Innovation Centre Details (Centre for Applied Research)

Research and Development cell of ABIT works on study and application of cutting-edge technologies as well as development of new solutions in science and engineering. The areas of research being undertaken at present, relate to the following technology areas in 07 Centres for Applied Research.

RESEARCH FIELD	OBJECTIVE	KEY PERSON
Standards, governance, risk & compliance	○ Exposing the students to be aware of international standards of process, governance and industry Practices (ISO/CMMI). ○ Practice to use of tools and technologies for software development, Testing and quality management. ○ To provide the basic knowledge of risk managements ○ To understand the core concept of information security ○ To gain practical exposure and hands on experience using tool driven Agile platform.	Dr. Rajesh Kumar Sahoo Dr. Chinmay Ranjan Pattnaik
Automation & robotics	○ Embedded Intelligent System ○ Smart Things for Smart City ○ Intelligent Factory Automation ○ Autonomous Vehicles (AIVs) ○ Robotic Arms & control systems Wireless sensors & its connectivity.	Er. Debakanta Behera
Composite & nanomaterials	○ To address the current challenges and issues in Advanced Composites Technology ○ To Foster and strengthen the industry interactions in the area of Advanced Composites ○ To develop innovative processes in achieving low cost high quality Advanced Composites.	Dr. Manoj Kumar Praharaj Dr. Deepak Kumar Jesthi Dr. Narsingh Deep. Er. Monalisha Satapathy
Data science & artificial intelligence	○ Introduction on Data Science, AI related mathematics and Python language ○ Applied statistics, probability and time series analysis ○ Machine learning: supervised and unsupervised learning ○ Text detection and their conversions. ○ Image processing in object identification. ○ An email spam filter, ○ Estimates the value of a house, ○ predict sales on a new product based on previous sales data, ○ Predicting mileage of a car bases on feature selection,	Dr. Amaresh Sahu

	○ Police review a large photo gallery for a missing person, self-driving cars prepare to identify objects in their way.	
Design & prototyping	○ 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	Er. Chinmay Das
Energy efficiency & sustainability	○ Application of latest technologies for cost-beneficial energy-efficient sources. ○ Application of new technologies, tools and strategies to make distributed generation more affordable. ○ 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. ○ Develop operational tools, models and simulations that optimize the benefits of plugin Electric Vehicles to the Electricity System.	Er. Debayani Mishra
Marketing & social research	○ 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 programs.	Dr. Shree Kanungo

❖ Research Facilities

- ➢ Seven numbers of Centre for Advanced Research (CAR)
- ➢ Classes allotted for students with different groups
- ➢ Research and Development cell is open up to 5.00 pm for faculties and students, to use the facilities.

➢ Incentives are given to faculties for publication, attaining Seminar, conference, workshop etc.

❖ Research Resources

1. Highly qualified & skilled faculty members and technicians.
2. E-Library with Subscription of reputed Journals and e-books.
3. Library with Books, Journals, Magazines, and Newspapers.
4. Infrastructure

A. Well-equipped **Ultrasonic Laboratory** in R&D Cell, with

i) Multi-frequency ultrasonic interferometer, Model: M-84, Make: Mittal Enterprises, New Delhi, India.

ii) High precision temperature control bath, Model: SSI-03SPL, Make: Mittal Enterprises, New Delhi, India.

iii) Digital Conductivity meter, Model: 611, Hindustan Scientific linkers, Cuttack, Odisha

iv) High precision Balance, Model: KD-150

v) Oswald Viscometer.

B. Well-equipped **Nano Technology Laboratory** in R&D Cell with

i) Probe Sonicator with multi frequency probe

ii) Magnetic stirrer.

C. Well-equipped **Testing Laboratory** in Mechanical Department, with

i) Universal Testing Machine: model: UTN, 20, Capacity 200 KN, Make - Fuel Instruments & Engineers Pvt ltd, Maharashtra.

ii) Impact testing machine: Model: I-30, Capacity-300 J, Make - Fuel Instruments & Engineers Pvt ltd, Maharashtra.

D. Well-equipped **Material Testing laboratory** in Civil Department, with

i) Specific gravity bottle ii) Vicat apparatus

iii) Weighing balance (10 kg ,100 kg)

iv) Slump cone apparatus v) Compaction factor apparatus

vi) Flow table apparatus

vii) Baby concrete mixture viii) Vibrating table ix) Cube mould

x) Cylinder mould xi) Beam mould xii) Compression testing machine

xiii) Flexural testing machine xiv) Prism test apparatus.

E. Well-equipped **Geotechnical Laboratory** in Civil Department, with

i) C.B.R apparatus motorised ii) Direct shear test apparatus

iii) Triaxial testing apparatus iv) Liquid limit apparatus

v) Sieve shaker (Hand operated) vi) Cone penetrometer apparatus

vii) Plastic limit apparatus viii) Shrinkage limit apparatus

ix) Core cutter with dolly and rammer x) Sand pouring cylinder

xi) Standard and modified proctor test apparatus xii) Pycnometer

xiii) Vane shear test apparatus xiv) Brass sieve

xv) Unconfined compression test apparatus xvi) Digital oven

xvii) Constant and falling head apparatus xviii) Sampling Auger

xix) Fixed ring odometer

xx) Digital weighing balance (20 kg)

xxi) Specific gravity bottle.

F. Well-equipped **Transportation engineering laboratory** in Civil Department

i) Crushing value apparatus ii) Los Angeles abrasion testing machine

iii) Impact value testing machine iv) Ductility testing apparatus

v) Digital weighing balance (100 kg , hanging) vi) Penetrometer

vii) Stripping value testing apparatus viii) Ring and Ball apparatus

ix) Marshall testing apparatus.

G. Computer centre with updated systems and good internet facility.