



**L-Università  
ta' Malta**

## **Master of Science in Space Sciences and Astronomy**

### **Course overview:**

Space science is the study of natural phenomena beyond Earth bound experiments. This ranges from optimizing the design of telescopes to understanding the inner workings of gravitational waves from binary black holes. The primary topics of the course are astronomy, astrophysics and cosmology. Astronomy is principally the study of making observations of space. Given the large amount of data available to astronomers, the processing techniques must be very novel to handle all this in a timely fashion. This has led to many industrial applications in finance, gaming, and many other industries. Astrophysics aims to broaden our understanding of the various objects present in the Universe. These range from the average star such as our Sun, to black holes where the extremes of gravity can produce the most violent events ever observed. Finally, cosmology concerns itself with a larger view of the Universe where the goal is to understand the history of the Universe from the big bang to the present. This means understanding the role of dark energy and exploring the different competing theories of gravity.

The Master's Programme will offer you the possibility to tackle some of the major problems plaguing space science ranging from designing new radio astronomy antennas to be implemented in new and upcoming radio astronomy project to how alternative theories of gravity would modify cosmological dynamics. These problems require different skillsets, which range from theoretical subjects to more programming based topics, such as modelling large scale structure growth and so on. Depending on the project, the skill set acquired in this course has applicability in industry.