STUDENT DEVELOPMENT MODEL

Curricular Foundation

- Foundation Courses
- University Syllabus
- Guided Swayam & NPTEL

Continuous Skill Development

- Citizenship & Community Connect
- Communication & Confidence
- Events & Competitions

Centers for Applied Research

- Process & Gov Composites
- Data Science & AI, Robotics & IOT, Energy Efficiency
- Market Research, Product Design

Enriching External Programs

- Program with Industry Bodies (NASSCOM)
- Program with Premier Institutes (IIMs, NITs)
- Industry guided certifications (Google, Microsoft)

Experienced Faculty
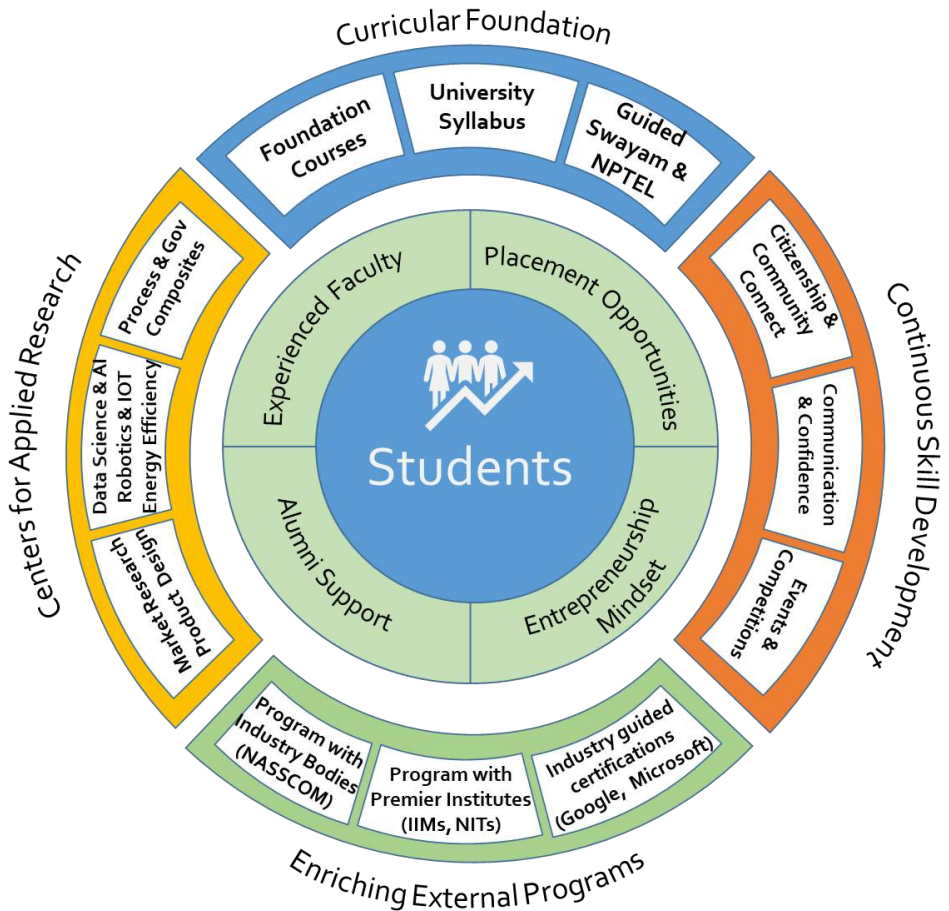
Placement Opportunities

Alumni Support

Entrepreneurship Mindset

Students

Developing students for enabling them as successful professionals is core to the Student Development Model at ABIT. Several programs starting from Foundation Engineering Program, Communication and Confidence and specialization wise Technical programs are carefully crafted into the Engineering & Professional Programs to ensure holistic development of each and every student for high competence both technically and behaviourally.

Best Practice

Centre of Applied Research (Design and Prototype Development)

1. Title of the Practice
Experiential learning by design and prototype making through collaborative multidisciplinary approach.

2. Objectives of the Practice
- Instill the culture of critical, creative and collaborative thinking among the students and faculties to develop sustainable design.
- Impart necessary design skill to transform idea into tangible/intangible outcome.
- Practice to put the locally available materials and components into different prototypes.
- Convert promising prototypes into commercial products.

