



# Introduction to Space and Satellites



## Course Description

A 1-day course aimed at a non-technical audience and those new to the subject. It includes some hands-on experiments using our Satellite Learning Laboratory training platform.

The course provides a basic understanding of our uses and applications of space, space science, orbits, the purposes of satellites and how they work.

We will explore what inspires us to look to space and the many and varied uses of space today and in the future. We will examine what a satellite is. We will explore the space environment from our presence in the solar system, the Earth's gravity and magnetic field and the vacuum of space. We will examine how we get into space, learn how aircraft and balloons use lift to counter gravity, rockets use thrust to get into space and how satellites use gravity to remain in orbit around the Earth.

We will explore what satellites do, what a payload is and what types there are. What is the platform and what functions it performs. We will perform experiments using the Satellite Learning Laboratory to explore how satellites and the sub systems function. Finally, we look at how a satellite fits within a space system.

## Course Topics

### Space in our lives

- The inspiration of space
- Space in our daily lives
- Why we go to space
- Applications and Services

### Space Science

- The solar system
- Earths orbital motion
- Earths magnetic field
- Gravity
- Vacuum
- Electromagnetic Spectrum
- Getting into Space
- Orbits

### Satellites

- What is a satellite
- Payloads and satellite bus
- Types of payloads
- Satellite sub systems
- What makes up a space system

## Who Should Attend

Non-technical employees within the space sector, or those wishing to move into the sector. The course provides a non-technical introduction to space and spacecraft, covering why we use space, what makes space different, through to what satellites and their components are and do.

## Course Materials

Each participant will receive:

- Course handout.
- A copy of Introduction to Space and Satellites workbook.

## Course Objectives

### Gain an understanding how space fits into our daily lives

- Understand the range and diversity of space applications

### Gain an understanding of the basics of the space environment

- How solar environment, earths magnetic field, gravity, vacuum influence satellites

### Gain a basic understanding of what is an orbit

- Learn about the most commonly used orbits

### Gain an understanding what satellites do, what the main parts are and their function

- Learn about payloads and satellite bus
- Learn what are the different sub systems of a satellite.

### Gain an overview of how satellites fit into a space system

### Gain familiarity of language and terms used within the industry.