



LUT
Lappeenranta
University of Technology



Master of Science Programme
in Technology



Computational Science and Physics

SKILLS TO BUILD FUTURE TECHNOLOGICAL SOLUTIONS

Occupational trends are changing and the professions based on information processing and science-based technologies are becoming more common. Technological development, new innovations and sustainable progress rely on mathematical and scientific skills.

We at the department of Mathematics and Physics at LUT train experts in technomathematics, physics and intelligent computing to reshape processes in modern industries. Our research is a versatile combination of technical physics, materials science, scientific computing and industrial mathematics.

We solve problems in fields that range from biology to meteorology, from physics and medical applications to environmental protection, digital media and information technology. Join our Master's Programme in Computational Science and Physics and you will contribute to building a better future.

Computational Science and Physics [120 ECTS CREDITS]						
Techno-mathematics	Credit transfer for double degree students (maximum of 50 ECTS)	Process modelling and ecomathematics		Numerical methods, optimization and scientific computing	MASTER'S THESIS 30 ECTS	
		Computational materials science	Data driven modelling	Fuzzy methods and soft computing		
Technical Physics		Applied Optics	Optoelectronics	Nanophysics		
		Material Science	Microelectronics	Semiconductor and superconductor physics		
Intelligent computing		Digital imaging and image preprocessing		Machine vision and digital image analysis		
		Pattern recognition	Computer vision	Computer Graphics		
Elective studies, General studies, Minor studies, Languages						

Learning outcomes

The education is based on the latest results from scientific research, practical experimental studies and real-world applications. The teaching methods and subjects taught reflect the needs of the surrounding society. The graduates obtain a fundamental knowledge of their major subject (Technomathematics /Technical

Physics / Intelligent Computing), which is chosen already during the application process. The programme provides good problem-solving skills and a capacity to combine knowledge. We foster interdisciplinary skills, professional independence and the ambition for lifelong learning.

Career prospects

Science-based technical development and innovations are the key for success in global competition based on knowledge, high technology and science-based professions. Our graduates are trained to meet these challenges in cooperation with local, national, and international industrial partners and research institutes.

The programme provides an extensive professional foundation for careers in industrial R&D as well as the development of new products and processes for future technological solutions. Graduates also gain a firm academic foundation for postgraduate studies and independent research.

”

Incredible surroundings for studies and living

I have always been interested in mathematics. I am especially fascinated by how different applications can solve complicated problems in nearly all fields. Even though studies in the field of computational science are quite challenging, my motivation to succeed is high. I know that my studies will prepare me for solving real-life cases efficiently and quickly.

I was impressed with LUT's campus facilities and accommodation from the very beginning of my studies. In addition, I highly value the methods of teaching mathematics here at LUT. I have even gotten to know the professors personally.

LUT also offers many extracurricular activities throughout the year, but especially the dinner parties and other get-togethers with students and the faculty of the degree programme are the ones you will remember for life.



Sepideh Ahmadi

LUT student

”

The world needs young, enthusiastic and forward-looking engineers with wide-ranging scientific skills



Dr. Matti Heilö

Director of the Master's Programme in Computational Science and Physics

Many challenges in today's world are tackled by combining science, computing and innovative thinking with models. Modern industries, environmental protection and sustainable production schemes call for science-based professions.

The Master's Programme in Computational Science and Physics offers a variety of possibilities to solve technical problems with technical physics, real-world mathematics and methods for scientific computing in creative and often novel ways.

The tasks in our field often arise from industrial research and development, environmental projects and developing diagnostic methods in medicine or models in epidemiology. Knowledge of computational science is also needed when studying the behavior of materials in nanoscience, measuring the biosphere or improving weather forecasts.

Our graduates find positions in industry and various other sectors. Their duties involve product and process design, planning and strategic decision-making. The emerging information society offers opportunities for young experts in building digital services and intelligent data-intensive systems. Furthermore, our department is truly international – our students gain a network of contacts and friends worldwide.

The world needs young, enthusiastic and forward-looking engineers with wide-ranging scientific skills. If you want to help build a better world and save the planet, join us and be a leader of the next generation.

OPEN YOUR MIND. JOIN US.

Lappeenranta University of Technology (LUT) is an agile, international science university – a pioneer in combining technology and business ever since 1969. Our strategic focus areas are green energy and technology, sustainable value creation and our role as an international hub of Russian relations. LUT's operation is solution-focused and characterised by "open your mind" thinking: crossing boundaries open-mindedly, together.

WHAT

MASTER'S PROGRAMME

Computational Science and Physics

DEGREE

Master of Science in Technology

DURATION OF PROGRAMME

2 years full-time

CREDITS

120 ECTS credits

HOW

WHEN

Annual application period.

PROCESS

The application process begins online.

For further information please see the LUT web site at

www.lut.fi/masters

ENTRY

GENERAL ELIGIBILITY

An appropriate Bachelor's degree or an equivalent qualification. For more detailed information please see www.lut.fi/masters.

LANGUAGE REQUIREMENTS

Accepted language tests and their minimum scores: Academic TOEFL (65 iBT/500 PBT), Academic IELTS (5.0), PTE Academic (46), CAE or CPE (level A, B or C). For information about groups exempted from the language test requirement please www.lut.fi/masters.

INFORMATION

www.lut.fi/csp

ADMISSION INQUIRIES

admission@lut.fi

Phone +358 40 132 5239

WHERE

Lappeenranta University of Technology (LUT)
Skinnarilankatu 34
FI53851 Lappeenranta
Finland



LUT
Lappeenranta
University of Technology