th Semester

Date: 22-08-2017 to 31-10-2017

Duration of Course: 32 Hours

Course Code: CC_CCF

No. of Students Enrolled in the course: 40

Timing: 11:30 to 1:05

Days: Tuesday & Thursday

Course Coordinator: Er. Ankit Sharma, Assistant Professor (CSE)

The Cloud Computing Foundations course designed for B.Tech. 5th-year students during session 2017-18 and aims to provide them with a solid understanding of cloud computing and its applications. The course spans 32 hours and has seen the enrollment of 40 students, with 37 successfully completing the course and receiving certificates.

The course introduced students to the concepts of cloud storage, the characteristics of cloud computing, and the various services and deployment models available. Students also learned about cloud computing companies, service providers, infrastructure, advantages, and issues. The course served as a foundation for students to comprehend the fundamentals of cloud computing and its practical implementation.

Teaching Pedagogy:

The teaching pedagogy of the Cloud Computing Foundations course emphasizes a comprehensive approach that combines theoretical knowledge with practical hands-on experience. Throughout the course, students are evaluated based on their technical knowledge, hands-on practice, skill tests, and attendance. This multifaceted assessment approach ensures that students not only grasp the theoretical concepts but also develop practical skills in working with cloud computing technologies. The course coordinator provide guidance and support to the students, fostering an interactive and engaging learning environment. The positive feedback received from the students highlights the effectiveness of the teaching pedagogy.

Topic Covered:

Module 1: Cloud Computing Fundamentals- Introduction to cloud storage and characteristics of cloud computing.

Module 2: Role of Virtualization in Cloud Computing- Importance and impact of virtualization in cloud computing environments.

Module 3: Installation of Hadoop- Hands-on experience in installing and configuring Hadoop, a widely-used cloud computing tool.

Module 4: Moving Data in and out of Hadoop- Techniques and best practices for efficient data transfer to and from Hadoop.

Module 5: Working with Record Reader and Record Writer- Practical skills in reading and writing data records for effective data processing.

Module 6: Deployment of Cloud Computing Tools and Technologies- Practical aspects of deploying and managing cloud-based services.

Assessment Procedure:

Throughout the course, students were evaluated based on four parameters: Technical Knowledge, Hands-on Practice, Skill Test, and Attendance. Each parameter carried a certain weightage in the overall evaluation.

1. **Technical Knowledge in Concerned Field (20 marks):**

This parameter measured their theoretical knowledge, conceptual understanding, and ability to apply that knowledge to practical scenarios in data analytics using Python.

2. **Hands-on Practice (10 marks):**

Hands-on practice evaluated the student's ability to apply their knowledge in practical data analytics tasks. It measured their proficiency in utilizing Python libraries and techniques to analyze and manipulate datasets.

3. **Skill Test (10 marks):**

The skill test assessed the student's competency and proficiency in specific skills related to data analytics using Python. It focused on their ability to perform data cleaning, exploratory data analysis, and statistical analysis.

4. **Attendance (10 marks):**

Attendance referred to the student's regular presence in the course, emphasizing active participation

and consistent engagement in the program.

Outcomes:

1. Students acquired a comprehensive understanding of cloud storage, characteristics of cloud computing, and delivery models.

2. Students learned about the key security and compliance challenges of cloud computing and develop strategies to address them effectively.

3. Students gain insights into the technical and organizational challenges associated with implementing and managing cloud computing systems.

4. Students acquired knowledge of the architecture and workings of Hadoop, enabling them to leverage its capabilities effectively.

5. Students developed the skills to implement cloud security measures, ensuring the integrity and confidentiality of cloud-based systems.

Photograph:

Report

on

Network Security Essentials

Eligible Students: B. Tech. 7th Semester

Date: 22-08-2017 to 12-10-2017

Duration of Course: 32 Hours

Course Code: CC_NSE

No. of Students Enrolled in the course: 32

Timing: 1:50 to 3:20

Days: Thursday & Friday

Course Coordinator: Er. Ramil Gupta, Assistant professor (CSE)

The Network Security Essentials course is designed for B.Tech. 7th-semester students, providing them with a comprehensive understanding of securing computer networks and data. The course focus on the importance of network security measures, encompassing both hardware and software systems. The Network Security course provide students with practical knowledge and skills to protect network communications, detect potential threats, and implement effective security measures. Organizations are actively seeking individuals with expertise in network security to ensure the integrity and protection of their networks. The Network Security Essentials course equips students with the necessary skills to address the challenges of network security and contribute to the field of cyber security.

The course duration was 32 hours where out of 32 enrolled students, 30 students have successfully completed the course. By the end of the course, students are equipped to address network security challenges and contribute to maintaining the integrity and confidentiality of networked systems.

Teaching Pedagogy:

The teaching pedagogy for the Network Security course incorporates a comprehensive approach that combines theoretical knowledge with practical application. The instructors utilize a variety of teaching methods, including lectures, discussions, case studies, and hands-on exercises. Students are encouraged to actively participate in class discussions, share their insights, and engage in group activities to enhance their understanding of network security concepts. Practical exercises, such as

simulated attack scenarios and vulnerability assessments, provide students with real-world experience in identifying and mitigating security threats. Regular assessments and feedback sessions ensure that students grasp the subject matter effectively.

Topics Covered:

Module 1: Introduction to Network Security- Students gain a foundational understanding of network security, covering encryption, authentication, and access control to secure network communications.

Module 2: DDoS Attacks- Insights into Distributed Denial of Service (DDoS) attacks, including techniques, impact on network resources, and mitigation strategies.

Module 3: Cyber Crimes- Exploration of cyber threats, hacking techniques, and legal and ethical considerations related to cybercrimes.

