

Maintenance and Repair of Aircrafts and Aircraft Engines

Samara National Research University

Degree or qualification is awarded: **Bachelor's Diploma**

Language of study: **Russian**

Mode of study: **full-time**

Duration: **4,5 years**

Availability of free education: **yes**

Price: **199 100 RUB per year**

Programme webpage at the university website:

<https://ssau.ru/english/education/programs/677/a177ebb0-754c-11e9-9363-005056a7430c#program-desc>

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The program is aimed at professional training of highly skilled specialists for engineering departments of aviation companies and aircraft repair companies.

Samara University (formerly Kuybyshev aviation institute) trains engineering personnel for civil aviation since 1949. It was the third educational institution nationwide to open this program.

Presently the students master in-depth theoretical knowledge and practical skills in the area of maintenance of the most common types of aircrafts and their engines, manufactured both in Russia and abroad. The training extensively involves modern educational technologies and multimedia equipment, namely the unique simulators of Airbus A320 and Boeing 737 aircrafts.

The training program is exceptionally practice-oriented. Extensive practical training at each year of study ensures that the graduates are ready to engage in practical work.

Brief characterisation of the programme

The program is aimed at professional training of highly skilled specialists for engineering departments of aviation companies and aircraft repair companies.

During graduation the students develop in-depth theoretical knowledge and practical skills in the field of aircrafts and aircraft engines maintenance. The newly-acquired knowledge enables the graduates to apply their potential in various professional fields:

- production and technology;
- estimation and design;
- administration and management.

Features (advantages) of the programme

The training program is exceptionally practice-oriented. Volume of practical training in the program is 30 weeks.

From the 1st to the 3rd year of study, practical classes are held in the territory of a training airfield of Samara University, its fleet consisting of 27 aircrafts and helicopters, including the Tu-144 supersonic passenger jet.

In the course of practical studies at the training airfield the students learn how to perform mechanic operations, dismantling and repair of simple assemblies of aircraft systems, maintenance of a glider, power plant and functional systems of aircrafts. During senior years of study, the students carry out laboratory work at the training airfield with a unique opportunity to monitor performance and troubleshoot functional systems and aircraft propulsion units, including main engine start.

Practical studies over the senior years of the program are hosted by the leading aviation companies: Volga-Dnepr, Ural Airlines, S7 ENGINEERING, Ural Plant of Civil Aviation and others.

The airline trainee programs help students develop practical skills in process operations, quality control and organization of maintenance and repair of operating aviation units.

Academic programme structure (curriculum features)

The academic program consists of three blocks with an overall volume of 280 credit course units (CCU), including 10 CCU for military training. Volume of blocks is as follows:

- Disciplines (modules) – 216 CCU;
- Practical training – 45 CCU;
- State final certification – 9 CCU.

The disciplines are distributed as follows:

- 11% humanities;
- 23% natural sciences;
- 31% engineering;
- 35% specialized disciplines.

The program places a high emphasis on both general engineering disciplines and specialized disciplines.

General engineering disciplines:

- Strength of materials;
- Machine components;
- Fundamentals of reliability theory;
- Technical diagnostics.

Specialized disciplines include three cycles: aircrafts, engines, and operation.

Aircraft cycle core disciplines:

- Air mechanics;
- Flight dynamics;
- Design and strength of aircrafts.

Engine cycle core disciplines:

- Thermodynamics and heat conductance;
- Theory of aircraft engines;
- Design and strength of aircraft engines.

Operation cycle core disciplines:

- Fundamentals of operation and maintenance of aircrafts;
- Flight safety;
- Manufacturing and repair of aircrafts and their engines;
- Aircraft maintenance processes;
- Design and maintenance of specific types of aircrafts and helicopters.

The training extensively involves multimedia equipment, namely the unique simulators of Airbus A320 and Boeing 737 aircrafts.

Extensive practical training at each year of study (including 6 weeks of pre-degree practice) ensures that the graduates are ready to engage in practical work.

Future profession

Graduates commence their careers at engineering positions in airline companies, aircraft manufacturing plants and maintenance companies.

The scope of process engineering tasks of a graduate requires the following capabilities:

- maintenance and upkeep of airworthiness in order to ensure flight safety throughout all stages of operation;
- performing systematic scheduled prevention work to ensure good working order, high performance and operational readiness of aircrafts at minimum cost;
- aircraft reliability monitoring, analysis and development of best operating practices, planning of measures to prevent aviation accidents and incidents, faults and damage, in order to maintain airworthiness of aircrafts and ensure flight safety;
- Resource calculation and management ensuring processes of operation and maintenance of airworthiness of aircrafts;
- design of non-standard equipment, accessories and labor saving tools for maintenance and repair of aircrafts.

Specializations within this programme