

FOUNDATION SKILLS IN INTEGRATED PRODUCT DEVELOPMENT(FSIPD)

Introduction to FSIPD

- This program has been developed by NASSCOM with inputs from TCS, INFOSYS, HCL, WIPRO, EMC, Alcatel Lucent, KPIT and IGate, with a vision to develop the skills of students graduating from colleges, to match the industry requirement.
- The Foundation Skills in Integrated Product Development (FSIPD) program will increase the industry readiness of students who want to start a career in engineering companies in the area of Integrated Product Development.

Course Objectives and Course Outcomes

OBJECTIVES

- To facilitate the acquisition of the foundation skills in the process, tools and techniques in the Integrated Product Development area of the Engineering Services industry.
- To provide the requisite understanding towards application of academic topics from engineering disciplines into real world engineering projects.

OUTCOMES

After completing this program, the student will be able to

- Obtain technical skills needed to effectively play the entry level design engineer role in an engineering organization.
- Understand the product development methodologies and management.
- Develop product management plan for a new product based on the type and development methodology.

Inauguration of FSIPD at MVJCE

- FSIPD was introduced and inaugurated in MVJCE by a Member of our erstwhile Governing Council, Mr Vasantha Kumar Narayan, in the month of June 2016.
- The First FSIPD workshop was held on 4th, 6th and 7th June 2016 only for faculty from various disciplines.
- The resource persons were:
 - ✓ Mr.Vasantha Kumar Narayan, General Manager, Robert Bosch, Bangalore.
 - ✓ Mr.Badrinath, General Manager, Robert Bosch, Bangalore.
 - ✓ Mr.Prasad Senior Manager, Robert Bosch, Bangalore.
- Consequently, 6 project prototypes were developed by faculty which were evaluated on 2nd July 2016.

Workshop-1: Prototypes Developed

1. Indoor Quality Monitor
2. 2ECO BIKE
3. STELLER: (The Radiations Force (Solar Charger for Car Battery)
4. E Trolley
5. H cone
6. Bicycle operated Blender for Rural India Team.



Indoor Air Quality Monitoring



Smart Card for Smart Shopping

Workshop-2: Prototypes Developed

All subsequent programmes were held only for students.

The Second FSIPD workshop was organized from 14th to 16th Feb 2017. The project prototypes were evaluated on 4th March 2017. 7 prototypes were developed by students.

1. Parking LOT
2. 24/7 Urban Solutions
3. E_Blind
4. Drunk and Drive Alert systems
5. Electronic Smart Kitchen Shelves
6. E_STRIP
7. Event Management (MVJCE INSTANT UPDATES)



Parking Lot Prototype



Drunk and Drive Alert systems prototype

Workshop -3 : Prototypes Developed

The Third FSIPD workshop for students was conducted From 21st to 23rd February 2018, and the project prototypes were evaluated on 3rd March 2018.

6 prototypes were developed by students.

1. Outdoor Air Quality Monitoring systems
2. AJUS
3. hydroponics systems
4. MEC_ARM
5. Mr. BIN
6. Automatic Grid systems



Outdoor Air Quality Monitoring systems



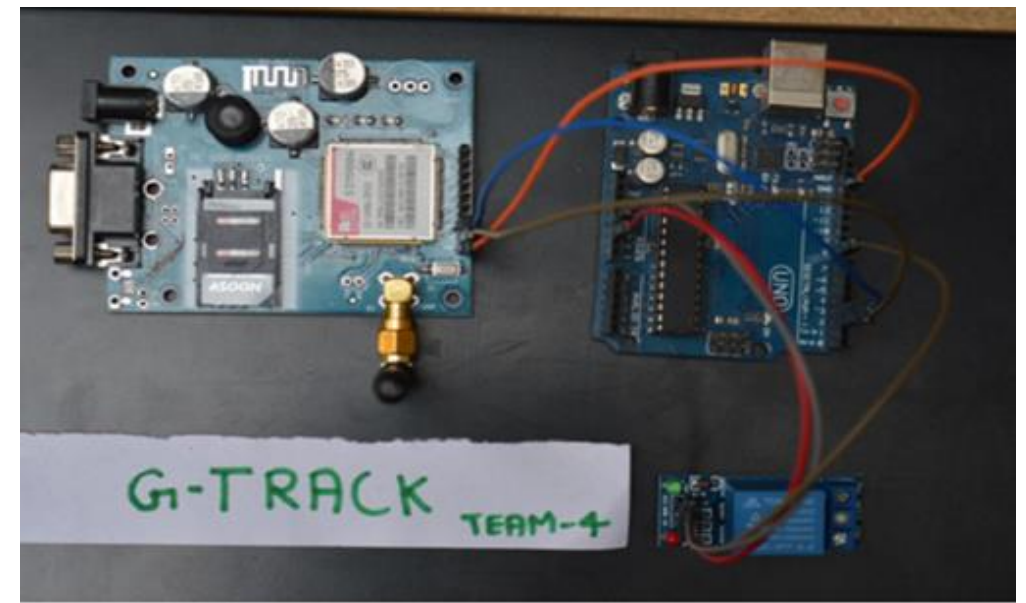
Automated Grid systems

Workshop -4: Prototypes Developed

The Fourth FSIPD workshop was organized from 27th to 29th August 2018 and project prototypes were evaluated on 8th September 2018.