Module 4: Browser Security and HTTPS- Understanding browser security models and the significance of HTTPS for secure web communications.

Module 5: DNS Security- Focus on DNS security, including DNS spoofing, DNSSEC, and best practices for securing DNS infrastructure.

Module 6: Internet Protocols- Comprehension of internet protocols such as TCP/IP and ICMP, enabling effective analysis and troubleshooting of network issues

Assessment Procedure:

Throughout the course, students were evaluated based on four parameters: Technical Knowledge, Hands-on Practice, Skill Test, and Attendance. Each parameter carried a certain weightage in the overall evaluation.

1. **Technical Knowledge in Concerned Field (20 marks):**

This parameter measured their theoretical knowledge, conceptual understanding, and ability to apply that knowledge to practical scenarios in data analytics using Python.

2. **Hands-on Practice (10 marks):**

Hands-on practice evaluated the student's ability to apply their knowledge in practical data analytics tasks. It measured their proficiency in utilizing Python libraries and techniques to analyze and manipulate datasets.

3. **Skill Test (10 marks):**

The skill test assessed the student's competency and proficiency in specific skills related to data analytics using Python. It focused on their ability to perform data cleaning, exploratory data

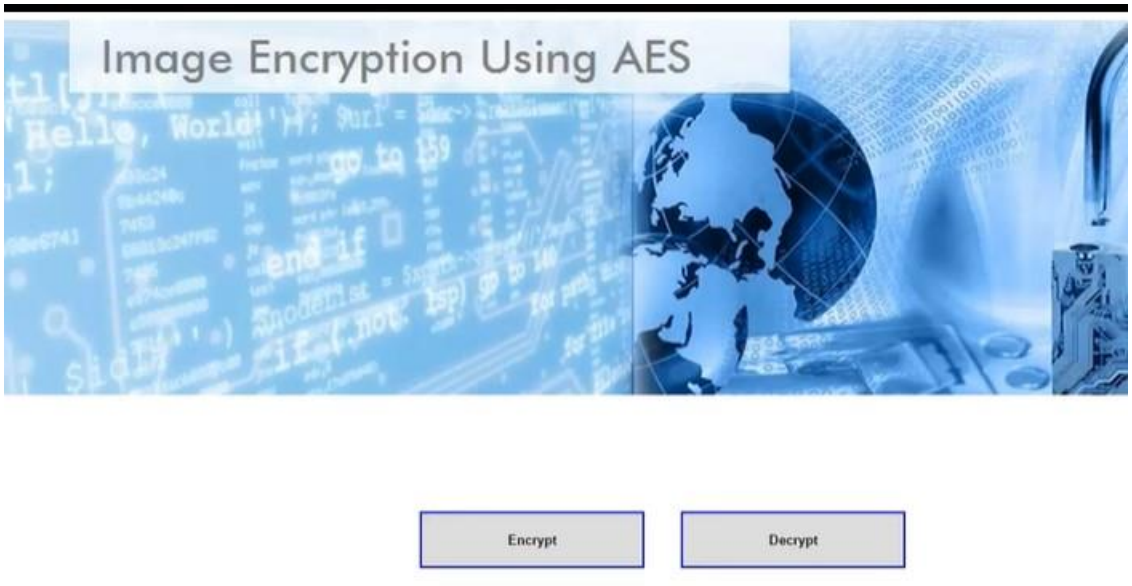
analysis, and statistical analysis.

4. Attendance (10 marks):

Attendance referred to the student's regular presence in the course, emphasizing active participation and consistent engagement in the program.

Outcome:

1. Students gain a comprehensive understanding of network security principles, concepts, and best practices. They are equipped with the knowledge to assess and address potential vulnerabilities effectively.
2. They developed practical skills in implementing various security protocols, such as firewall configuration, access control lists and virtual private networks (VPNs).
3. Students learned to identify and mitigate common network threats, including malware, phishing attacks, and network intrusion attempts.
4. They acquired knowledge about using intrusion detection systems (IDS) and intrusion prevention systems (IPS) to protect network resources.
5. As part of the course, participants engage in a hands-on project that simulates real-world network security scenarios by working on project “Image Encryption and Decryption”



Project on Image Encryption Using AES

Report

on

Construction Materials Testing

Eligible Students: B.Tech. 7th Semester

Date: 17-08-2017 to 28-11-2017

Duration of Course: 32 Hours

Course Code: CC_CMT

No. of students Enrolled: 40

Timing: 02.35-04.00

Days: Tuesday & Thursday

Course Coordinator: Er. Sandeep Maan, Assistant Professor (CE)

The Construction Materials Testing course focuses on evaluating the physical and mechanical properties of materials used in construction to ensure they meet specific standards. The course emphasizes the importance of safety, durability, and performance in building structures. Students learn about the interaction of ingredients like cement, water, aggregates, and admixtures in influencing the properties of concrete.

Throughout the course, students were evaluated based on skill tests, hands-on practice, attendance, and technical knowledge. The feedback from students was overwhelmingly positive, indicating their successful acquisition of knowledge and skills. 38 students received certificates upon completing the course.

Teaching Pedagogy:

The course covers various modules that encompass testing procedures for different building materials. Students learn to conduct tests on bricks, sand, aggregates, cement, and concrete. They acquire knowledge and skills related to shape and size tests, water absorption tests, crushing strength tests, grading tests, specific gravity tests, workability tests, and compressive strength tests.