3. The Context
The scope to implement the concepts, principles and theories learned in class room teaching is limited in university curriculum. The centre of applied research in the domain of design and prototype development is providing a platform for multidisciplinary approach towards implementation of feasible ideas into working prototypes. The focus areas of the centre are simple technologies and design thinking practice to create solutions of immediate relevance. The small collaborative groups of students from different engineering and management branches bring curiosity, perspectives and approach towards holistic solutions.

4. The Practice
- The students of all branches are sensitized on the concept of design and prototype development through interactive presentation.
- Then interested students apply for membership through online form.
- After validation of membership by a team of mentors the students are assigned projects.
- Two hours per week are made available on Saturday to carry out the assigned work.
- One mentor is assigned to each group of students.
- The team members are trained on different design skills and prototyping methods in a continuous basis.
- The schedule of activities is prepared for academic year with focus on quarterly time horizon.
- The progress of activities is continuously monitored by the centre coordinator.

- The activities of the centre is also reviewed fortnightly by the leadership team of the institute.
- The team members need to write report after the completion of projects and these are published as blog or write-up in institute's website.
- The students are required to participate in competitions and publish papers in conference or journals.

Mentors associated from Academia and Industry:
- Er. Debadutta Dash, MD, Shiballoy Multiflex Pvt. Ltd., Bhubaneswar- Industry Mentor
- Er. Shiba Mishra, Odisha Representative, IQAC Global Pvt. Ltd., Bengaluru- Industry Mentor
- Dr. Ratiranjan Dasj, Professor, OUTR, Bhubaneswar, Academic Consultant
- Er. Chinmay Das, Department of Mechanical Engineering, ABIT-Centre Coordinator
- Er. Smita Samantaray, Department of Mechanical Engineering, ABIT-Faculty Mentor
- Er.J.Behera, Department of Mechanical Engineering, ABIT-Faculty Mentor
- Er.S.Behura, Department of Mechanical Engineering, ABIT-Faculty Mentor
- Dr. Narasingh Deep, Department of Mechanical Engineering, ABIT-Faculty Mentor
- Er. Debakanta Behera, Department of ETC Engineering, ABIT-Faculty Mentor
- Er. Prasenjit Nanda, Department of ETC Engineering, ABIT-Faculty Mentor
- Er. Durgamadhav Swain, Department of Electrical Engineering, ABIT-Faculty Mentor
- Er. R.S.Bal, Department of Computer Applications, ABIT-Faculty Mentor

5. Evidence of Success
- Ten students got selected in different campus placements due to training on AutoCAD given by the centre.
- Many prototypes are made from waste materials.

6. Problems Encountered and Resources Required

The programme requires academic & practice skills of faculty members and mobilisation of students as per their interest. The running of programme demands only modest financial resource. The only constraint faced is in- person availability of industry mentors in some cases. The resources required are-

1. Laboratory with design facilities
2. Fabrication centre and machine tools
3. Skill trainers and machine operators
4. Financial budget for materials and tools

Title of the Practice
- Centre of Applied Research on Energy Efficiency & Sustainability.

Objectives of the Practice
- Impart creative, innovative and collaborative thinking practice among the students and faculties to design and develop energy efficient and sustainable sources and their optimal use to solve different national and global issues.
- Application of latest technologies for cost beneficial energy efficient sources.
- Application of new technologies, tools and strategies to make distributed generation more affordable.

The Context
- The Energy Efficiency & Sustainable Energy Management program combines management skills with an understanding of responsible energy sources use and the development of sustainable sources of energy.
- The program provides students with an understanding of the production and conversion of different forms of energy and their use in power optimization and sustainable energy management.

Collaborative Learning:
- Collaborative Learning is the academic approach of using a group of intellectuals to enhance learning through working together. Groups of two or more learners from one or different department work together to share knowledge that solve problems and learn new concepts.
- ABIT started the Collaborative Learning Initiative through its Applied Research Work. Centres of Applied Research (CAR) provide the platform that gives the chance to students and faculty mentors to identify solution requirements where engineering, computational and management techniques can be applied for resolving longstanding issues and solution to different engineering and management problems in an efficient and cost effective manner.