13 prototypes were developed.

1. Heart attack detection system
2. IOT BIN
3. Smart helmet
4. Smart vehicle safety
5. B-BOOK
6. solar amphibious vehicle
7. Smart canteen
8. Smart farming
9. Third Eye
10. Smog detection & detection system
11. Sense organic
12. Smart tech security & automation
13. Bag seat



Smart car safety G-Track



Smart Helmet

Workshop -5: Prototypes Developed

The Fifth FSIPD workshop was organized from 14th to 16th March 2019 and project prototypes were evaluated on 30th March 2019. 8 prototypes were developed.

1. Natural Refrigerator
2. BAMBOO Reinforcement Concrete (Economical building).
3. Smart swatch Bharath (underground Solid waste management)
4. Energia solar
5. TEG SING
6. SHOCH WEAR
7. LIT UP (Smart street- lamp for hill area)
8. Underground fault detection



Mr. Vasantha Kumar Narayan Validating Shock wear Prototype



Mr. Vasantha Kumar Narayan Validating Automated Concrete prototype

Workshop -6: Ideas Generated

- A three-day Workshop on 'FSIPD' was organized for 3rd and 5th semester students from 22nd to 24th November 2022.
 - Mr. Sridhar Venkannachar, Independent Technology Advisor, Former Technology Advisor, AutoTec Systems Private Ltd was the Resource Person for the Workshop. Students presented 10 ideas in the last session.
1. Equity for farmers
 2. Electricity generation in rural, undeveloped areas
 3. Eco bricks-solution to plastic pollution
 4. Loss of livestock on railway crossing
 5. solution for amaxophobia
 6. Dependency on centralized system in financial sector
 7. Poor health care sectors
 8. Recreating and management of plastic and e-waste
 9. Traffic clearance during medical emergencies
 10. Breach of privacy while using screens



Students participants



Students showing their problem statement

Integration of FSIPD into the curriculum

- After becoming Autonomous, deliberations were held during BoG Meetings in which BoG advised for integration of FSIPD into curriculum.
- For the 2021 batch students, the FSIPD programme was incorporated as an Ability Enhancement Course in I year, with 1 credit and internships (2 credits) were offered to students to provide hands on experience and practical skills.



Mobile charging on coin insertion



Hydrator

Integration of FSIPD into the curriculum – Contd.

From the 2022 batch, curriculum with 3 levels and 6 credits was designed, incorporating valuable suggestions and insights provided by Mr Vasantha Kumar Narayan, member of Board of Governors, MVJCE.

LEVELS:

LEVEL 1: Fundamentals of Product Development, and Requirements Engineering

Outcome: Interpret and summarize relevant problem statements and explain key findings from a comprehensive literature survey.

LEVEL 2: Systems Engineering, and Conceptualization

Outcome: Apply the concepts of industrial design and system design to the identified problem statement.