Topics Covered:

The modules covered in this course are as follows:

Module-1 Test on Bricks

Shape & Size Test, Water Absorption Test, Crushing Strength Test, Presence of Soluble Salts

Module-2 Test on Sand and Aggregates

Grading Test, Specific Gravity and water absorption test

Module-3 Test on Cement

Consistency and Setting time test, Specific Gravity Test, Soundness test, Compressive strength test

Module-4 Test on Concrete

Workability Test, Compressive strength Test

Assessment Procedure:

The students were evaluated throughout the course based on four parameters: Technical Knowledge, Hands-on Practice, Skill Test, and Attendance. Each parameter carried a certain weightage in the overall evaluation.

1. Technical Knowledge in Concerned Field (20 marks):

This parameter measured their theoretical knowledge, conceptual understanding, and ability to apply that knowledge to practical scenarios.

2. Hands-on Practice (10 marks):

Hands-on practice evaluated the student's ability to apply their knowledge in practical situations. It measured their proficiency in utilizing tools, techniques, or software relevant to the course.

3. Skill Test (10 marks):

The skill test assessed the student's competency and proficiency in specific skills related to the course. It focused on practical skills that were essential for the field of study.

4. Attendance (10 marks):

Attendance refers to the student's regular presence in the course. It emphasizes the importance of active participation and consistent engagement throughout the duration of the program.

Outcomes:

1. The course provided students with essential knowledge and comprehension of testing methodologies for a wide range of building materials, including bricks, cement, concrete, sand, and aggregates.
2. Students enhanced their abilities to perform experimental tasks associated with material testing, fostering effective communication and streamlined task execution.

3. Students developed the proficiency to validate assumptions made in the study of building materials, guaranteeing the accuracy and reliability of material analysis.
4. Students acquired the skills to effectively integrate laboratory test results into the construction process.
5. Overall, students gained necessary knowledge, skills, and understanding to conduct material testing and apply test results in the construction field by doing a project entitled "Concrete as a partial replacement of coarse aggregates"

Project on Flexural Strength test

Report

on

Sustainable Waste Management

Eligible Students: B.Tech. 3rd Semester

Date: 17-08-2017 to 28-11-2017

Duration of Course: 33 Hours

Course Code: CC_SWM

No. of students Enrolled: 40

Timing: 01.50-03.20

Days: Tuesday & Thursday

Course Coordinator: Er. Rajan Vinayak, Assistant Professor (CE)

The Sustainable Waste Management course focused on evaluating the physical and mechanical properties of building materials to ensure they meet specific standards and requirements for construction. The course emphasized the importance of understanding the interaction between various ingredients, such as cement, water, aggregates, and admixtures, in influencing the properties of concrete. It aimed to ensure the safety, durability, and performance of building structures.

Students were evaluated through skill tests, hands-on practice, attendance, and technical knowledge, and 38 out of 40 students successfully completed the course and received certificates. The course received positive feedback from the students.

Teaching Pedagogy:

The course covered modules that provided a comprehensive understanding of solid waste management, including municipal solid waste (MSW), construction and demolition (C&D) waste, and electronic waste (E-waste) management. Students learned about the characteristics, quantities, collection, transportation, segregation, processing, and disposal methods for different types of waste. The course also highlighted the regulations, beneficial reuse of waste materials, and management challenges associated with waste management.

Topics Covered:

The modules covered in this course are as follows:

Module-1 Introduction to Solid Waste Management

Municipal Solid Waste (MSW) Characteristics and its Quantities and Smart Cities Program

Module-2 Municipal Solid Waste Characteristics and Quantities

Municipal Solid Waste Collection, Transportation and Segregation and Processing of solid waste

Module-3 Disposal of Municipal Solid Waste

Municipal Solid Waste Disposal, Waste Disposal of Landfill, Biochemical Process and Composting and Energy Recovery from Municipal Solid Waste

Module-4 Construction and Demolition (C&D) Waste Management

C&D Waste – Regulation, Beneficial Reuse of C&D Waste Materials

Assessment Procedure:

The students were evaluated throughout the course based on four parameters: Technical Knowledge, Hands-on Practice, Skill Test, and Attendance. Each parameter carried a certain weightage in the overall evaluation.

1. Technical Knowledge in Concerned Field (20 marks):

This parameter measured their theoretical knowledge, conceptual understanding, and ability to apply that knowledge to practical scenarios.

2. Hands-on Practice (10 marks):

Hands-on practice evaluated the student's ability to apply their knowledge in practical situations. It measured their proficiency in utilizing tools, techniques, or software relevant to the course.

3. Skill Test (10 marks):

The skill test assessed the student's competency and proficiency in specific skills related to the course. It focused on practical skills that were essential for the field of study.

4. Attendance (10 marks):

Attendance refers to the student's regular presence in the course. It emphasizes the importance of active participation and consistent engagement throughout the duration of the program.

Outcomes:

The course outcomes can be summarized as follows:

1. The course equipped students with the necessary skills and knowledge to effectively protect human health and the environment through the prevention, recycling, and management of solid waste.
2. Students developed their teamwork abilities by engaging in collaborative tasks and experiments during the course.
3. Through practical application, students were able to validate assumptions related to waste prevention, recycling, composting, and disposal programs.
4. As a final component of the course, students allowed to apply their knowledge and skills towards the development of effective waste management strategies in a smart city and Enhancing Waste Management in Urban Environments by using Construction and Demolition (C&D) waste.

Project on Resuse of Construction and Demolition (C&D) Waste aggregates in concrete

Report

on

Computer Aided Design- SOLIDWORKS

Eligible Students: B.Tech. 3rd Semester

Date: 16-08-17 to 23-10-2017

Duration of Course: 33 Hours

Course Code: CC-CADSW

No. of Students Enrolled in the course: 36

Timing: 11:30 am to 01:05 pm

Days: Monday & Wednesday

Course Coordinator: Er. Ashish Kumar

SOLIDWORKS course conducted during the session 2017-18 for B.Tech. students. The CAD SolidWorks course offers a comprehensive learning experience for individuals aspiring to develop proficiency in computer-aided design (CAD) using the SolidWorks software. SolidWorks is a powerful and widely-used 3D CAD software that enables users to create precise and detailed models for various industries, including engineering, product design, and manufacturing. The course duration was 33 hours, where 36 enrolled students successfully completed the course.