Student Enrolment

190120111	Bisal Sethy	EEE	2019	190eee111@abit.edu.in	Energy efficiency & sustainability
180120 6004	Abinash Nayak	ELE	2018	180ele004@abit.edu.in	Energy efficiency & sustainability
180120 6005	Abinash Samal	ELE	2018	180ele005@abit.edu.in	Energy efficiency & sustainability
180120 6011	Akash Behera	ELE	2018	180ele011@abit.edu.in	Energy efficiency & sustainability
180120 6012	Akash Sahu	ENTC	2018	180etc012@abit.edu.in	Energy efficiency & sustainability
180120 6016	Amit Behera	ELE	2018	180ele016@abit.edu.in	Energy efficiency & sustainability
180120 6023	Animesh Ojha	ELE	2018	180ele023@abit.edu.in	Energy efficiency & sustainability
180120 6035	Asish Panda	ELE	2018	180ele035@abit.edu.in	Energy efficiency & sustainability
180120 6037	Badal Behera	ELE	2018	180ele037@abit.edu.in	Energy efficiency & sustainability
180120 6059	Debadatta Barik	EEE	2018	180eee059@abit.edu.in	Energy efficiency & sustainability

1801206 063	Debasis Rath	ELE	2018	180ele063@abit.edu.in	Energy efficiency & sustainability
1801206 066	Dibyajiban Pradhan	ELE	2018	180ele066@abit.edu.in	Energy efficiency & sustainability
1801206 080	Hrushikesh Majhi	ELE	2018	180ele080@abit.edu.in	Energy efficiency & sustainability
1801206 100	Mahesh Nayak	ELE	2018	180ele100@abit.edu.in	Energy efficiency & sustainability
1801206 115	Pradeep Muduli	EEE	2018	180eee115@abit.edu.in	Energy efficiency & sustainability
1801206 123	Pratyusha Mohanty	ELE	2018	180ele123@abit.edu.in	Energy efficiency & sustainability
1801206 165	Saroj Rout	ELE	2018	180ele165@abit.edu.in	Energy efficiency & sustainability
1901206 102	Adhikari Dash	EEE	2019	190eee102@abit.edu.in	Energy efficiency & sustainability
1901206 105	Ankita Biswal	EEE	2019	190eee105@abit.edu.in	Energy efficiency & sustainability
1901206 106	Ankita Dhal	EEE	2019	190eee106@abit.edu.in	Energy efficiency & sustainability
1901206 108	Ashisha Barik	EEE	2019	190eee108@abit.edu.in	Energy efficiency & sustainability
1901206 110	Ashutosh Muduli	EEE	2019	190eee110@abit.edu.in	Energy efficiency & sustainability
1901206 113	Rudra Muduli	EEE	2019	190eee124@abit.edu.in	Energy efficiency & sustainability
1901206 114	Chinmayee Kanhar	EEE	2019	190eee114@abit.edu.in	Energy efficiency & sustainability
1901206 114	Chinmayee Kanhar	EEE	2019	190eee114@abit.edu.in	Energy efficiency & sustainability
1901206 118	Deepak Rout	EEE	2019	190eee117@abit.edu.in	Energy efficiency & sustainability
1901206 119	Jeetendra Panda	EEE	2019	190eee119@abit.edu.in	Energy efficiency & sustainability
1901206 120	Laxmipriya Das	EEE	2019	190eee120@abit.edu.in	Energy efficiency & sustainability
1901206 121	Lokanath Behera	EEE	2019	190eee121@abit.edu.in	Energy efficiency & sustainability
1901206 122	Niharika Behera	EEE	2019	190eee122@abit.edu.in	Energy efficiency & sustainability
1901206 123	Priyanka Swain	EEE	2019	190eee123@abit.edu.in	Energy efficiency & sustainability
1901206 124	Rudra Muduli	EEE	2019	190eee124@abit.edu.in	Energy efficiency & sustainability
1901206 132	Sitanshu Mohanty	EEE	2019	190eee132@abit.edu.in	Energy efficiency & sustainability
1901206 133	Smrutishree Sahu	EEE	2019	190eee133@abit.edu.in	Energy efficiency & sustainability
1901206 134	Subhalaxmi Barik	EEE	2019	190eee134@abit.edu.in	Energy efficiency & sustainability
1901206 135	Supriya Kundu	EEE	2019	190eee135@abit.edu.in	Energy efficiency & sustainability
1901206 139	Ahkam Khan	ELE	2019	190ele139@abit.edu.in	Energy efficiency & sustainability
1901206 140	Amarendra Ojha	ELE	2019	190ele140@abit.edu.in	Energy efficiency & sustainability
1901206 142	Arghyarupa Panda	ELE	2019	190ele142@abit.edu.in	Energy efficiency & sustainability

