

UNIVERSITY A+



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PENTECOST UNIVERSITY
TRANSFORMATION AND SERVICE



**PENTECOST
UNIVERSITY**

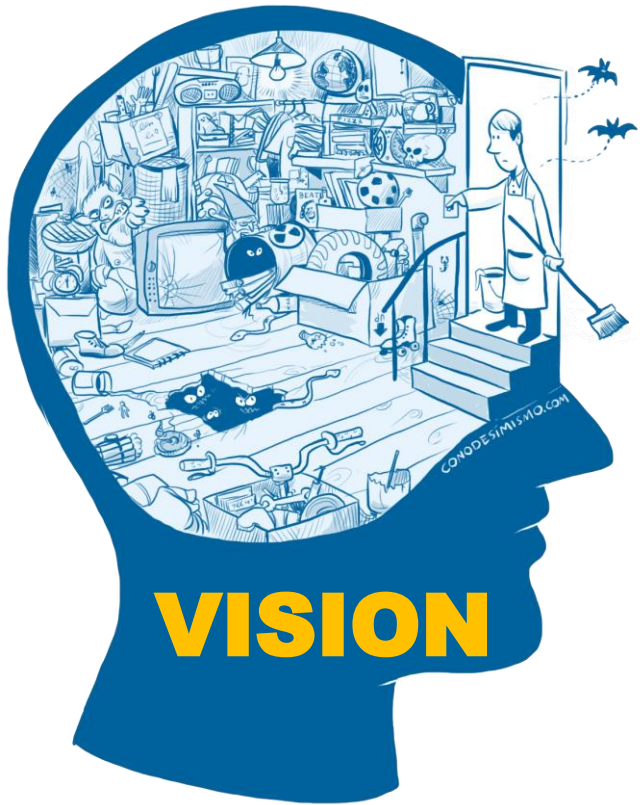
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INTERNATIONAL DIGITAL CENTRE

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01 To lead in cutting edge research in the multidisciplinary field of manufacturing systems.

02 To become a distinguished research Centre that uses systematic methodology to develop models for technological developments and innovations in the manufacturing industry.

AIM

To conceive new ideas, model and design these ideas, test the ideas and then implement the ideas.

GOALS

To fill the gaps in engineering solutions in Ghana and Africa.

OBJECTIVES

To fill the gaps in engineering solutions in Ghana and Africa in general.

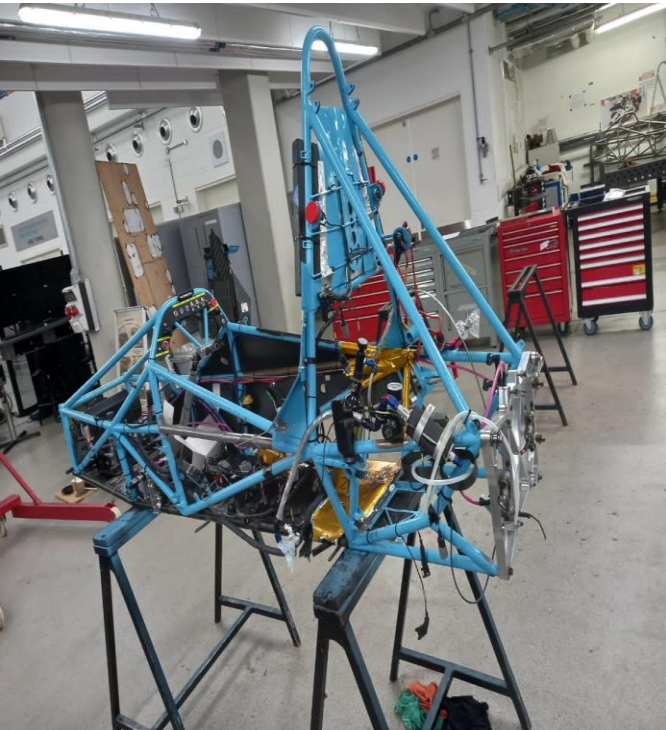
- ✓ To test solutions before implementation.
- ✓ To conduct experiments with proposed solutions.
- ✓ To assess Key Point Indicators (KPI's) such as Cost, Time, and Quality.
- ✓ To develop customized analytical life cycle cost and early stage design.
- ✓ To host Science Technology Engineering and Mathematics (STEM) and International events.