This course aims to equip students with the necessary knowledge and skills to effectively utilize SolidWorks in designing and modeling 3D objects. Through a combination of theoretical concepts, hands-on practice, and interactive sessions, students will learn to navigate the SolidWorks interface, apply design principles, and create complex 3D models.

Teaching Pedagogy

The teaching pedagogy for the CAD SolidWorks course involves a comprehensive and interactive approach. Through lectures, demonstrations, and hands-on practice, students gain practical skills in utilizing SolidWorks for computer-aided design. Individual guidance and collaborative learning activities foster a supportive environment for students to overcome challenges and enhance their understanding. Regular assessments and feedback ensure progress and reinforcement of learning. Real-world applications and project-based learning

provide practical relevance, while resources for continuous learning enable students to explore advanced features of SolidWorks. This pedagogy aims to equip students with the necessary skills to effectively use SolidWorks for designing and modeling 3D objects.

Topics Covered:

Module-1: Getting started with SolidWorks introduces the software, its interface, screen layout, icons, and online help for troubleshooting.

Module-2: Opening a new working space covers setting up the working directory, customization, file saving, addressing redundancy, and familiarizing with SolidWorks icons.

Module-3: Sketch focuses on sketching techniques, including modification, constraints, dimensioning, and inspection.

Module-4: Part modeling covers generating planes, sketching within part modeling, and using tools like extrude, revolve, sweep, and editing functions for refining part models.

Module-5: Assembly of components includes techniques for component dragging, pattern creation, model display management, and generating a bill of materials.

Module-6: Layout covers table creation, annotation, sketching, and unit modification to enhance the presentation and documentation aspects of SolidWorks projects.

Assessment Procedure:

The students were evaluated throughout the course based on four parameters: Technical Knowledge, Hands-on Practice, Skill Test, and Attendance. Each parameter carried a certain weightage in the overall evaluation.

1. **Technical Knowledge in Concerned Field (20 marks):**

   This parameter measured their theoretical knowledge, conceptual understanding, and ability to apply that knowledge to practical scenarios.

2. **Hands-on Practice (10 marks):**

   Hands-on practice evaluated the student's ability to apply their knowledge in practical situations. It measured their proficiency in utilizing tools, techniques, or software relevant to the course.

3. **Skill Test (10 marks):**

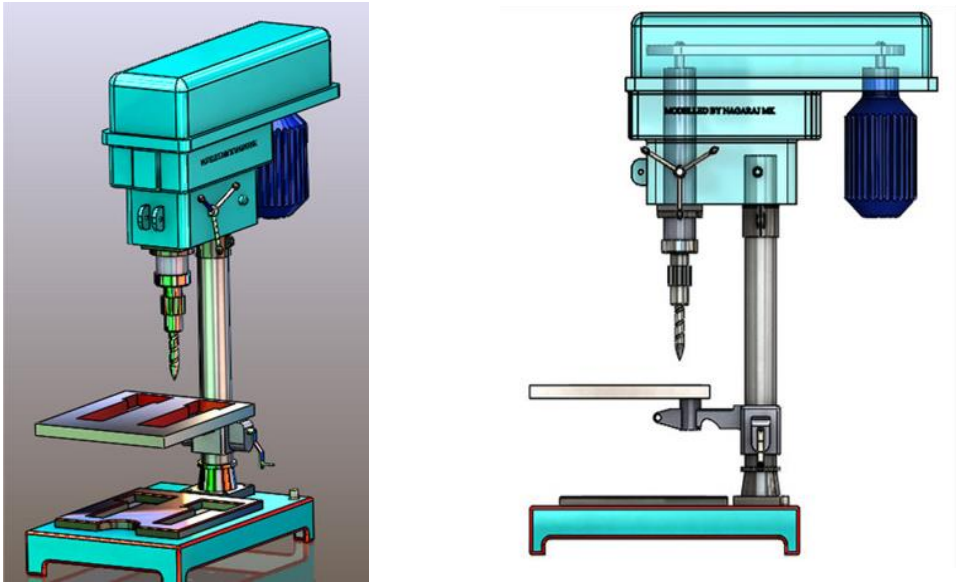
   The skill test assessed the student's competency and proficiency in specific skills related to the course. It focused on practical skills that were essential for the field of study.

4. Attendance (10 marks):

Attendance refers to the student's regular presence in the course. It emphasizes the importance of active participation and consistent engagement throughout the duration of the program.

Outcome:

1. Demonstrated competency with multiple drawing and modification commands in SolidWorks.
2. Proficiently created three-dimensional solid models using SolidWorks.
3. Assembled multiple solid models to create complex three-dimensional assemblies.
4. Applied industry standards in the preparation of technical mechanical drawings, ensuring adherence to established guidelines.
5. Analyzed fits and tolerances in mechanical assembled systems, enabling evaluation and optimization of design functionality.
6. Developed skills in analyzing the motion mechanisms of mechanical systems, gaining a comprehensive understanding of component interactions and system functioning.
7. Students made a design of a drilling machine using Solid Works software and many more. It was the major achievement of the certificate course.