|					
1901206 146	Bedant Das	ELE	201 9	190ele146@abit.e du.in	Energy efficiency & sustainability
1901206 148	Bhojagendra Mohanta	ELE	201 9	190ele148@abit.e du.in	Energy efficiency & sustainability
1901206 150	Chandan Lenka	ELE	201 9	190ele150@abit.e du.in	Energy efficiency & sustainability
1901206 152	Chandrasekhar Sahoo	ELE	201 9	190ele152@abit.e du.in	Energy efficiency & sustainability
1901206 153	Debasis Dash	ELE	201 9	190ele153@abit.e du.in	Energy efficiency & sustainability
1901206 155	Jeebansamrat Samal	ELE	201 9	190ele155@abit.e du.in	Energy efficiency & sustainability
1901206 159	Naresh Swain	ELE	201 9	190ele159@abit.e du.in	Energy efficiency & sustainability
1901206 162	Prajnya Bhoi	ELE	201 9	190ele162@abit.e du.in	Energy efficiency & sustainability
1901206 163	Priyanshu Mohanty	ELE	201 9	190ele163@abit.e du.in	Energy efficiency & sustainability
1901206 164	Rajesh Sethy	ELE	201 9	190ele164@abit.e du.in	Energy efficiency & sustainability
1901206 168	Sameer Behera	ELE	201 9	190ele168@abit.e du.in	Energy efficiency & sustainability
1901206 169	Saswati Priyadarshini	ELE	201 9	190ele169@abit.e du.in	Energy efficiency & sustainability
1901206 173	Simran Sethy	ELE	201 9	190ele173@abit.e du.in	Energy efficiency & sustainability
1901206 177	Tamasa Bisoi	ELE	201 9	190ele177@abit.e du.in	Energy efficiency & sustainability
1901206 193	Matrusurabhi Pani	ENT C	201 9	190etc193@abit.e du.in	Energy efficiency & sustainability
1921206 046	Abhishek Kumar	EEE	201 8	192eee046@abit.e du.in	Energy efficiency & sustainability
1921206 053	Abinash Rath	ELE	201 8	192ele053@abit.e du.in	Energy efficiency & sustainability
1921206 054	Anuradha Rana	ELE	201 8	192ele054@abit.e du.in	Energy efficiency & sustainability
1921206 057	Gitanjali Panda	ELE	201 8	192ele057@abit.e du.in	Energy efficiency & sustainability
1921206 058	Gyanabrata Swain	ELE	201 8	192ele058@abit.e du.in	Energy efficiency & sustainability
1921206 063	Ruby Sahoo	ELE	201 8	192ele063@abit.e du.in	Energy efficiency & sustainability
1921206 064	Sangamitra Panda	ELE	201 8	192ele064@abit.e du.in	Energy efficiency & sustainability
1921206 067	Sayadabas Ali	ELE	201 8	192ele067@abit.e du.in	Energy efficiency & sustainability
1921206 081	Varsharani Dash	ENT C	201 8	192etc081@abit.e du.in	Energy efficiency & sustainability
2021206 001	Akash Bhuyan	CIVI L	202 0	2020lece01@abit. edu.in	Energy efficiency & sustainability
2021206 017	Soumya Ranjan Sahoo	CIVI L	202 0	2020lece19@abit. edu.in	Energy efficiency & sustainability
2021206 028	Subhashree Suchismita Biswal	ELE	202 0	2020leele21@abit. edu.in	Energy efficiency & sustainability
2021206 029	Adarsa Samal	ELE	202 0	2020leele24@abit. edu.in	Energy efficiency & sustainability
2021206 030	Amrit Kumar Ray	ELE	202 0	2020leele01@abit. edu.in	Energy efficiency & sustainability

| 2021206036	Gyanaranjan Moharana	ELE	2020	2020leele08@abit.edu.in	Energy efficiency & sustainability

