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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Samara University has been training specialists for the gas transportation industry for over 30 years. This field of training was established in former Kuibyshev Aviation Institute (now Samara University) at the initiative of Academician Nikolay Kuznetsov.
Thus, Samara University became the first Russian educational institution to train engineering personnel in the field of aircraft gas turbine drive-assisted compressor operation.
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.
Graduates of the program are top managers, heads of branches and structural units, and senior specialists of Gazprom PJSC.

Brief characterisation of the programme
The program ensures training of highly qualified specialists for engineering services of enterprises operating power plants with aircraft gas turbine drives. The program's uniqueness is the resulting ability of its graduates to fulfill themselves both in aviation and gas industry.
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Thus, Samara University became the first Russian educational institution to train engineering personnel in the field of aircraft gas turbine drive-assisted compressor operation.
Upon graduation the students master in-depth theoretical and practical knowledge in the area of aircraft engines' ground application. 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 control performance and troubleshooting of power plants, including launches of aircraft engines.
Practical training during the senior years of study includes internship at the leading enterprises engaged in development, manufacturing, operation and repair of power plants with an aviation gas turbine drive: Gazprom Transgaz Samara LLC, Gazprom Transgaz Yugorsk LLC, PJSC Kuznetsov, NPO Saturn and others.
The trainee programs help students develop practical skills in process operations, quality control and organization of

maintenance and repair of ground power plants and their drive engines.

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 core disciplines:

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

Specialized disciplines, apart from classic aircraft, engine and operation disciplines, include the following core disciplines:

- Design of power plants with aircraft gas turbine drive;
- Design and strength of power plant engines;
- Hydraulic and gas mechanical systems of power plants;
- Special purpose equipment of compressor units;
- Operation and maintenance of power plants with aircraft gas turbine drive;
- Manufacturing and repair of power plants with aircraft gas turbine drive.

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 career at engineering positions in gas transmission companies and plants manufacturing and retrofitting drive engines for ground power plants.
The scope of process engineering tasks of a graduate involves the following:

- Maintaining reliability of ground power plants in order to ensure their failure free operation;
- Performing systematic remedial work to ensure good working order, high performance and operational readiness of power plants;
- Performing works directed at reduction of operational costs of ground power plants;
- Reliability monitoring, developing best operating practices and planning of measures to prevent failures and damage of ground power plants in order to maintain their operational readiness;
- Resource calculation and management ensuring processes of operation and maintenance of operational readiness of ground power units;
- Design of non-standard equipment and accessories for maintenance and retrofit of power plants.

Specializations within this programme