UNIVERSITY OF TARTU
1632

Analytical Chemistry
Measurements and calibrations
Metrology
Quality assurance

Master of Science in Engineering

APPLIED MEASUREMENT SCIENCE

What is measurement science?

Measurements must be considered in the broadest sense and have very many applications:

- Toxic metals in drinking water;
- Cholesterol level in the blood;
- Strength of construction materials;
- Protein content in wheat; and
- Octane number of gasoline.

Why is measurement science important?

The importance of measurements is enormous for the economy, society, medical sciences and much more:

- 40% of EU directives involve measurements;
- Critical economical, social, and medical decisions are based on the results of measurements; and
- The estimated direct annual spending on measurements is 80 billion EUR or 1% of the GDP of Europe.

Research at the University of Tartu:

World-leading research groups in nano-science, metrology in chemistry, materials science for high-efficiency energetics, biochemical measurements, etc.

Excellent international career prospects:

Madis Juurma
AMS graduate :

Participation in this programme has already influenced my life: I have got a very good job in the field of metrology. Another of my course mates has received several job offers from the Joint Research Centre, a Directorate-General of the European Commission.

WHY TARTU:

- Tartu is a **student town** – 20% of population are students!
- **Modern** residence halls and **affordable** accommodation fees.
- **Free wireless internet** almost everywhere.
- **Top 2%** universities by THE World University Rankings.
- Estonia has **the highest satisfaction of stay** in the eyes of international students: Erasmus Student Network Survey 2010.

Measurement Science

ams.ut.ee

Who should apply?

- Graduates with bachelor's degrees in physics, chemistry, materials science, natural sciences, engineering, technology or medicine.
- Working professionals from laboratories, accreditation bodies, inspection agencies, etc.

Curriculum structure:

Compulsory courses	45 ECTS
Elective courses	30 ECTS
Optional courses	6 ECTS
Internship	9 ECTS
Master's thesis	30 ECTS
TOTAL	**120 ECTS**

Compulsory courses:

Fundamentals of Metrology
Metrology in Chemistry
Measuring and Instrumentation
Measurement Data Processing
Practical Chemical Analysis
Quality Management
Practical Works in Physical Measurement and Calibration
Practical Works in Chemical Analysis and Metrology
Master Seminar in Measurement Science

Elective courses:

Chemical Analysis Lab for Beginners
Liquid Chromatography and Mass Spectrometry
Measurements in Biochemistry
Measurements and the Law
Economic Aspects of Measurements
Environment and Measurements
Introduction to Electroanalysis
Atomic Spectroscopy
Chemometrics
Quality Systems
Etc.

Language of instruction: English

Programme duration: 2 years

Address for inquiries:

International Student Service
University of Tartu
Ülikooli 18, 50090 Tartu, Estonia
Telephone +(372) 737 6109
Leave your question: **ivo.leito@ut.ee**

Ivo Leito,
Professor, PhD
University of Tartu
Institute of Chemistry
Ravila 14a, 50411 Tartu, Estonia
ivo.leito@ut.ee

Admission requirements:

- Bachelor's degree or equivalent in physics, chemistry, materials science, natural sciences, engineering, technology or medicine.
- Applicants must have completed 18 ECTS in physics or chemistry in prior learning periods (the minimum eligibility requirement for application is 60% of the maximum grade available).

Application process:

1. Submit the online application. The form is available at **www.ut.ee/apply-master**

   You will receive an automated confirmation of your online application submission with login information to track the status of your application.
2. Mail the required and properly prepared documents by the indicated deadline to:
   International Student Service
   University of Tartu
   Ülikooli 18, Tartu 50090, Estonia.

Applicants will receive confirmation upon receipt of their application and its status. Only complete applications will be considered by the Admission Commission, and students accepted into the programme will be notified of their admission soon after.

Documents to be submitted:

1. Online application (remember to print it out, sign at the end, and mail along with other listed documents).
2. Motivation letter – guidelines and evaluation criteria are included in the online application form
3. Completed and signed application form for recognition of prior learning
4. Official copy of the bachelor's diploma or its equivalent and Diploma Supplement (transcript/mark sheet) in the original language
5. Official translation of the bachelor's diploma and Diploma Supplement (transcript/mark sheet) into English, translation certified
6. Proof of English language proficiency. Detailed information on accepted tests and scores is available at:
   www.ut.ee/requirements
7. Copy of applicant's valid identification document

Application deadline: March 15, 2018

NB! For applicants graduating with diplomas issued later than the set deadlines (e.g., in July), please send the application form and the most recent Transcript of Records by the required deadline.

Tuition fees and scholarships:

The programme fee covers tuition, some study materials, supervision and advising of thesis preparation. The tuition fee is **€4500 /year,** but a number of tuition fee waiver scholarships and monthly stipends will be granted.

NB! This publication is meant for informational purposes only. Please refer to the programme's website for current official information.

Measurement Science