Achievements So Far

- Students have presented paper on "Performance Enhancement of a Photovoltaic Cell using Seebeck Generator" at International Conference on Advanced Communication Control & Computing Technology (ICACCCT-2022) organized by SIMATS School of Engineering, Chennai.
- Students have presented paper on "Optimal Power Flow Analysis using Power World Simulator in "Gayatri Vidhyut Conference GVCON-2K22", conducted by Electrical & Electronics Engineering Department, Gayatri Vidya Parishad College of Engineering (Autonomous), Visakhapatnam during 21st to 22nd October, 2022.
- Students participated in online national workshop NIOTMA-2022 ("Nature Inspired Optimization Techniques and Microgrid Applications")NIOTMA-2022, Silicon Institute , Sambalpur
- Students have participated in Smart India Hackathon-2022. Idea submission was done under Idea Title- Biometrics operated Cloud Based RFID Attendance Management System (Smart Attendance System for Govt. Schools.)
- Students have done project titled "Solar Powered Drinking Water System".
- Students have done projects on Battery Monitoring System of Electric Vehicles using IoT
- Students have done projects on Carbon Sequestration and estimation of carbon sink potential of the considered area.

Evidence of Success
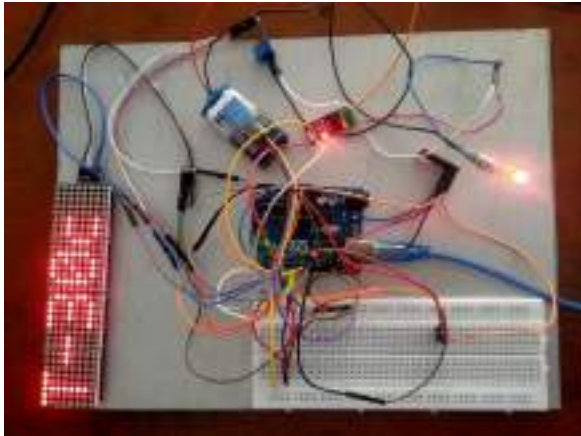
BATTERY MONITORING SYSTEM
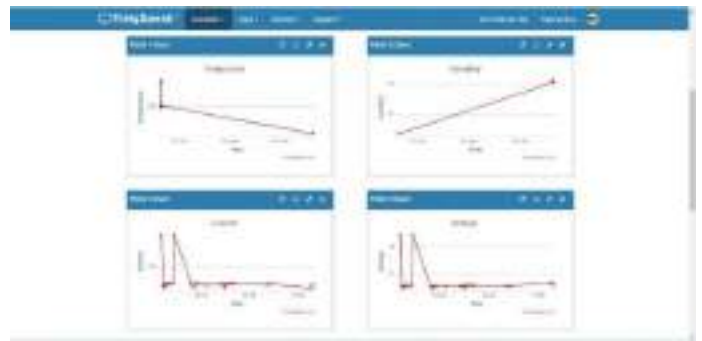
CHARECTERISTICS

Energy Conservation with Modern Technology

We live in an increasingly connected world, the same is true for our homes. New electronic devices and appliances can now be linked to the internet to provide real time data makes it easier to understand and optimize power consumption and control it from anywhere at any time. The objective of our project "Energy Conservation with Modern Technology" is to get energy from non-conventional energy source such as sunlight & we can control energy according to our own way. we get energy from natural resources such as wind, Tide, sunlight more over coal. In India most of the consumer depending upon coal to get energy. As we know coal is conventional energy source & day by day it's decreasing due to the increasing of number of consumers. So, the main question is arising how to control energy? We have an idea that we can control energy by using some modern technology. In our project we have taken solar panel, inverter, charge controller, Arduino (micro controller). So, using solar panel we get energy from sunlight & store this energy on a battery. Through the charge controller we can control the

