

FTC Coach Equipping Course

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This is a preparatory Tetrrix course to qualify and equip coaches and trainers for the FTC. Trainees are going to be introduced to the basics of the Tetrrix platform and the FTC, starting with essential details about the tournament, passing by relevant general-fundamentals of JAVA language, basics of Tetrrix text-coding, kit's constituents, a range of Mechanical-design concepts, ending with team-management skills. This course is meant to provide trainees a solid-understanding, to be well-prepared FTC coaches.

Course details:

This course is nothing but (25 online training-hours), it is going to be provided through our online platform (IPEducation) as recorded lectures. Moreover, there will be live-meetings as a technical support through (Zoom platform) which will be scheduled and sent to the enrolled trainers by using the (WhatsApp) or Emails.

kits required for the Course :

1. TETRIX® FIRST® Tech Challenge Competition Set
2. Rev control hub Kit
3. Mobile phone and gamepad



The lecturers

Eng. Mohammad Abu Fares



an Expert trainer and an organizer for a range of Robotics' tournaments, holds more than 25 awards related to Robotics field, out of which 8 international ones. a Robotics, technical engineering and AI trainer and lecturer at IbdAA foundation, IP Education, Scientific target, and Bright engineers institutes.

Further information is available [click here](#)

Eng. Mujahed Taha Al-Fararjeh



He is the technical director for IPEducation institute and the former head of technical department of Bright engineers institutes. an Expert trainer, and an organizer for a range of VEX tournaments in Jordan, A Robotics, technical engineering and AI trainer and lecturer at IbdAA foundation, IPEducation, scientific target, and Bright engineers institutes.

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Introduction to First Tech Challenge

General Explanation of the FTC, the challenge of this year, team management, and training methods that pertinent to the challenge.

Topics:

1. Introduction to First Tech Challenge .
2. Team management.
3. Preparing for the ULTIMATE GOALSM season.



Electronic devices

Introduction to the relevant electronic devices, how to be used and wired, furthermore, how to configure and set them up.

Topics:

1. REV controller hub.
2. DC motors , encoders, Sensors (IR seeker, Optical distance, Touch), gamepad.
3. Robot-side phone (the built-in Android system in the REV controller hub), driver-side phone (wiring and configuration).



Structural and Mechanical pieces

Explanation of the mechanical and structural pieces available in TETRIX kits.

Topics:

1. Structural pieces and how to use them.
2. Mechanical pieces and how to use them.
3. Exercises and practical applications.



Build the Robot

Getting basics of design concepts and building your first robot.

Topics:

1. Build robot
2. design concepts



Getting prepared to programming

To get prepared to program Tetrix robots by using Java language. furthermore, downloading and setting up the Android studio.

Topics:

1. Introduction to Java principles-related.
2. Download and setup the Android studio (basics, download the SDK, OpMode, basics of writing my own code).



Basics of autonomously programming

Introduction to the basics of autonomously Tetrix-robots programming

Topics:

1. Move a robot and using encoders.
2. Servo motors and arms.
3. a robot senses (using the touch, the IR seeker, and the optical distance sensors).
4. Hands-on implementation.



Basics of Tele-operating programming

Introduction to the basics of tele-operating Tetrix-robots programming

Topics:

1. Using the gamepad in control.



Design applications

Explanation of a group of different advanced mechanical concepts through a range of practical applications.

Topics:

1. Gears.
2. Omni wheels.