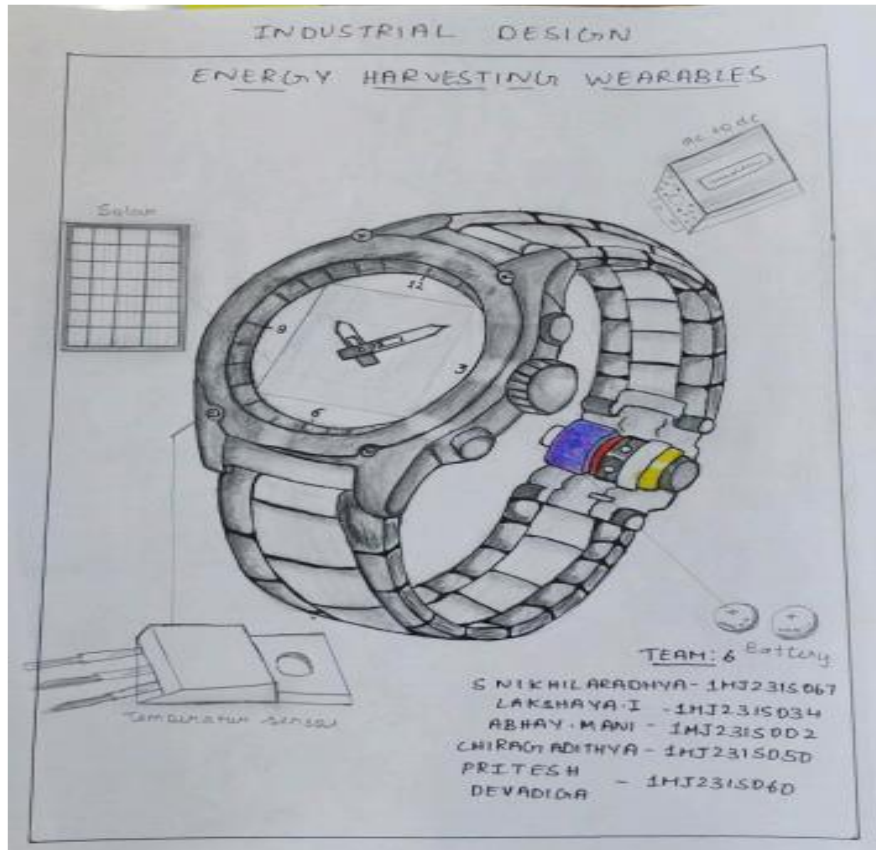
LEVEL 3: Testing and Prototyping

Outcome: Design, develop, and validate a fully functional solution to address the identified problem statement.

Projects completed by 6th Sem Students on 20th May 2025

1. **Improvised STP**
2. **Mvj Eat Easy**
3. **Soil Moisture And Ph Sensor**
4. **Car Cove**
5. **Ads – Anti Drowsiness System**
6. **Master Timetable Generator**
7. **Energy Smart Usage Panel**
8. **Budget Tracker**
9. **Food Donation (Give a Meal)**
10. **Medi Wrap**
11. **Farm Mart**
12. **Smart Key Chain**
13. **Water Quality Monitoring System**
14. **Trip Trove - The Travelling Website**
15. **Smart Construction Helmet**
16. **Smart Shopping Cart**
17. **Smart Health Monitoring System**
18. **Train Collision Avoidance System**
19. **Fire Fighting Robot**
20. **Automated Plant Watering System**
21. **Empowerhub**

Steep analysis and Industrial Design - by students



Nikhil Aradhya ISE, Chirag Aradhya ISE, Pritesh Devadiga ISE, & Ashwini Indi CSE (Data Science), prepared an Industrial Design for Electric Watches With Power Bank Functionality



Vyshu N, CSE, Prajwal, CSE (Data Science), Chandana, CSE (Data Science), & Sanskruthi, Computer Science and Design prepared an Industrial Design for Anti-Theft Backpack

Ongoing Projects -by 4th Sem Students – Commenced in Feb 2025

1. Power Generation Using Footsteps
2. Customized Alarm
3. AI Based Magic Mirror
4. Smart Calorie Measuring Lunchbox
5. Smart Board For Classroom Monitoring
6. Electric Watches With Power Bank Functionality
7. Hercare -Smart Sanitary Napkin Vending Machine
8. Smart Blind Shoes
9. Gesture Controlled Bluetooth Speaker
10. Sewage Filter
11. Dress Code Detector
12. Anti-Theft Backpack
13. Student Sync
14. Ocean Fertilization Drones
15. Digital Marketing
16. Smart Parking System
17. Isolation Spring System

Project Exhibition on Open Day -30th May 2025



Project Exhibition was organized on Open Day on 30th May 2025, and showcased 21 prototypes developed by students of FSIPD Programme

Project Exhibition on Open Day –30th May 2025 - Contd.



The FSIPD students of 6th sem, Afifa (ECE Dept), Heena (AE Dept), and Syed (IIOT Dept), showcased their project model, "IMPROVED STP,"



The FSIPD students of 6th sem, Afnan, Shreya, Jeeva (CSE DEPT), showcased their project model, "SMART SHOPPING CART".

Potential projects identified for the purpose of Incubation

COMPLETED PROJECTS

1. Mvj Eat Easy[Canteen application]
2. Master Timetable Generator
3. Medi Wrap
4. Smart Key Chain
5. Smart Construction Helmet
6. Smart Shopping Cart
7. Automated Plant Watering System
8. Empowerhub