Design of a Drilling Machine using SOLIDWORKS software

Report

on

Kobetsu Kaizen Methodology

Eligible Students: B.Tech. 5th Semester

Date: 16-08-17 to 23-10-2017

Duration of Course: 32 Hours

Course Code: ME-KKM

No. of Students Enrolled in the course: 30

Timing: 01:50 pm to 3:20 pm

Days: Monday & Wednesday

Course Coordinator: Er. Ashish Kumar

The Kobetsu Kaizen (KK) Methodology course conducted during the session 2017-18 for B.Tech. students. The KK approach is a crucial pillar of Total Productive Maintenance (TPM), aimed at unifying the kaizen effort across divisions and improving overall equipment effectiveness. TPM is a comprehensive maintenance approach that focuses on eliminating losses and optimizing production processes. The course duration was 32 hours, where 30 enrolled students successfully completed the course.

The faculty expert ensured that the KK pillar specifically targets waste reduction and loss control by analyzing losses through various quality control tools and proposing suggestions for their elimination. The KK approach is an integral part of achieving zero losses and enhancing the Overall Equipment Efficiency (OEE) of both processes and the entire plant.

Topics Covered:

MODULE-1: Overview of Kaizen

The module provides an introduction to Kaizen, the philosophy of continuous improvement. It explains the concept of GEMBA, which focuses on improvement at the workplace where value is created. The module also clarifies what Kaizen is not and emphasizes the reasons why organizations should adopt Kaizen for their improvement efforts.

MODULE-2: Continuous Improvement

The module explores the application of continuous improvement in the PQCDEHSM framework. It covers the elimination or reduction of the 7+1 types of waste and highlights the importance of attitudinal change within organizations. The module introduces the 5W 1H principle to guide effective implementation of Kaizen projects.

MODULE-3: 1H of Kaizen

The module delves into the practical aspects of implementing Kaizen. It focuses on identifying and eliminating the three forms of waste: Muda, Mura, and Muri. The module also introduces the SCAMPER methodology for generating innovative ideas and solutions.

MODULE-4: Kaizen Sheet

The module showcases real-life examples of successful Kaizen projects in different industries. It covers the evaluation of Kaizen projects and emphasizes the importance of celebrating improvement through events like Kaizen Mela. This module serves as a course wrap-up, summarizing the key concepts and reinforcing the significance of continuous improvement in organizations.

Teaching Pedagogy

The teaching pedagogy for the Kobetsu Kaizen (KK) course focuses on a comprehensive and practical approach to Total Productive Maintenance (TPM). It includes lectures on theoretical concepts, case studies, and examples to illustrate the application of KK in waste reduction and loss control. Students learn to use quality control tools, engage in group discussions and brainstorming, and participate in practical implementation exercises. Emphasis is placed on cultivating a continuous improvement mindset, and regular assessments and feedback are provided. The pedagogy aims to equip students with the knowledge, skills, and mindset to effectively analyze losses, propose improvement suggestions, and contribute to operational excellence through waste reduction and enhanced equipment effectiveness.

Assessment Procedure:

The students were evaluated throughout the course based on four parameters: Technical Knowledge, Hands-on Practice, Skill Test, and Attendance. Each parameter carried a certain weightage in the overall evaluation.

1. **Technical Knowledge in Concerned Field (20 marks):**
   This parameter measured their theoretical knowledge, conceptual understanding, and ability to apply that knowledge to practical scenarios.

2. **Hands-on Practice (10 marks):**
   Hands-on practice evaluated the student's ability to apply their knowledge in practical situations. It measured their proficiency in utilizing tools, techniques, or software relevant to the course.

3. **Skill Test (10 marks):**

   The skill test assessed the student's competency and proficiency in specific skills related to the course. It focused on practical skills that were essential for the field of study.

4. **Attendance (10 marks):**
   Attendance refers to the student's regular presence in the course. It emphasizes the importance of active participation and consistent engagement throughout the duration of the program.

Outcome:

1. Acquired a comprehensive understanding of the fundamentals of kaizen, including its purpose and its relationship to lean manufacturing principles.
2. Developed knowledge about the benefits associated with kaizen improvements in various industries.
3. Gained the ability to describe the phases involved in a kaizen event, including planning, implementation, evaluation, and follow-up.
4. Explored practical examples and case studies to understand the application of kaizen principles in real-world scenarios.
5. Developed a deep understanding of the importance of continuous improvement and the role of kaizen in driving organizational efficiency and effectiveness.
6. Equipped with the skills and insights necessary to contribute to the implementation of kaizen strategies in their respective fields, promoting a culture of continuous improvement.
7. Students learned the Optimizing Efficiency Through Kobetsu Kaizen Methodology and many more. It was the major achievement of the certificate course.

Project on Optimizing Efficiency through Kobestu Kaizen ,Methodology

Report

on

Basics of Photovoltaic System

Eligible Students: B.Tech 6th Semester

Date: 16-08-2017 to 01-11-2017

Duration of Course: 32 Hours

Course Code: CC_BPS

No. of students Enrolled: 34

Timing: 9:50 AM-11:30 AM

Days: Wednesday & Thrusday

Course Coordinator: Er. Harsimran Singh, Assistant Professor (EE)

This report highlights the key aspects of a course on designing and optimizing solar PV models conducted for eligible students of B.Tech. 6th Semester. 32 students had successfully completed the course.

The Design and Optimization of Solar PV Models course provided participants with comprehensive knowledge and skills related to solar photovoltaic (PV) technology. The course covered the major components of a solar PV system, including solar charge controllers, inverters, battery banks, auxiliary energy sources, and loads. Participants also learned about the role of solar power optimizers in improving power output and efficiency. The course emphasized the renewable and "green" nature of solar power, highlighting its benefits as a sustainable energy source.

Teaching Pedagogy:

The course followed a structured approach with six modules. It introduced participants to PV cells and understanding of their operation, sizing PV systems, maximum power point tracking (MPPT) methods, MPPT algorithms, PV-battery interfaces, cooling approaches, different methods of interfacing with water pumps, PV-grid interfaces and their various methodologies.

