

Virtual Robotics

About the Course

Step into the world of Robotics, Electronics, Artificial Intelligence, and Programming- all from the comfort of your home! This engaging online course introduces young innovators to robotics through powerful virtual simulation platforms, allowing learners to design, program, and test robotic systems without the need for physical hardware.

Using beginner-friendly virtual electronics, programming, robotics, and AI tools, students will complete exciting hands-on projects while learning essential STEM concepts. The course develops logical thinking, coding, engineering, and problem-solving skills through interactive weekly challenges and simulations.

With a maximum of 4 learners per class, every student receives personalised guidance and individual support. Practical assessments will be conducted during Week 6 and Week 12, with a Certificate of Completion awarded upon successful completion of the programme.

Weekly Topics

- **Week 1:** Introduction to Robotics & Virtual Simulation
- **Week 2:** Programming Basics for Robots
- **Week 3:** Virtual Electronics & Circuit Design
- **Week 4:** Sensors, Inputs & Outputs
- **Week 5:** Robot Movement & Navigation
- **Week 6:** Mid-Course Practical Assessment
- **Week 7:** Automation & Smart Systems
- **Week 8:** Introduction to Artificial Intelligence
- **Week 9:** Autonomous Robot Programming
- **Week 10:** Robotics Design Challenges
- **Week 11:** Build & Program Your Own Virtual Robot Project
- **Week 12:** Final Project Presentation & Assessment

By the end of the course, learners will have built and programmed multiple virtual robotic systems, explored the fundamentals of AI and automation, and gained a solid foundation for progressing to physical robotics and more advanced STEM programmes.