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Description automatically generatedafter:hours Centre for Languages, Culture and Communication

**Course Descriptor**

**Course Title:** Understanding Science: An Introduction to Science

**Type of Course:** Adult Education

**Credit:** Not credit bearing

**Weekly Session Titles and Descriptions**

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| Week | Session Title | Description |
| 1 | The Universe | * In this session we will discuss the origin of the universe and discover how stars and planets are born. We will learn about the different objects which we can find in the universe today: galaxies, stars, and planets. |
| 2 | *Earth and the origin of life* | * We will zoom in on the Earth and learn about how our Planet was formed. We will discuss the origin of life, and find out how this early life developed to the life forms we have today. We will discuss the current state of the Earth, mainly focussing on the planet’s climate. |
| 3 | *Quantum Physics* | * We will discover the build-up of atoms, and the nature of the different elementary particles. We will learn how new atoms are detected and the laws of physics which apply at this smallest scale. |
| 4 | *Genetics and evolution* | * In this lesson we will learn everything about the genetic code of life: DNA. We will discover how DNA determines what you look like, how it is inherited over generations and how it is involved in the evolution of species. |
| 5 | *The human body and neuroscience* | * We will learn how the human body works, and the function of the different organs and tissues in our body. We will zoom in on one of the most important and mysterious organs: the brain. We will discuss how the brain is built and how it functions. |
| 6 | *Disease* | * In this lesson we will discuss what can cause a disease and how the immune system is able to prevent diseases. We will discover how pharmaceuticals are designed to prevent and cure diseases. |

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| Course Overview You don't have to be scientific to enjoy and understand science. In fact, science is everywhere: it allows you to make a lovely hot cup of tea, to see all the objects around you, and to cross over water safely by using a bridge.  Science also holds our galaxy together, it makes the laws that drive biodiversity, and describes the nature of subatomic particles - the building blocks of everything. Diving into the diversity and beauty of science is an adventure, full of revelations and surprises.  This course aims to give you just a taste for that adventure, as we travel through the entirety of scientific understanding (or at least as much as we can fit in). Starting with the cosmos, we will travel through our universe and discuss all the objects we meet on the way. Landing on Earth we will learn about the ever-changing aspects of our planet, and how Earth can support life. We will learn about the chemical building blocks of life, discover how our genetics determines who we are, see how our body works and can be improved using modern medicine.  Each week we will explore a new topic, as well as discussing the science that is going on in the world around us and how we think that science will affect our future. If you have ever wanted to learn more about science and the way everything works, join us for what promises to be an exciting ride!  All sessions will include a slide lecture, as well as group discussions and even some short demonstrations of experiments. Required Previous Experience (if any) None Required Reading Material or Special Equipment Needed (if any) There is no compulsory reading required for this course, and there is no set course text. However, if you would like to read more on the subject you might enjoy the book:   * William F. Bynum, A Little History of Science (New Haven: Yale University Press, 2013)  Learning Outcomes At the end of this course you should be able to   1. Understand a number of basic concepts in diverse branches of science 2. Understand the basic methodology of science and how scientists reach the conclusions the come to 3. Identify aspects of science that impact in the wider world.   **Possible Further Study**  Further courses on the after:hours programme might be useful to you. Additional information This course descriptor may be subject to change during the delivery of the course, depending on the specific direction and nature of the learner cohort, and is intended to be responsive to the group dynamics as they emerge during the delivery of the course. |