Tech-challenge Robotics Level 1: Introduction to Robotics

Teaching Week	Content
1	Introduction to robotics

Join a team

Introduction to Engineering notebook

Safety Course: Hand Tools, Robot parts, Handling of robots. |
| 2 | What is the robot, what are the goals and how they are achieved.

Introduction to robot parts. |
| 3 | Identifying the robotic problems. Problem solving, identifying solutions to the problem.

Requirements analysis (Design Process Part 1)

Robotics Challenge Analysis |
| 4 | Drivetrain Overview

Purpose and construction.

Types of Drivetrain*

Design analysis and Evaluation

PMI, Design Criteria

Applications of each individual drivetrain. |
| 5 | Drivetrain Design - (Design Process Part 2)

Components of a Drivetrain**

Designing for integration (i.e. elevator, game piece manipulation, electronics)

Electrical Integration - Wiring

Begin student drivetrain assembly |
| 6 | Student Drivetrain Design |
| 7 | Student Drivetrain Design + Assembly + Programming

Introduction to the programming environment

Introduce basic programming (what is a variable? if/else statement?) |
| 8 | Drivetrain Assembly + Drivetrain Programming

Further teaching of programming (functions, etc)

Programming basic robot controls/motors |
| 9 | Drivetrain Assembly + Drivetrain Programming

Students write drivetrain code (e.g. tank controls) |
| 10 | Drivetrain Programming

Testing & Evaluation (Allocate more time for programming + testing) |