RESEARCH SCOPE

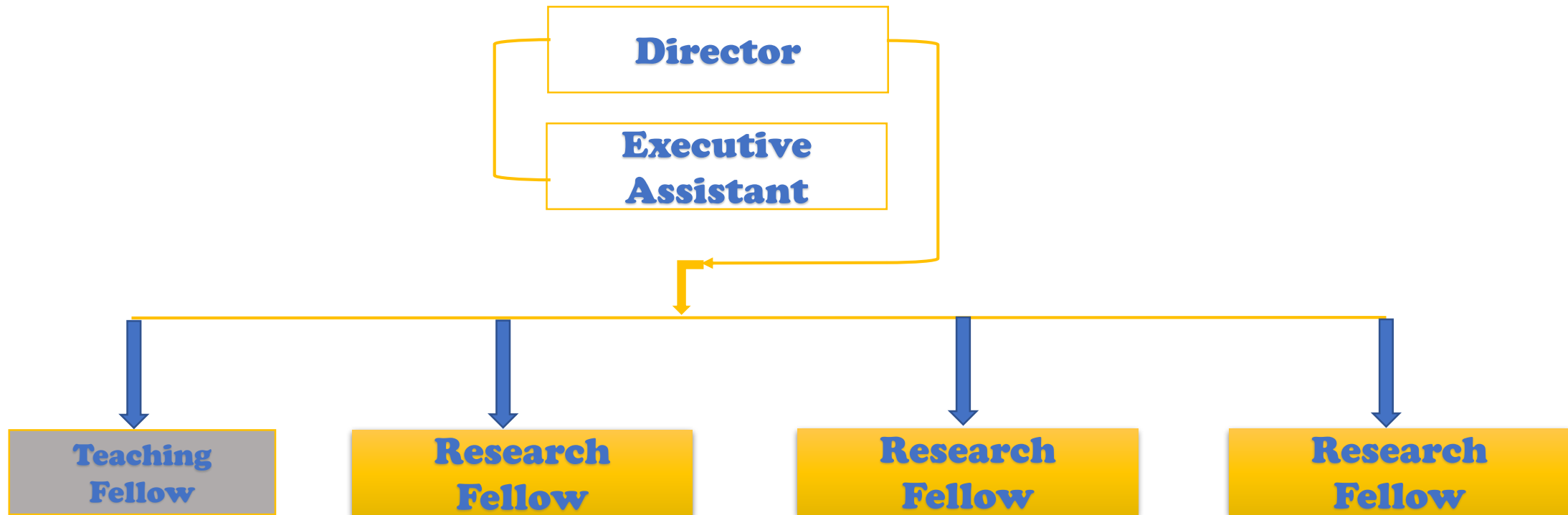
Provide virtual engineering technologies and applications capable of modelling real life situations as a basis to predict their future performance.

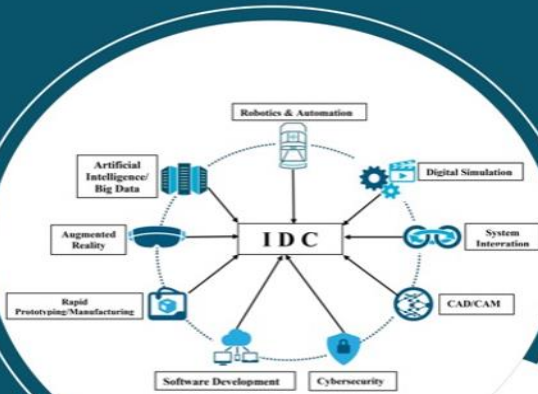
These models will be experimented and tested to derive the best model taking into consideration cost and time-efficiencies.

The research activities are useful in the manufacturing, service, healthcare, pharmaceuticals, transportation, agriculture, education, politics, oil and gas industries.



INTERNATIONAL DIGITAL CENTRE ORGANOGRAM



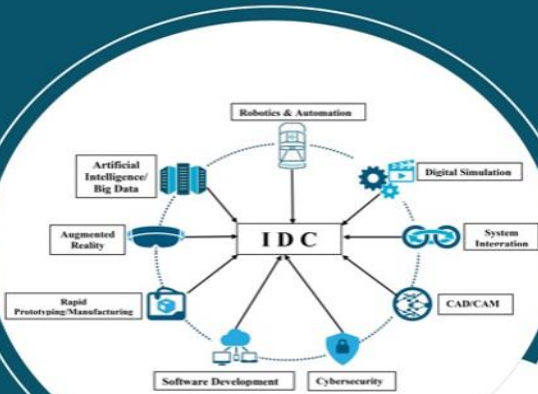


INTERNATIONAL DIGITAL CENTRE (IDC)

The International Digital Centre (IDC) is dedicated to the design and development of novel technologies for solving problems. It serves as the nerve for developing integrated systems solutions in support of the Industry 4.0 agenda.

THE VARIOUS UNITS ARE:

- ✓ Rapid Prototyping/Manufacturing Unit
- ✓ Digital Simulation Lab
- ✓ Augmented Reality Lab
- ✓ Smart Factory (Robotics and Automation)
- ✓ CAD/CAM Centre
- ✓ Digital Media (Audio, Video, Photos Studio) Studio
- ✓ Software Development Unit
- ✓ Cyber Security Centre
- ✓ Systems Integration

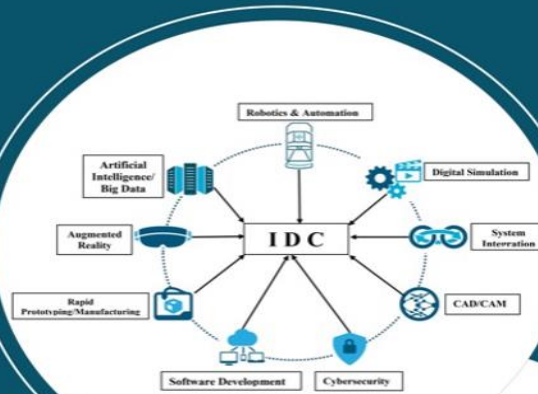


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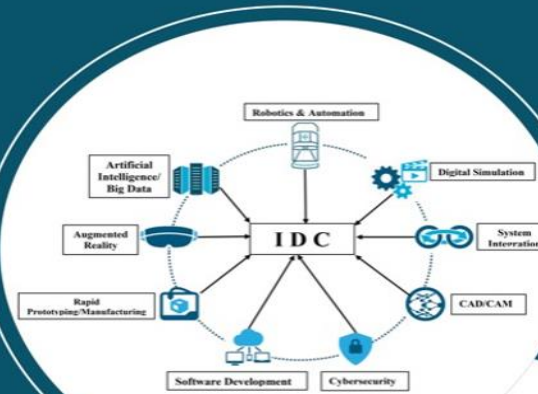


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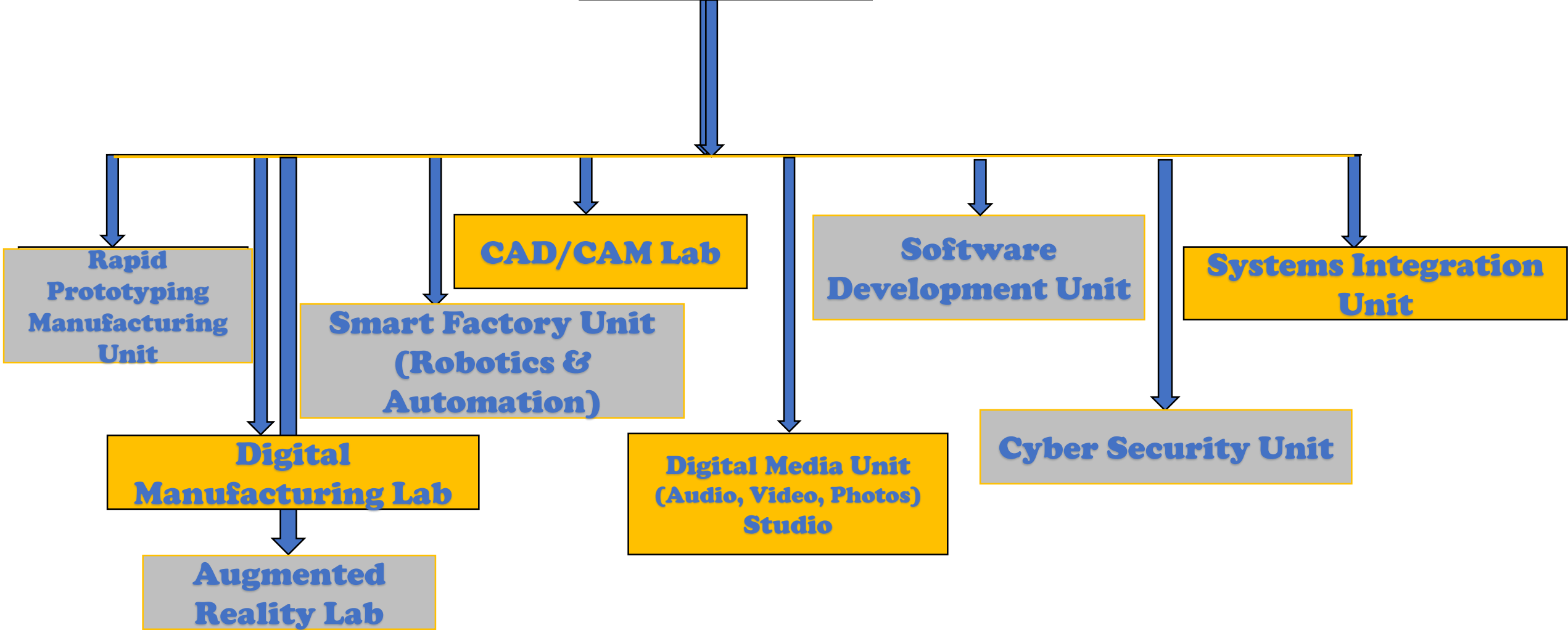
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IDC VARIOUS UNIT



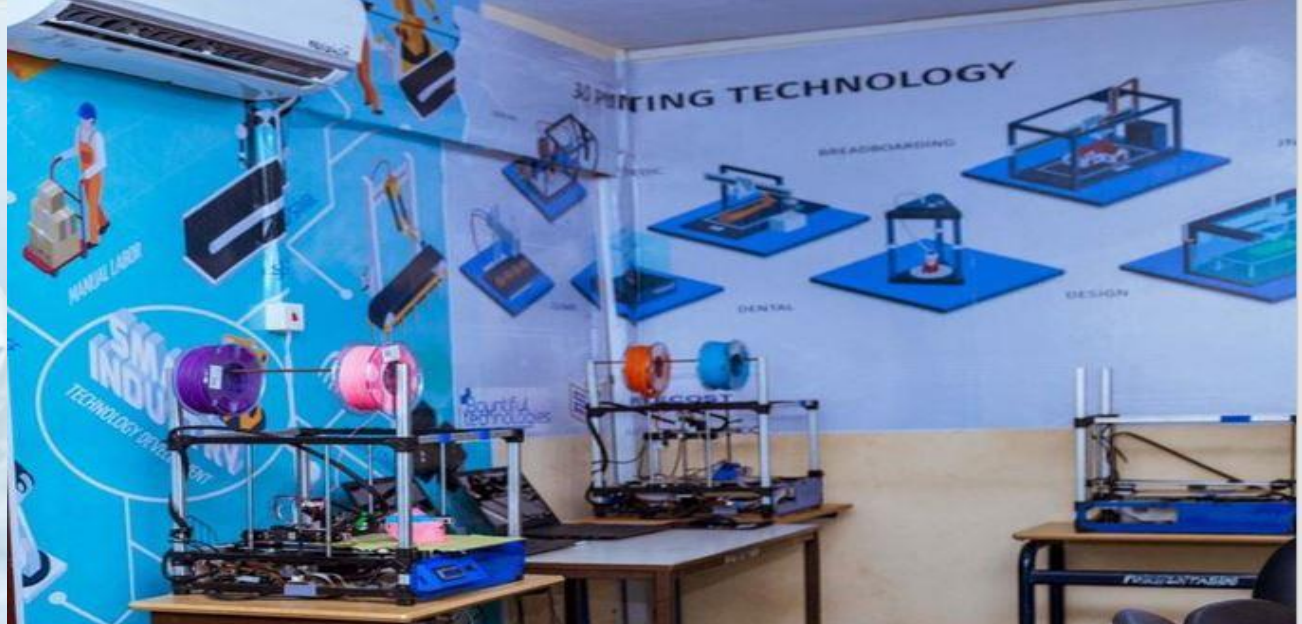
Rapid Prototyping And Manufacturing Unit

Rapid Prototyping and Manufacturing Technologies involves the use of prototype as a master pattern for tools and manufacturing.

The Rapid Prototyping Centre (RPC) is an applied research Centre that helps businesses achieve prototype more quickly and take products to market faster.



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Digital Manufacturing Unit

Digital manufacturing is the application of computer systems to manufacturing services, supply chains, products and processes.

Digital manufacturing technologies link systems and processes across all areas of production to create an integrated approach to manufacturing from design to production and on to the final productions.

Augmented Reality Lab



This centre aims to research more into the use VR by developing robust methodologies and tools that integrates knowledge from various sectors with suitable and realistic virtual processes and models.

The objectives:

- (a) To enable solution-oriented people and organizations from various sectors to interact, learn, test, and evaluate digital content using 3D technology,
- (b) To foster experiential and autonomous learning in a virtual setting, and supports collaborative learning through simulation and live interaction.
- (c) To allow learners also have an advanced interactive experience based on various educational context.

CAD/CAM Unit



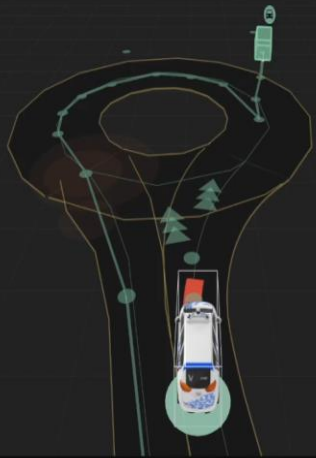
CNC machine tool is an important equipment for realizing the modernization of manufacturing industry.

Computer Aided Manufacturing and Computer Aided Design combined as one Unit in IDC will advance current industry 4.0.

The following software will be use, these are; Fusion 360, AutoCAD, and Solid Works

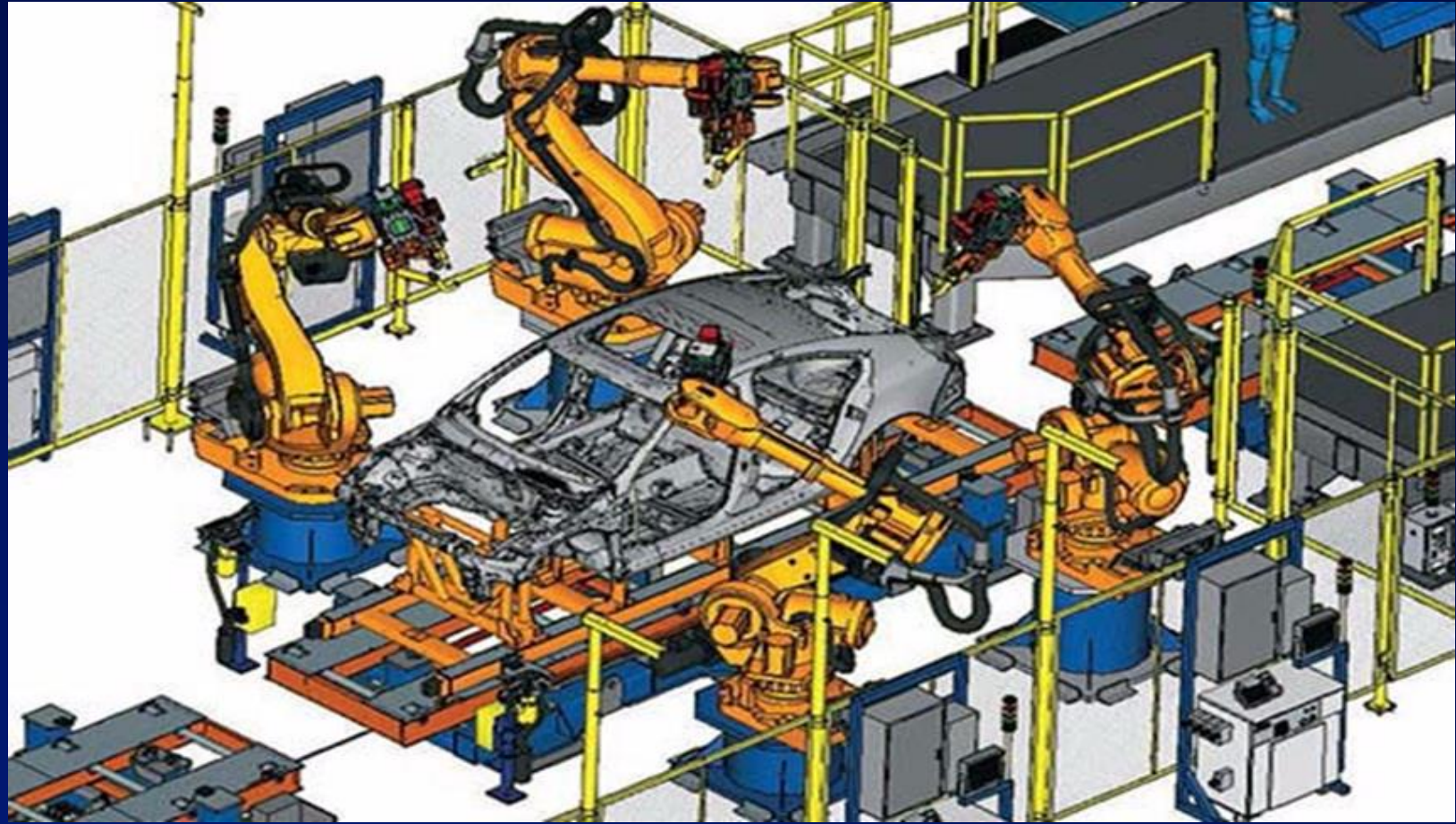
Smart Factory (Robotics & Automation)

Applied Intuition

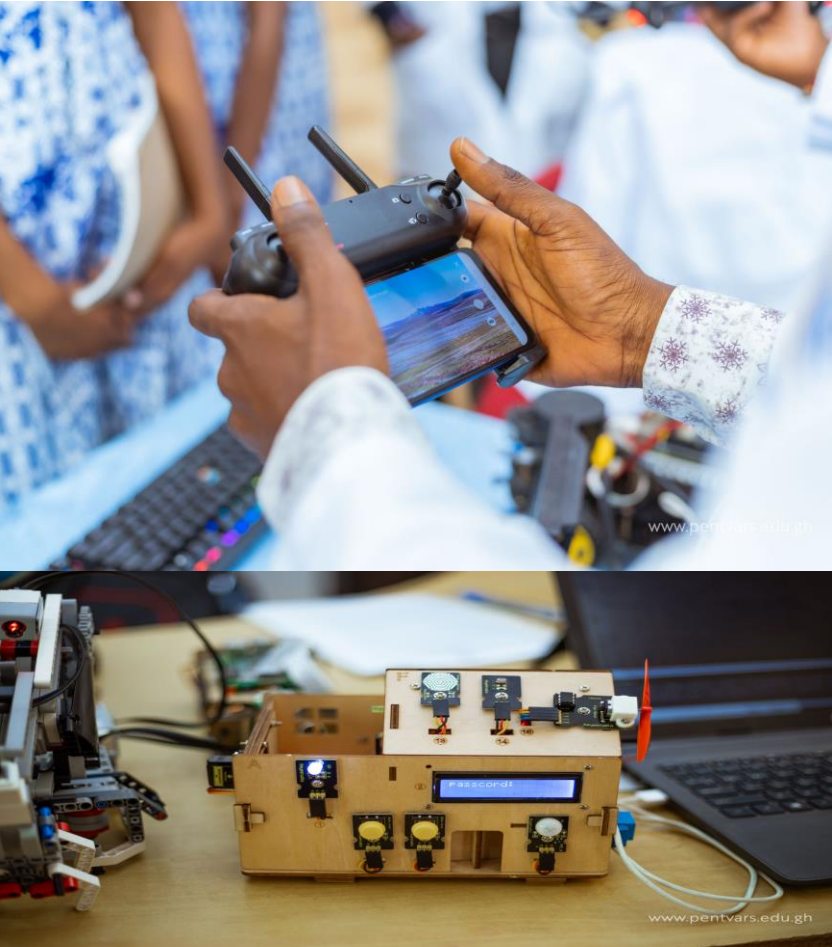


Regression testing in simulation

Cul de sac with vehicle backing out of driveway



Digital Media (Audio, Video, Photos) Studio



The unit will comprise of the state of the art hardware.

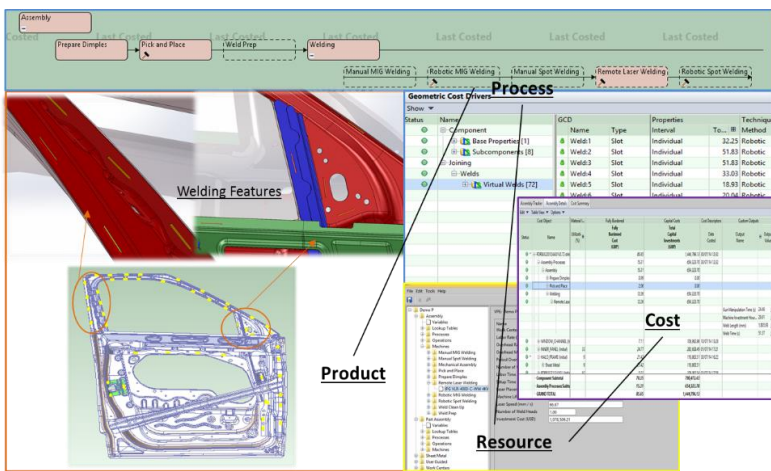
The following are the equipment:

- **Computes**
- **Digital cameras (Preferably DSLRs)**
- **Graphics and printing devices**
- **Audio recorders**
- **Microphone**

Software Development Unit

This unit will develop software but not limited to the following applications:

- Software for mobile and website development
- 3D graphics software
- Open source development
- Various programming languages, databases and operating systems
- System engineering



MANUFACTURING DESIGN (IDC INTEGRATED MODELLING APPROACH)

❖ Conceptual lab-based description

❖ Process models

❖ Facility models

❖ Dynamic simulation models



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International Digital Centre



Collaboration and International Partners

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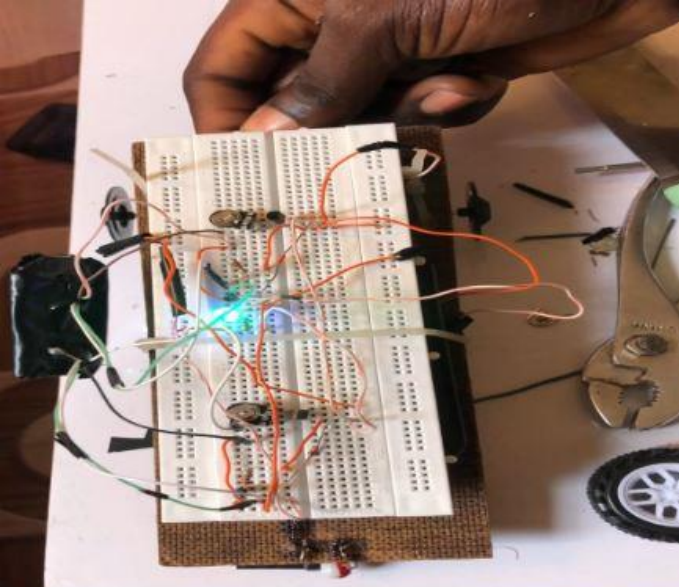
- ❖ Memorandum of Understanding with Bountiful Technology.
- ❖ Partner with Kumasi Business Incubator at KNUST.
- ❖ TU Delth Zurich students to develop a business model using 3D printers in IDC.

IDC PROFESSIONAL PROGRAMMES

Proposed Programs and Cost

COURSE NAME		DURATION	LEVEL ONE(1)	LEVEL (2)	LEVEL (3)	COST	Potential Jobs
Robotics Essentials (AI, Machine Learning, Remote Sensing) for nine(9) months,all levels and three months for each level			\$350	\$400	500 (certification included)	\$1,250.00	Project manager, AI analyst , Robotics technicians
All Courses are hands-on and taught by professionals for the industry and students have assigned placement mentors assigned to them			IT Essentials	CCNA	CCNA		-PC Technicians, -Network administrators, -Cyber security analysts, -system administrators for small to medium -size and large -corporations.
CISCO Networking Academy Program	3 months (Each Level)	\$300	\$300	\$300	\$900.00		
Cost Certification and Tool Kits	\$250 (Network & Tool PC Kits) Laptop (\$300-\$400)	\$150 (certification)	\$500 (certification)	\$550	\$1850.00		
Total cost for full CISCO certification						\$2750.00	
3D Printing & Design Certification	3 months (Each Level)	\$300 + \$400 (laptop)	\$300	\$300	\$300	\$1,300.00	Rapid Prototyping Specialist,
Multimedia & User Experience Microsoft Certification Track	3 months (Each Level)	\$300 + \$400 (laptop)	\$300	\$300	\$300	\$1,300.00	-Full Stack Developer -Front End Web Developer -Back End Web Developer -Web Producer-
Software & App Development	3 months (Each Level)	\$300	\$300	\$300	\$300	\$1,300.00	-Technical Project Manager

Microsoft Certification Track		+ \$400 (laptop)				-QA and Test Engineer -Software Developer
Web Development (BootCamp) Microsoft Certification Track	3 months (Each Level)	\$300 + \$400 (laptop)	\$300	\$300	\$300	\$1,300.00 -Application Development Manager -Computer Programmer -Web Designer -Email Developer
Robotics Learning	Per Term 13 weeks				\$150.00	
Coding for kids & Innovation with Raspberry Pi	Per Term (Each Level) 13 weeks				\$150.00	
Study abroad on Scholarship to pursue (Master's degree and PhD programs in STEM)						
College Placement Prep (ACT, SAT, GRE, GMAT, IELTS, TOEFL, GAC, EPT3 & PTE)	8 weeks (In class)				\$280	STEM degrees scholarship opportunities in the US
College Placement (ACT, SAT, GRE, GMAT, IELTS, TOEFL, GAC, EPT3 & PTE)	8 weeks (Online)				\$200.00	STEM degrees scholarship opportunities in the US
Coding and Robotics Day/Boarding Summer Camp (Basics, JHS & SHS)	2-3 weeks				\$350.00	Robotics, app dev, coding, animation , leadership, graphics, video, career advisory session with IT Leaders front the industry, University life.





**IDC STAFF
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