

# Biology

## University of Tyumen

Degree or qualification is awarded: **Academic degree: Master**

Language of study: **English**

Mode of study: **full-time**

Duration: **2 years**

Availability of free education: **yes**

Price: **280 000 RUB per year**

Programme webpage at the university website: <https://www.utmn.ru/en/x-bio/>

Programme curator:

Tel.:

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X-BIO Institute is home to research groups dedicated to microfluidics, chemistry of natural compounds, crop production, soil biology, microbiology and antimicrobial peptides, entomology, acarology, plant pathology, and plant protection.

Graduate students study in a world-class laboratory setting at X-BIO Institute as well as on the premises of the All-Russian Institute of Plant Protection (St. Petersburg), an X-BIO key partner.

### Specializations within this programme

#### Plant Biosecurity

##### **PROGRAM OVERVIEW**

Sustainable agricultural productivity growth in the face of climate and environmental change; soil quality deterioration; antimicrobial resistance of plant pests - these are some of the major challenges facing global life scientists. The Master's Program in Plant Biosecurity offers students the expertise to understand and find solutions to these and other pertinent global biosecurity problems in a dynamic applied research setting.

##### **LEARNING OUTCOMES AND CORE COMPETENCIES**

*Familiarity with:*

- cutting-edge methods of plant protection;
- methods for chemical and biological control of phytopathogens, pests and weeds;
- the application of modern laboratory tools and information technologies to ensure plant safety.

*Ability to:*

- design and perform field and laboratory biological /ecological studies;
- plan and conduct experiments independently, using the latest laboratory equipment and instruments;
- assess phytosanitary conditions and organize plant protection activities that minimize potential environmental risks;
- design projects aimed at the restoration of biological resources;
- participate in the teaching and design of university courses.

##### **EMPLOYMENT OPPORTUNITIES**

*Potential career fields:*

- study of wildlife and wildlife patterns;
- environmental (biological, bioengineering, biomedical) protection;
- monitoring, assessment and restoration of biological resources;
- biological field research;
- processing and analysis of data using modern digital technologies Organizations and the enterprises for potential employment;
- world's leading producers of plant protection products, such as Bayer, BASF, Syngenta, Cheminova, etc.
- technical, research, and administrative positions in the fields of biosecurity, quarantine and pest management.

**MAIN RESEARCH AREAS**

- protection and provision: biosecurity;
- agribusiness: sustainability;
- biological control of phytopathogens.

**Mathematical Biology and Bioinformatics:**

This is a multidisciplinary field that studies biological systems of different organization levels. As opposed to purely mathematical fields, mathematical biology focuses on biological research data. Bioinformatics, in turn, offers proper methods and programming tools necessary for such analysis. Bioinformatics is a multidisciplinary science that combines computer sciences and statistics in studying biological data.

- Practice-oriented education in bioinformatics at one of the leading centers of ecological and agricultural biology.
- Participation in joint scientific projects with partner-universities in Western Europe and in the USA, with the possibility of international dissertation co-advising.