STUDENT DEVELOPMENT PROGRAME ON FOUNDATION SKILL IN INTEGRATED PRODUCT DEVELOPMENT" (FSIPD)

COURSE CONTENT

Day 1:

SDP aimed at setting the new standards for knowledge sharing between the industry and the educational institutions and has contributed significantly towards strengthening the knowledge economy itself.

<u>Morning Session (From 8:45 AM to 10:45 PM)</u>.

The topics Covered are:

1. They have covered topics like
   - ✓ Political /policy Trends
   - ✓ Economical Trends
   - ✓ Competition
   - ✓ Social Trends
   - ✓ Legislative/Regulatory Trends
   - ✓ IP (Intellectual Property) Trends
2. Types of Product Development
   - Enhancement-Product Improvement
   - Derivatives of Existing product platforms
   - New product platform
   - Breakthrough products

3. Ended the forenoon session with Cost of Defects and also Terms and Definitions of Requirement Engineering.

Session (From 11.00 AM to 12:45 PM)

The Quiz program was organized by the team 1 members and conducted in 2 levels. The level one is identifying the products from varies OEM. 2nd level is Rapid fire round for filtered team members from the previous round score. The students are actively participated the quiz and learn the different products from all standards.

Afternoon Session (from 1:30 PM to 4:00PM)

TEAM1: The PESTLE analysis trained to the students by assigning various products like

- ✓ Security System
- ✓ TEAM 2:Cheese Cake maker
- ✓ TEAM 3:Consumer Electronics items
- ✓ TEAM 4: Accident survival
- ✓ TEAM 5:Light it up
- ✓ TEAM 6:DADSS(Drink alcohol system for safety)
- ✓ TEAM 7:Internet of Things

Day 2:

Morning Session (From 8:45 AM to 10:45 PM)

The topics covered are

- ✓ Importance about Requirement:
- ✓ Requirement Analysis
- ✓ Requirement Engineering
- ✓ Requirement Management

Session (From 11.00 AM to 12:45 PM)

- ✓ The Requirement analysis trained to the students by assigning various products like
- ✓ Cough syrup
- ✓ Laptop
- ✓ i PHONE 8 i _ STRIPE
- ✓ Royal Enfield Phoenix
- ✓ Robot fight
- ✓ Indoor Air Quality Monitoring
- ✓ Solar security

Afternoon Session (from 1:30 PM to 4:00PM)

Requirement is the process of determining user expectations for a new or modified product. Based on the concept, students are identified their product with Specifications in terms of hardware, tools, software perspectives. The different case Study products are given to the student's

- ✓ Slim bag
- ✓ i parker
- ✓ Drunk & Driver alert systems
- ✓ Modular Electronic Kitchen Shelves
- ✓ 24/7 MVJCE Helping display
- ✓ Instant update's digital display panel

The faculty members of team 2 done the review process based on their Requirement

Day 3:

<u>Morning Session (From 8:45 AM to 10:45 PM)</u>

The topics covered are

- ✓ Introductions about Design/High level/Low level. Top to bottom approach Vice versa
- ✓ Industrial Design
- ✓ Embedded concept Design.

Session (From 11.00 AM to 12:45 PM)

Industrial design was done as per products based like ATM ,based on Mechanical design perspective as well as software GUI perspective.

Information processing plays a key factor in an ATM withdrawal design. Banks are continually striving to provide convenience to their clients of whom the majority is made up of ATM users. This provides a purpose to analyze the existing ATM withdrawal system to determine whether it is the optimal design. Some design parameters that can affect overall performance that became our main focus of the lab are the form of layout, type of layout, type of entry, and the size of layout . The objective was to redesign the ATM for optimum speed of cash withdrawal. By looking at various areas, the team is to evaluate what type of number pad layout, what type of entry, hardware, tools, and what size layout, would best maximize efficiency software and optimal cash withdrawal.

Afternoon Session (from 1:30 PM to 4:00PM)

Based on the industrial design, the students are trained to draw their products and also sort out the challenges and issues.

Case study:

- ✓ Sony products
- ✓ Apple Products

- ✓ Samsung products
- ✓ Whirlpool Products
- ✓ Eureka Forbes
- ✓ Micro oven

Day 4:

Morning Session (From 8:45 AM to 10:45 PM)

The topics Covered in Morning Session are

- ✓ Evolution Maintenance
- ✓ Objective Maintenance
- ✓ Categories Maintenance
- ✓ Maintenance process- discrete level
- ✓ Maintenance process- Software level
- ✓ They have listed some of the responses from studnts for that Case Study like
- ✓ Inverter
- ✓ Mobile
- ✓ Consumer electronics products
- ✓ Online payment (Paytm) , SMS

Afternoon Session (from 1:30 PM to 4:00PM)

- ✓ The students are trained by how to make mock prototype by using waste materials
- ✓ Metal Containers. Aluminum, steel and tin cans (do not crush) Aluminum foil (clean and balled) ...
- ✓ Paper milk and juice cartons.
- ✓ Straws.
- ✓ Caps.
- ✓ Mixed Paper.

- ✓ Newspaper.
- ✓ Cardboard.

Day 5:

Morning Session (From 8:45 AM to 10:45 PM)

The topics covered are
Tool Identifications to implement the products like

- ETABS – Extended Three Dimensional Analysis Of Building Systems
- SYSTEMS – Used For Modeling and Analysis Of Building
- STAAD PRO – Modeling And Analysis of all Structures
- CYPE - Modeling and analysis, design and detailing of structures
- AUTO CAD – planning of structures
- CATIA,SOLID WORKS - Modeling
- GAMBIT,ICEM CFD -Grid Generations
- NASTRAN,PATRAN IS DYNA -Analysis
- TECHPLOT 360 -post processing
- MCU 8051: MCU 8051 is an 8051 simulator which is very simple to use and have an interactive IDE (Integrated Development Environment). ...

- EDSIM 51: This is a virtual 8051 interfaced with virtual peripherals like 7 segment display, motor, keypad, UART etc.
- **E NI Multisim 10.0**: The software looks more professional, PCB design was added, as well as different microcontrollers and memories.
- **Crocodile Technology**: Quite nice simulator allows for 3D visualization and easy PCB creation, automatic traces, have lots of components, but no microcontrollers or memories. Ideal to make small simple circuits with transistors, logic ICs or 555.
- **Proteus:** It's one of the best tools. Allows for a high amount of components, has multiple test instruments (serial terminal, SPI, I2C debuggers, oscilloscopes, logic analyzer). Has a 3D visualization option, can simulate microcontrollers in real time, and supports most of the 74xxx series of ICs.
- HTML/CSS:

  People often begin by learning HTML and CSS. These two languages are essential for creating static web pages. HTML (Hypertext Markup Language) *structures* all the text, links, and other content you see on a website. CSS is the language that makes a web page look the way it does—color, layout, and other the visuals we call *style*.

- JavaScript

JavaScript is the first full programming language for many people. It is the logical next step after learning HTML and CSS. JavaScript provides the *behavior* portion of a website. For example, when you see form fields indicate an error, that's probably JavaScript at work.

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