variable energy getting from the solar panel for constant purpose to give battery life secure. After that using inverter, we can convert this energy from DC to AC.
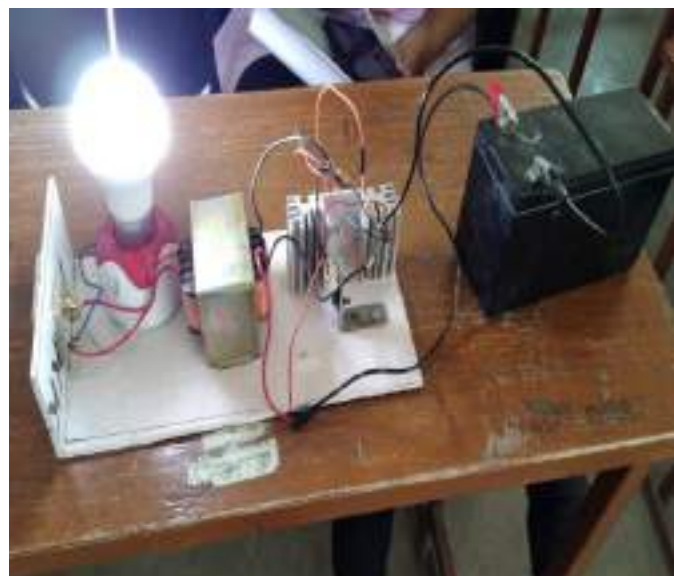
Motion sensor light

In this project, students have built a motion sensor light circuit, which will turn on when movement is detected near its vicinity. Its use is to illuminate an area when a person walks by so that he or she can see better.

In this circuit, we will create a motion sensor light circuit that will stay on for 30 seconds minutes when motion is detected. This is just for demonstration purposes.

Solar Powered Drinking Water System

In this project we are making a water purifier with cooling facilities which works on solar energy with technological viability and cost effectiveness for delivery safe cooled water to the people. The solar radiations are collected by solar panel this energy is stored in a battery. Again inverter is connected which feeds power to the water purification unit and cooler. The purification unit consist of high pressure motor, reverse osmosis system UV, UF the water tank. The high pressure creates the necessary pressure required to carry out reverse osmosis, the microcontroller keeps a watch to the level of water tank and prevents it from over flow. Through this process we are obtaining the purified water in the water tank. Then the purified water is stored in the water cooler and the water cooler cold the water as per required temperature. Further the use of solar cooling system as a potential option that driving cooler for cooling the drinking water supply.

Best Practice

Centre of Applied Research (Automation & Robotics)

1. Title of the Practice

New Age Technical Skills & Project Based Learning

2. Objectives of the Practice

The rise in the importance of tech skills is a product of digitization and our contemporary stage can be addressed with many new-age tech skills. The objective of this practice is to meet the growing demand for trained engineers in the field of embedded systems, industrial automation & robotics.

The intended outcomes are honing the research skills and project based learning in UG & PG students for ease of handling real-world problems and become industry ready. The basis of "Project Based Learning" is to learn new age skills, design and validate various industry led projects, and give students, an opportunity to get "hands-on" experience. Also it provides right forums to present their work at various workshop, conferences and seminars.

The concept of this practice is to skill up-gradation, building of new age tech skills and innovative thinking not only for existing employment but also employments that are to be created.

3. The Context

The concept is challenging one to introduce as there were issues such as

- Identifying issues and getting sustainable solutions.
- Designing standard operating procedures and guidelines.
- Explaining the concept and its implementation to resolve various issues to students.
- To find time for project execution during current academic schedule.
- Encouraging students to do better quality work within the timeframe.
- Providing platforms to help students to present or publish their work.
- Collaboration with local industries/ organizations to jointly define problem and develop solutions as well as explore startup opportunities.

4. The Practice

- Four hours per week (two slots) is allotted for this practice.
- Here the students (group of max 04) choose a teacher under whom they want to execute project based learning.

- After the approval from the centre coordinator, students have to complete the work in given time frame without skipping any academic schedule.
- The report/outcome is submitted to the coordinator of the research centre.
- The students are encouraged to present/ publish the work at different conferences and journals.
- A presentation competitions is organised by college to provide the students a platform to present their work.
- Best in-house project competition an annual event "*IDEATHON*" is organised for students of ABIT.
- Winners of the competition "*IDEATHON*", are nominated to participate Smart India Hackathon, the National level competition organised by AICTE & MHRD, GoI.

Uniqueness in the context of India higher education:

Looking at the focus of AICTE Skill Development Cell and Ministry of Skill Development & Entrepreneurship on 'Skilled India' initiatives, the effort is a unique one which prepares the students to work on their innovative ideas and develop them into a tangible product which is further validated by tech giants at various platforms where it is presented.

Industry Association:

This practice is associated with Kemsys Technologies Pvt Ltd., Bangalore for solution exploration, real world projects, field studies, project reviews, training and internship of students and faculty members in the Industrial automation and IoT domain.