Topics Covered:

The course covered various modules to equip the students with the necessary knowledge and skills related to solar PV technology. The modules included:

Module 1: The PV Cell Incident Energy Estimation - Introduction to PV cell and basics.

Module 2: Sizing PV, Maximum Power Point Tracking - Concepts of sizing and methods for achieving Maximum Power Point Tracking.

Module 3: MPPT Algorithms - Exploration of different algorithms for Maximum Power Point Tracking.

Module 4: PV-Battery Interfaces, Peltier Cooling - Different interfacing methods and cooling approaches for PV-battery systems.

Module 5: PV and Water Pumping, PV-Grid Interface-I - Interfacing methodologies for PV-based water pumps and grid connections.

Module 6: Interface-II and Life Cycle Costing - Understanding lifecycle analysis, interfacing methods, and approaches.

Assessment Procedure:

The students were evaluated throughout the course based on four parameters: Technical Knowledge, Hands-on Practice, Skill Test, and Attendance. Each parameter carried a certain weightage in the overall evaluation.

1. Technical Knowledge in Concerned Field (20 marks):

This parameter measured their theoretical knowledge, conceptual understanding, and ability to apply that knowledge to practical scenarios.

2. Hands-on Practice (10 marks):

Hands-on practice evaluated the student's ability to apply their knowledge in practical situations. It measured their proficiency in utilizing tools, techniques, or software relevant to the course.

3. Skill Test (10 marks):

The skill test assessed the student's competency and proficiency in specific skills related to the course. It focused on practical skills that were essential for the field of study.

4. Attendance (10 marks):

Attendance refers to the student's regular presence in the course. It emphasizes the importance of active participation and consistent engagement throughout the duration of the program.

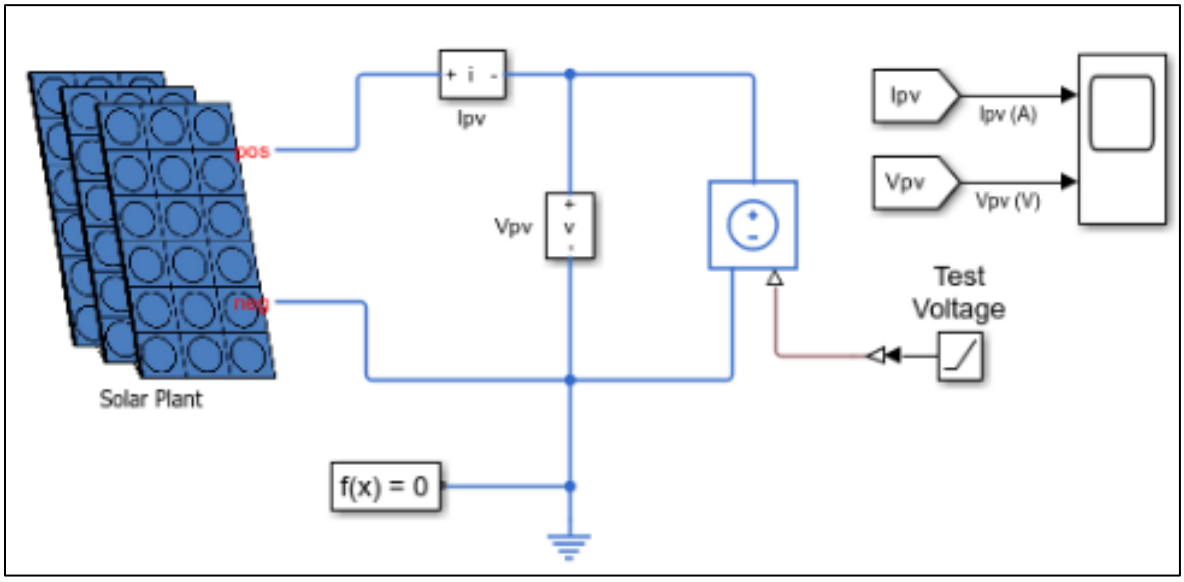
Outcome:

Upon completion of the course, the students achieved several key outcomes:

1. Acquired knowledge about relevant organizations, major international projects, and information sources related to solar PV technology.

2. Developed the ability to specify, analyze, and design autonomous photovoltaic systems.
3. Gained insights into analyzing the behavior of self-consumption demand and understanding network management measurements.
4. Learned to carry out basic engineering projects based on solar PV technology.

In conclusion, the course on the design and optimization of solar PV models provided eligible B.Tech.6th Semester students with a comprehensive understanding of solar PV technology. Through a combination of theoretical learning and practical applications, the students gained the necessary knowledge and skills to specify, analyze, and design autonomous photovoltaic systems. The positive feedback from the students further exemplifies the course's success in achieving its objectives and preparing the students for future endeavors in the field of solar PV technology.



Project on Analysis of Solar Photovoltaic System Shading - MATLAB & Simulink

Report

on

Ladder Logic Programming

Eligible Students: B.Tech 5th Semester

Date: 16/08/2017 to 02/11/2017

Duration of Course: 32 Hours

Course Code: EE_LLP

No. of students Enrolled: 36

Timing: 1:50 PM-3.20 PM

Days: Wednesday & Thursday

Course Coordinator: Er. Dinesh Kumar, Assistant Professor (EE)

The Ladder Logic Programming course, with the course code EE_LLP, was conducted for B.Tech. 5th Semester students of the Electrical Engineering program. The course was held from 16/08/2017 to 02/11/2017, with a total duration of 32 hours. Out of the enrolled students, 35 students had successfully completed the course.