ONGOING PROJECTS

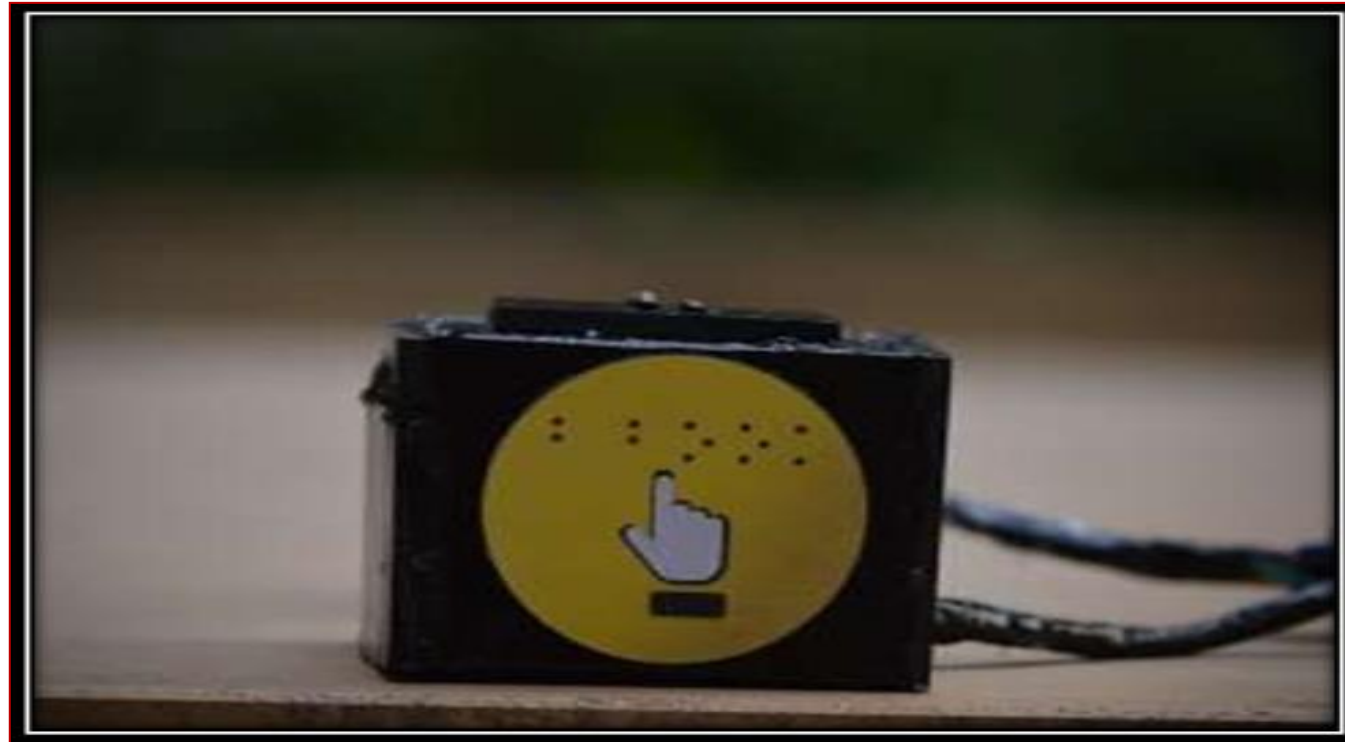
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7. Hercare -Smart Sanitary Napkin Vending Machine
8. Smart Blind Shoes
9. Gesture Controlled Bluetooth Speaker
- 10.Dress Code Detector
- 11.Anti-Theft Backpack

Student achievements through FSIPD



- ***Electronic Smart Kitchen Shelves product won 1st prize in Industry Institute Partnership cell organized by Mahatma Gandhi Institute of Technology on 12th April 2017***
- ***Event Management (MVJCE INSTANT UPDATES) product won 2nd prize in Industry Institute Partnership cell organized by Mahatma Gandhi Institute of Technology on 12th April 2017***

Student achievements through FSIPD - Contd.



b-Book prototype developed by Rohit and Ruchitha, students of CSE Dept. won 1st prize in Smart India Hackathon organized by AICTE on 3rd and 4th March 2019 and secured Second Runner-up position at the National Student Startup Challenge organized by CII on 11th September 2019.

Student achievements through FSIPD – Contd.



AFNAN and SHREYA, students from 6th Semester, CSE Department, showcased their excellence at Meraki 2025, conducted by RR Institute of Technology organized on 7th May 2025, by securing First Prize for their project Smart Shopping Cart at the State-Level Student Project Exhibition.



CHANDU P.N. and JUVVALA HARSHITHA, students of 6th Semester, CSE Department, secured Third Place for their project Mediwrap at Hack Hive 2025 organized on 8th May 2025, an event organized by C. Byregowda Institute of Technology.

Integrated Product Development Club (IPD) Inauguration



- Over the years, due to overwhelming response to FSIPD by our students, IPD Club was inaugurated and established to facilitate more products.
- Student members -15.
- Student Coordinators – Afnan, 3rd year CSE Dept. & Aastha 3rd year AIML Dept.



On March 21, 2025, Our Principal officially inaugurated the IPD club, fostering a platform for innovation and growth.

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Thank You