Mentors associated from Academia and Industry:
- Raghavendra Chandregowda, Technical Director, Kemsys Technologies, Bengaluru, Karnataka
- G.S.R. Pattanaik, Advanced Development Project Manager, Valeo, Germany, (Alumnus of ABIT)
- Nishanta Ranjan Nanda, Solutions Architect, TCS, Bengaluru (Alumnus of ABIT)
- Dr. Hemanta Kumar Rath, Principal Scientist, TCS, Bhubaneswar
- Prof. Santosh Kumar Das (Dept. of Electronics & Communication Engineering, NIT Rourkela)

5. Evidence of Success
- Four innovative solutions proposed by students at SIH 2022, MHRD, GoI.
  1) Work clothing with sensors embedded to securely transmit data to managers about hazardous conditions and the workers' physical conditions. (Domain-Smart Automation)
  2) Sustainable and No contact Attendance System. (Domain-Smart Automation)
  3) Secured wireless controller for hand held remote operation of traffic signals in peak hours. (Domain-Smart Vehicles)
  4) Solutions to detect air quality inside the cabin and to improve it. (Domain-Transportation & Logistics)

- Biju Patnaik University of Technology Rourkela, Odisha has approved Centre of Excellence (CoE) in "*Automation and Internet of Things (IoT)*" for Ajay Binay Institute of Technology, Cuttack, Odisha. Interns from different Institutes of the state will be join and engage in project based learning and research activities at this CoE.
- Research articles published in National and International Journals.
- Workshop conducted in association with TEQIP III, BPUT, Odisha

Prototype developed by students:

- Home Automation System
- Mining Environment status Monitoring
- Smart and precision Farming
- Fatigue Driving Alert System
- Auto Speed Control of Vehicle at Limiting Zone
- Condition monitoring of a machine/equipment
- IoT based pollution monitoring system
- Patient health status monitoring & alert system

6. Problems Encountered and Resources Required

- Initially motivating the students to undertake the projects.
- Identifying capstone projects that will help the students to execute during practice.
- As per new academic pattern of "CA" (continuous assessment), the time management for PBL has become difficult.
- Faculty members from allied departments need to be involved for end to end execution and it becomes challenging to work with optimum efficiency in other departments. Problems were overcome by carefully planning the activities

The resources required are-

1. Well maintained laboratory facility with modern tools.
2. Skilled trainers.
3. Time management by the students.

Best Practice

Centre of Applied Research

1. **Title of the Practice**
   Centre for Marketing & Social Research

2. **Objectives of the Practice**
   The objectives of the programme are the following:
   - To understand the nature and scope of Market Research and Social Research.
   - To provide adequate knowledge on Conceptual Research and Applied Research.
   - Exposure to different statistical packages and analytical tools.
   - To identify and formulate Social / Marketing problems from a research perspective and provide inferences or solutions for the same.
   - Enable students to design and implement successful Marketing strategies and programmes.

3. **The Context**
   It is imperative that all MBA students irrespective of their specialization must have an understanding of market research as the majority of decisions taken by an organization generally depends on the research done in different fields. This understanding goes a long way in helping students to analyse problems and find necessary solutions. The theoretical concepts of market research were given in different papers in the syllabus but to provide a more direct overview of how things actually worked, we thought of designing a practice which would achieve that.

4. **The Practice**

   The Centre for Marketing and Social Research has been formed with an aim to equip students with the means to identify social and marketing problems, conduct the necessary research in terms of a detailed survey and analysis and provide a feasible solution for the practical problem. The current syllabus in MBA is not equipped to give hands-on exposure to students. The whole idea is to be able to provide the students a practical aspect whereby they can apply their theoretical knowledge to real life problems.

   The initial limitations that we faced were providing real life projects which could test the knowledge of the students.

5. **Evidence of Success**

   Our target was to give a chance to the students to conduct a real time survey analyse the data and submit a report of their findings. The students recently got a chance to conduct a survey for the regional channel of a leading media house through an agency. The objectives had been set and the questionnaire also designed by the organization. A group of students took data from 400 respondents as per the set crietria, analysed the data and submitted their findings in the form of a report to the agency. They were guided by the faculty of the department. This whole exercise gave a lot of confidence to the students and an indepth understanding of how the process actually runs. By analyzing and submitting a report , they were also exposed to all the other parts of Market Research. Their report was also accepted by the agency and the work appreciated.