The Ladder Logic Programming course focused on providing students with a comprehensive understanding of Programmable Logic Controllers (PLCs) and their application in industrial automation. PLCs are physical hardware used to monitor and control equipment in various industries, while SCADA (Supervisory Control and Data Acquisition) is a software system that operates on a computer system and facilitates industrial automation.

Teaching Pedagogy:

The course followed a structured approach with four modules. Module 1 introduced students to PLCs, covering their operation, differences from hardwired systems, and distinctions from computers. Module 2 provided an overview of ladder logic, including relay logic, ladder commands, and examples of ladder diagram realization. Module 3 included hands-on practice with PLC timers, counters, interfacing with HMI/SCADA systems, and relays. Module 4 focused on basic programming concepts using ladder logic and the building of logic gates.

Topics Covered:

The course covered several important modules to provide a holistic understanding of ladder logic programming. The modules included:

Module 1: Introduction to Programmable Logic Controllers

- Introduction to PLCs
- Operation of PLCs
- Difference between PLCs and hardwired systems
- Difference between PLCs and computers

Module 2: Overview and Working of PLC Logics

- Relay logic and ladder logic
- Ladder commands
- Examples of PLC ladder diagram realization

Module 3: Hands-on Practice and Concepts

- PLC timers
- PLC counters
- Applications of PLCs
- PLC interfacing with HMI/SCADA systems
- Relays

Module 4: Basic Programming of PLC (Automation System)

- Introduction to ladder logic
- Basic icons in ladder logic
- Building logic gates in software
- Logic gate programming using PLCs

Assessment Procedure:

The students were evaluated throughout the course based on four parameters: Technical Knowledge, Hands-on Practice, Skill Test, and Attendance. Each parameter carried a certain weightage in the overall evaluation.

1. Technical Knowledge in Concerned Field (20 marks):

This parameter measured their theoretical knowledge, conceptual understanding, and ability to apply that knowledge to practical scenarios.

2. Hands-on Practice (10 marks):

Hands-on practice evaluated the student's ability to apply their knowledge in practical situations. It measured their proficiency in utilizing tools, techniques, or software relevant to the course.

3. Skill Test (10 marks):

The skill test assessed the student's competency and proficiency in specific skills related to the course. It focused on practical skills that were essential for the field of study.

4. Attendance (10 marks):

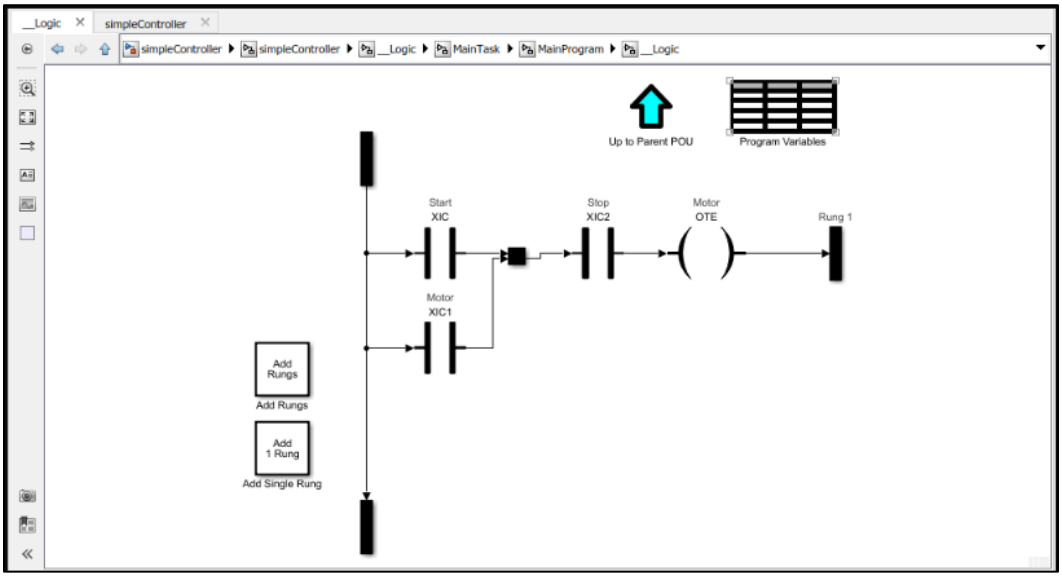
Attendance refers to the student's regular presence in the course. It emphasizes the importance of active participation and consistent engagement throughout the duration of the program.

Outcome:

Upon successful completion of the course, the students achieved the following learning outcomes:

1. The students were able to describe the typical components of a Programmable Logic Controller (PLC).
2. They developed a clear understanding of the basic concepts of PLCs and could explain them effectively.
3. Students became familiar with basic PLC terminology and were able to articulate their meanings.
4. They gained a solid understanding of electrical ladder logic and its relationship to programmed PLC instructions.
5. Students successfully demonstrated their skills through skill tests, displayed technical knowledge, and actively participated in hands-on practice sessions.
6. Out of the 36 students enrolled in the course, 35 students completed it successfully and received certificates for their achievement.

Overall, the Ladder Logic Programming course provided the B.Tech. 5th Semester students with a comprehensive foundation in PLCs and ladder logic programming. The practical approach, combined with theoretical concepts, enabled the students to understand and apply their knowledge effectively. The positive feedback from the students further validated the success of the course in meeting its objectives.



Project of Model and Simulate Ladder Diagrams in Simulink - MATLAB & Simulink

Report

on

Introduction to PLC Programming

Eligible Students: B.Tech 3rd Semester

Date: 16/08/2017 to 02/11/2017

Duration of Course: 32 Hours

Course Code: ECE_IPP

No. of students Enrolled: 20

Timing: 1:50 PM-3.20 PM

Days: Wednesday & Thursday

Course Coordinator: Er. Pushpinder Sharma, Assistant Professor (ECE)

The Introduction to PLC Programming course, with the course code ECE_IPP, was conducted for B.Tech.3rd Semester students. The course aimed to provide an understanding of Programmable Logic Controllers (PLC) and their applications in process automation across various industries. The course took place from 16/08/2017 to 02/11/2017, with a total duration of 32 hours. Out of the enrolled students, 19 students had successfully completed the course.

