Project Proposal Summary

For the 2022 academic year, we would like you to work on projects that tackle the United Nations' Sustainable Development Goals. The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing -in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth –all while tackling climate change and working to preserve our oceans and forests. https://sdgs.un.org/goals

Your proposal should clearly show how Information Technology can be used to achieve one of the SDGs using the following resources:

1. Robotics using the Kuka arm.
   You can submit proposals that involve the following:
   - Optimizing pick and place
   - Sorting of objects
   - Virtual Reality to train on a robot arm
   - Augmented reality for robot arm
   - IoT for improved safety around the robotic arm
   - IoT integration into Robotic arms

The main aim here is that your proposal should include the use of the Kuka robotic arm that is in the campus hangar

2. Aviation Project

You can submit proposals that involve the following:
   - Single pilot safety systems
   - Automated Pilot checklists
   - Sensors to identify and warn pilots of mountains – single-pilot aircraft
   - Pilot fatigue

The main aim here is that your proposal should include the use of the plane that is in the campus hangar

3. BMW Project

You can submit proposals that involve the following:
   - Child safety
   - Eye-trackingng for driver fatigue and other scenarios
   - Vehicle to Infrastructure communication
   - Vehicle to vehicle communications

The main aim here is that your proposal should include the use of the BMW that is in the campus hangar.

4. DJI Tello Drones https://www.ryzerobotics.com/tello

The main aim here is that your proposal should include the use of the Tello drones that is in the campus hangar

5. 4WD Smart Robot car https://www.robofactory.co.za/arduino-kits/217-4wd-obstacle-avoidance-smart-robot-car-kit.html

The main aim here is that your proposal should include the use of the 4WD Smart Robot car kit that is in the campus hangar

6. Smart Plant Watering Kit Automatic Smart Plant Watering Kit (robofactory.co.za)

The main aim here is that your proposal should include the use of the 4WD Smart Robot car kit that is in the campus hangar

You are required to submit a project proposal as a group. It should have the following key components:

Proposal Components	Content
Project Title	
Aim and Objectives of the Project	Which SDG goal do you want to solve? Please describe the need for the project and how the proposal was developed. Explain why the project is being proposed, how it relates to indicator achievement and how it is innovative.
Software and hardware requirements	Brief description of software/s and hardware/s required to develop the project.
Proposed Budget	Your proposal should include a Budget Justification explaining an estimate for each line item.

The description of the purpose of the proposed project should be as clear, concise and focused as possible. It should include the project's purpose, goals, specific objectives, method, and anticipated impact. Objectives need to be stated in measurable terms and be specific and consistent with the statement of need and the purpose of the proposed project. Objectives should be formulated as a clear statement of what is expected to be achieved through project implementation.

Include Team Members in your document: (PRJ251 max number of students is 6, PRJ37/81 max number is 5)

Surname	Name	Email – Address (student email)	Indicate subject code (PRJ 251/ 373/ 381)

Note:
- ✓ *Submission date: 2022-05-16*
- ✓ *Submit in a word document*

- ✓ *PRJ371 & PRJ 381 can work together*
- ✓ *If you are not in any group by 2022-05-16 we will allocate you to a group*
- ✓ *To avoid duplication only one group member submits the document*

Kind regards
The Project Team