The efforts put in by the students to get the results have proved that we have been successful in achieving our objective.

6. Problems Encountered and Resources Required

Our major constraint is the paucity of time in terms of both scheduling the classes and also of faculty taking out time to guide the students. Even though we have a time slot every week to guide the students, we require more time. We also need a dedicated lab for the same as the students are currently using their own laptops so that students who do not have laptops of their own are also able to utiilise our resources. We also need more resources who are trained in R-programming.

DEPARTMENT OF CIVIL ENGINEERING

NAME/THEME OF CAR:

COMPOSITE MATERIAL:
Replacement of natural coarse aggregate with fly ash aggregate in concrete mix.

OBJECTIVES:
- Application of composite materials in engineering and architecture fields as these are light in weight and have excellent mechanical properties.
- To create an ingenious, innovative and conjoint thought process among the students and faculties to design and develop strength efficient and sustainable composite building material and to use it for solving different national and global environmental issues with

ABSTRACT:
Now a days India is facing the challenge in control the carbon emission from the industries,thermal power plants and manufacturing units.So the aim of the research is to use the waste products from these units,so that it will control the carbon emission some extent that leads to air pollution.In the present scenario,the researcher mostly interested to do the research in fly ash in wide range because the utilization of large amount of fly ash reduces the environmental pollution and abate of natural resources.Natural aggregates used in concrete as an inert filler give strength and provide bulk volume to the concrete.Natural crushed aggregates that used in concrete are mainly produced from depleting the naturals resources and requires an alternative building materials.So this leds wide research on using the waste product as the preparation of aggregate.So fly ash use to prepare the aggregate which mix with cement in the ratio of 1:5 having the water cement ratio 0.3 to 0.5 in a standard atmospheric condition.In this paper it is mainly concentrated on fly ash aggregate that is light in weight and followed by 28 days of curing.The shape of these aggregates are round and approximately 10-20mm size. The properties of the light weight fly ash aggregates have been tested and the result suggested that these fly ash aggregates can be used as the replacement of natural coarse aggregate in concrete.The by-products like fly ash,bottom ash,silica fumes,blast furnace slag that used to prepare the artificial lightweight aggregates.Fly ash are the byproducts of nearby power plants like NTPC,Talcher & IMFA power plant,Choudwar easily available with minimum cost.In the recent time,due to the cost effectiveness,the construction material are widely used in concrete for mass application.

METHODOLOGY:

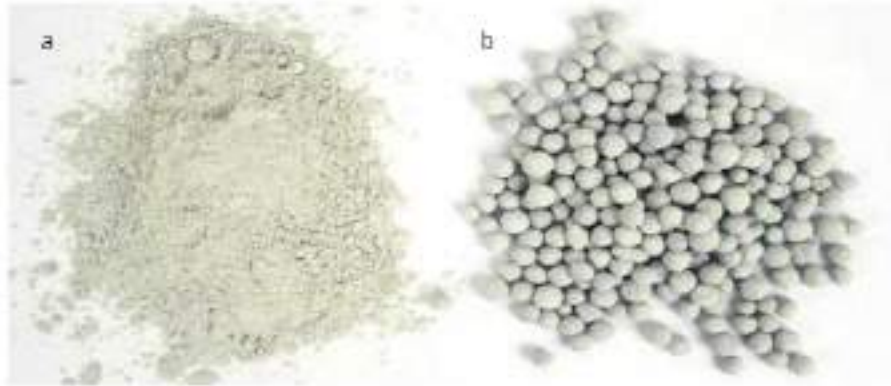## PREPARATION OF FLY ASH AGGREGATE:

Figure 1 showing (a) Fly ash (b) Fly ash aggregate

MATERIALS REQUIRED:

- Cement
- C-Fly ash
- F-Fly ash
- Water

For 1 batch of aggregate,materials required are

Cement-500gm

C-Fly ash/F-Fly ash-100gm

Water- 0.4 of cement by weight

PREPARATION OF SAMPLE

- Sieving of materials
- Dry mixing
- Wet mixing
- Making of Fly ash aggregate manually
- Drying
- Curing

Sieving:

Mixing:

Aggregate making manually:

Curing:

Fly Ash aggregate after 28 days of curing

STUDENT WORKS: