

Astronomy Education in Argentina



This overview is part of the project "Astronomy Education Worldwide" of the International Astronomical Union's Office of Astronomy for Education.

More information: <https://astro4edu.org/worldwide>

Structure of education: Children begin formal compulsory schooling at age 4, but there are optional kindergarten institutions from 1 to 3. Then follows six or seven years of primary education (the total number of years for this education level varies among the 23 provinces and the autonomous city of Buenos Aires). Secondary school level period is for six or five years, depending on the period of time that has been had in the primary level. In summary: there are fourteen years of compulsory education all over the country, from 4 years old to 18 years old. Students can choose an orientation (social sciences, natural sciences, arts, 10 orientations in the whole) at the secondary school. If they choose a school with a technical orientation, they have one more year of study. After this, the students have the option to study at the university. There are several universities in all the territory with many specialties, Astronomy can be studied in only three national public ones (La Plata, Córdoba and San Juan). For all education levels there are public schools and universities free of charge (state administration) or with charge fees (private with state subsidy) or with a more expensive monthly cost (completely private). Most (public) schools are non-religious, but there are some confessional schools (Catholic, etc.). All secondary schools have English as a foreign language. At present, there are nearly 64.000 educational institutions in Argentina, 80% depending on the State (each province or Buenos Aires) (for free); a few of them depend directly from universities. Nearly 28% of the educational institutions of Argentina are rural (non-urban schools).

Education facilities: Argentine schools have typical class sizes under 30 pupils both sex with subjects like science, art, language, history, geography, technical subjects, and some other areas. Most of these subjects have teachers with professional preparation. Almost all of these schools have access to electricity, running water, health care, communications and internet connections, libraries and some laboratories too. Some of the primary schools provide breakfast and lunch to their students. Schools have 4 or 5 hours of classes on average, although some private and universities' schools have double time schooling.

Governance and organisation: Each of the 23 provinces and the autonomous city of Buenos Aires, in which Argentina is politically divided, has Ministries or Offices of Education in charge of all educational establishments located in the corresponding geography (educational Jurisdictions). The National Ministry (without schools in charge) coordinates with these Ministries or Offices – forming a Federal Council – the educational policies of the country, in terms of school structure, fundamental curricular content and budget items.

Teacher Training: Teachers are trained in tertiary level institutes, which depend on some of the 24 educational Jurisdictions; furthermore, there are many universities that train teachers. Professional

teachers for kindergarten or primary school have a general formation in all areas. Professional teachers for the secondary level could be specialized in specific areas: general education, disability education, adults' education, arts, music, physics, history, chemistry, etc. There is no career designed specifically for the teaching of Astronomy. In many cases, teachers of secondary school may be non-professional teachers (engineers, biologists, pharmacists, physicists, etc.); many of them can carry out complementary teacher training courses on a non-compulsory basis. Most of the educational Jurisdictions implement permanent teacher training activities throughout the academic year, in many areas and topics.

Astronomy in the curriculum: In general, the curricular designs of the different educational Jurisdictions include astronomical topics in different curricular areas, particularly those of Natural Sciences (specially in Primary level) and Physics (in secondary level). Some Jurisdictions have a specific subject in Astronomy for the orientation in Natural Sciences of secondary schools (mostly located in the last year, for students of 17/18 years old, with 120 minutes a week). Secondary schools which depend on the universities have, in general, Astronomy courses and workshops as an optional subject. The general guidelines proposed by the Federal Council of Education includes learning related to Astronomy. In general, the educational proposals contemplate the approach of some characteristics of the Solar System, eclipses, gravity, constellations, cultural astronomy, day and night and seasons, phases of the Moon, Kepler's laws, differences between stars and planets, and an introduction to astrophysics and the whole universe.

Astronomy education outside the classroom: There are several groups of amateurs with their own telescopes and domes offering lectures and workshops to groups of people of different ages and social classes. Most of the public and private universities have outreach programs. All of the professional observatories have outreach programs, web sites, and have contacts with the Media, in order to cover astronomical news. Their aim is to share with the community the knowledge of professionals who work in these universities, and to help the common citizens to understand Astronomy from a clear and easy perspective. In these outreach programs, the professional astronomers have been working with students of primary and secondary schools, rural schools, hospital schools, prison schools, etc., as well as with teachers of all educational levels. The most requested subjects are eclipses, solar system, space travel, cosmology and large telescopes. There are a few big planetariums (depending on universities) and many small and portable planetariums in all the territory of Argentina. Furthermore, there have been international workshops on education and dissemination of astronomy (4 in the last 10 years), several national conferences on education in Astronomy, and a large number of teacher training courses organized jointly by professional institutions of Astronomy and Jurisdictional authorities of Education.

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