The "Introduction to PLC Programming" course provided students with a comprehensive understanding of programmable logic controllers (PLCs) and their applications in various industries. The course highlighted the significance of PLCs in process automation across sectors such as telecommunications, water and waste control, energy, oil and gas, and transportation. Students learned about the physical nature of PLCs and their role in monitoring and controlling equipment. The course also introduced the concept of SCADA (Supervisory Control and Data Acquisition) as a crucial system component in industrial automation.

Teaching Pedagogy:

The course was designed to deliver a well-rounded learning experience to the students. It employed a combination of theoretical knowledge and practical hands-on practice. The teaching methodology included lectures, demonstrations, and interactive sessions. The students were exposed to real-world examples and case studies to enhance their understanding of PLC logics, ladder diagrams, timers, counters, and applications. The course also emphasized the interface

between PLCs and HMIs/SCADA systems, enabling students to supervise and control industrial processes both locally and remotely.

Topics Covered:

The course covered several important modules to provide a solid foundation in PLC programming. The modules included:

Module 1: Introduction to Programmable Logic Controllers

- Introduction to PLCs
- Operation of PLCs
- Difference between PLCs and hardwired systems
- Difference between PLCs and computers

Module 2: Overview and Working of PLC Logics

- Relay logic and ladder logic
- Ladder commands
- Examples of PLC ladder diagram realization

Module 3: Hands-on Practice and Concepts

- PLC timers
- PLC counters
- Applications of PLCs
- PLC interfacing with HMI/SCADA systems
- Relays

Module 4: Basic Programming of PLC (Automation System)

- Introduction to ladder logic
- Basic icons in ladder logic
- Building logic gates in software
- Logic gate programming using PLCs

Assessment Procedure:

The students were evaluated throughout the course based on four parameters: Technical Knowledge, Hands-on Practice, Skill Test, and Attendance. Each parameter carried a certain weightage in the overall evaluation.

1. Technical Knowledge in Concerned Field (20 marks):

This parameter measured their theoretical knowledge, conceptual understanding, and ability to apply that knowledge to practical scenarios.

2. Hands-on Practice (10 marks):

Hands-on practice evaluated the student's ability to apply their knowledge in practical situations. It measured their proficiency in utilizing tools, techniques, or software relevant to the course.

3. Skill Test (10 marks):

The skill test assessed the student's competency and proficiency in specific skills related to the course. It focused on practical skills that were essential for the field of study.

4. Attendance (10 marks):

Attendance refers to the student's regular presence in the course. It emphasizes the importance of active participation and consistent engagement throughout the duration of the program.

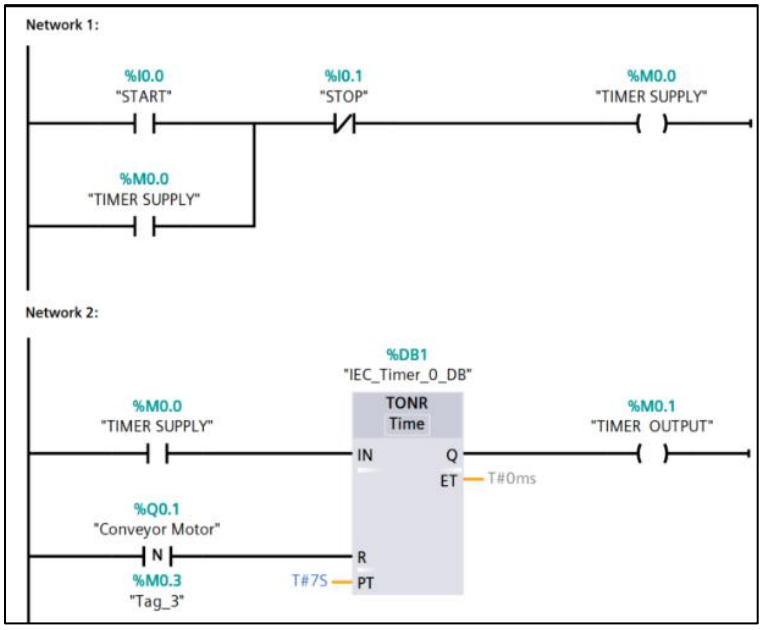
Outcome:

Upon successful completion of the course, the students achieved the following learning outcomes:

1. Students were able to describe the typical components of a Programmable Logic Controller (PLC).
2. They developed a clear understanding of the basic concepts of PLCs and could explain them effectively.
3. Students became familiar with basic PLC terminology and were able to state their meanings accurately.
4. They gained a solid understanding of electrical ladder logic and its relationship to programmed PLC instructions.
5. Students demonstrated their skills through skill tests, displayed technical knowledge, actively participated in hands-on practice sessions, and maintained good attendance.
6. The course received overwhelmingly positive feedback from the students, indicating their satisfaction with the teaching methods and content.
7. Certificates were awarded to 35 out of the 36 students for successfully completing the course.

Overall, the Introduction to PLC Programming course provided B.Tech 3rd Semester students with a comprehensive understanding of PLCs and their programming. The interactive teaching pedagogy, including theoretical concepts and practical hands-on sessions, allowed students to

grasp the concepts effectively. The positive feedback and high completion rate reflect the success of the course in achieving its objectives.



Project on Bottle Filling PLC Ladder Logic