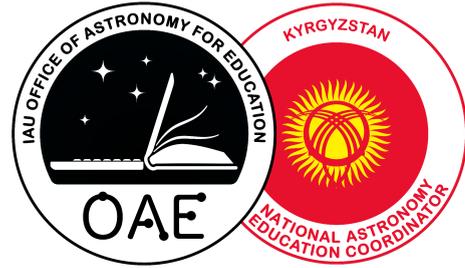


Astronomy Education in Kyrgyzstan



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: The education system of Kyrgyzstan consists of preschool, secondary, vocational, and higher education. Secondary education comprises 11 years, 9 of which are compulsory. Even though the most of education is conducted in Kyrgyz language, there has been an increase of schools teaching in both Kyrgyz and Russian languages. Apart from them there are schools teaching in Tajik & Uzbek in combination with Kyrgyz & Russian, most of which is located in the southern regions of the Kyrgyz Republic. In terms of enrollment rate in secondary general education (11 grades), schools in the capital city Bishkek and second largest city of Osh exceed 100% because of internal migration of the regional population. Average enrollment rate in secondary general education in the country as a whole has risen from 87% in 2010 to 97 in 2020. Most of the schools in the country are public - 2144, but there are 152 private schools located mostly in cities and towns. Higher education in the Kyrgyz Republic is provided by 40 public and 17 private higher educational institutions. In 2012, Kyrgyzstan adopted a two level higher education system, dividing it into 4-year Bachelors and 2-year Masters degrees.

Education facilities: Even though new schools are being built, most of the school buildings in Kyrgyzstan were built in Soviet times. Because of this some students have to study in buildings in disrepair. Public schools do not have their own transport. Class sizes in Kyrgyzstan's schools vary greatly. Schools in large cities and regional centers have overly large classes of 35-45 students in class. Village schools on the contrary lack pupils. In regard to utilities, almost all schools have running water, electricity and heating systems. However, regional and village schools do not have adequate restrooms. Most restrooms in regional schools are outside of the school building and do not have a proper sewage system.

All public schools are deficient in technical and computer facilities, but regional ones are the most disadvantaged in terms of IT infrastructure. This was demonstrated in the pandemic, making online education very hard and inefficient.

Governance and organisation: Secondary education standards and curriculum are set by the central government and little flexibility is given to schools. Schools can organize elective courses for students that can be attended as an extracurricular activity. There is no particular difference between the regions, except that there are more schools with Russian as the language of instruction in urban districts. All schools are run by the Ministry of Education. Some schools are financed by municipalities, but all the management is done by the central government.

Teacher Training: Teachers obtain Physics undergraduate degrees in universities. However, rural schools lack teachers with the appropriate degree and have to appoint teachers from other subjects. Physics teachers are not required to have an additional degree in education and can take short term courses at the Republican Institute for Training and Retraining of Educators.

Astronomy in the curriculum: In 9th grade students learn the basics of cosmology and quantum physics, which is continued in 10th grade with more advanced topics. Astronomy as a separate object appears in students' curriculum at 11th grade. At the age of 11-12 schoolchildren skim through the themes of sun and planets, but it is limited to the study of their effect on earth. In the 9th grade (age of 15-16) students learn the very basics of cosmology and quantum physics. The cosmology program includes topics like the solar system, planets, their satellites and rings, types of stars, galaxies and modern views of the universe and it's evolution. Cosmology is continued in 10th grade with more advanced topics. Astronomy as a separate subject appears in students' curriculum at 11th grade. However, it is not studied as a separate subject, but integrated into physics.

Astronomy education outside the classroom: Some schools have astronomy clubs with telescopes, where students can learn theory and practice of astronomy. They are created with the support of non profit organizations of Poland (Pod Wspólnym Niebem) and Kyrgyzstan (Institute for Youth Development). There is an extracurricular center for astronomy Astronomy Club "Sozvezdiye" [Constellation] in Republican Children's Engineering and Technical Academy "Altyn Tuyun". But it is located in the capital city and it doesn't have other offices. There are no publicly accessible facilities for astronomy education outside the schools

**The International Astronomical Union's National Astronomy Education Coordinator (NAEC)
Team for Kyrgyzstan:** Boris Nurdinov (Chair and Contact Person)

Document Coauthor: Azhara Kasmalieva

For specific information about astronomy education in Kyrgyzstan or on this document please contact the Office of Astronomy for Education (oea@astro4edu.org).