

Food Biotechnology

Ural Federal University named after the first President of Russia B.N. Yeltsin

Degree or qualification is awarded: **Master's Degree**

Language of study: **English**

Mode of study: **full-time**

Duration: **2 years**

Availability of free education: **yes**

Price: **255 100 RUB per year; 247 200 RUB per year as discounts apply.**

Programme webpage at the university website: <https://hti.urfu.ru/en/for-applicants/food-biotechnology/>

Programme curator:

Tel.:

E-mail: admission@urfu.ru

Food Biotechnology

This program is offered by UrFU Institute of Chemical Engineering

Duration of study: 2 years, full-time

Direction: Industrial Ecology and Biotechnologies

Subject: Biotechnology

Code: 19.04.01

Credits: 120 ECTS

Language of instruction: English

Program coordinators: Prof. Elena Kovaleva, PhD in Chemistry, UrFU, Institute of Chemical Engineering (Tel.: +79122642251, E-mail: e.g.kovaleva@urfu.ru); Prof. Maxim Mironov, PhD, Dr. Sci. in Chemistry, UrFU, Institute of Chemical Engineering (Tel.: +9222213555, E-mail: m.a.mironov@urfu.ru)

Entry requirements: 4-year Bachelor's degree (or equivalent) in Biotechnology, Biochemistry, Biochemical Engineering, Biology or in related fields

Program goal: Training highly qualified future specialists in production quality control, product development and innovation in food and drink industries

Curriculum:

Mandatory Courses

Economical Analysis and Line Management (1st semester, 3 credits)

Modern Methods in Biotechnology (1st semester, 3 credit)

Modern Aspects of Scientific Research (1st semester, 4 credits)

Gene and Protein Engineering (1st semester, 3 credits)

Industrial Biocatalysis (1st semester, 3 credits)

Information Technologies in Science and Education (1st semester, 2 credits)

Innovation Technologies in Foods Production (1st semester, 3 credits)

International Standards in Biotechnology and Food Safety (1st semester, 3 credits)

Physiology of Nutrition (2nd semester, 3 credits)

Design of Biotechnological Industries (2nd semester, 3 credits)

Microbiological Analysis (2nd semester, 3 credits)

Physicochemical Methods in Quality Control of Biotechnological Products (2nd semester, 3 credits)

Philosophical Problems in Science and Technology (2nd semester, 3 credits)

Molecular Genetic Methods in Food Biotechnology (3rd semester, 3 credits)

Other Courses

Project work (Project Intensive – Optimization in Biotechnological Production (2nd semester, 2 credits)

Project work (Project Practicum – Modeling of Biotechnological Processes (2nd semester, 1 credit)

Metabolic Engineering in Biotechnology (1st semester, 3 credits)

Project work (Project Practicum – Research Methods in Food Biotechnology (2nd semester, 1 credit)

Biotechnological Processing of Raw Materials of Animal Origin/ Biotechnological Modification of the Properties of

Animal Origin Raw Materials (3rd semester, 1 credit)

Biotechnology of Alcoholic Beverages/Biotechnology of Wine Production (3rd semester, 3 credits)

Yeast Biotechnology/ Innovation Technologies of Low Alcoholic Beverages Production (3rd semester, 3 credits)

General Laboratory Practicum on Processing Raw Materials of Plant and Animal Origin/ General Biotechnological Practicum (3rd semester, 6 credits)

Technology of Production of Vegetable Oils and Proteins/ Technology for Processing Oilseed Raw Materials) (3rd semester, 3 credits)

Methods for Identification of Organic Compounds Structure (Optional Course, 3rd semester, 3 credits)

Master's Student Research Work (1st semester-4th semester, 29 credits)

Industrial Attachment (Technological Practice) (2nd semester, 4 credits)

Pedagogical Practice (4 semester, 4 credits)

Pre-diploma Practice (4th semester, 3 credits)

Final examination: Oral exam and Master's thesis defense (4th semester, 9 credits)

Program highlights:

Close collaboration with research institutes, industry and employers

Access to advanced equipment for food analysis, properties of microorganisms and cell cultures

In-depth studies of biotechnological processing of raw materials, beer and wine production, yeast biotechnologies and metabolic and genetic engineering

Benefits of collaborative program

A comprehensive solution to the problem of designing food products with specific properties from the production of biologically active substances by biotransformation and biomodification up to their subsequent incorporation into recipes of new food products

Development of food products taking into account the raw material which are characteristic of the Urals and North-West regions of Russia, as well as raw materials of foreign countries, whose students are trained in this educational program

Integration of developed innovative products into the world economy and production system

Facilities

Full-equipped Microbiological and Biotechnological Laboratory Innovation Center of Chemical and Pharmaceutical Technologies, Institute of Chemical Technology

Biochemical Laboratory, Innovation Center of Chemical and Pharmaceutical Technologies, Institute of Chemical Technology

Accredited research laboratory of complex expertise and attestation of organic materials, Institute of Chemical Technology

Research Laboratory of Organic Synthesis, Innovation Center of Chemical and Pharmaceutical Technologies, Institute of Chemical Technology

Former students of the Master Program in Food Biotechnology at UrFU (2014-2021):

3 students from Rwanda and one from Iran (graduates of the academic year 2015/2016)

2 students from Pakistan, 1 student from India, 1 student from Egypt, 1 student from Ghana and one from Nigeria (graduates of the academic year 2016/2017)

4 students from Egypt, Pakistan, Ghana and Kuwait (graduates of the 2018/2019 academic years)

9 students from Egypt, Nigeria, Ghana, Columbia and Syria (2018/2020 academic years)

6 students from Ghana, Iraq, Iran, India and Salvador (2019/2021 academic years);

Career opportunities:

This program's graduates will be qualified for careers in production quality control, product and new biotechnologies development and innovation in food and drink industries

Industrial Partners

Patra, Beersfan (Yekaterinburg) and Baltika (Saint-Petersburg) (Beer and Low-alcoholic beverages manufacturing)

Zelenyi Bor (Food Products and Drinks Manufacturing Company, Yekaterinburg)

Unilk-Danone (Dairy Production Company, Yekaterinburg) and others

Contacts: Prof. Maxim A. Mironov & Elena G. Kovaleva, m.a.mironov@urfu.ru; e.g.kovaleva@urfu.ru

More information

Student Recruitment and Admission Managers

admission@urfu.ru

Specializations within this programme