

Welcome New Doctoral Students!

Doctoral Programme in Engineering and Natural Sciences, TLTO

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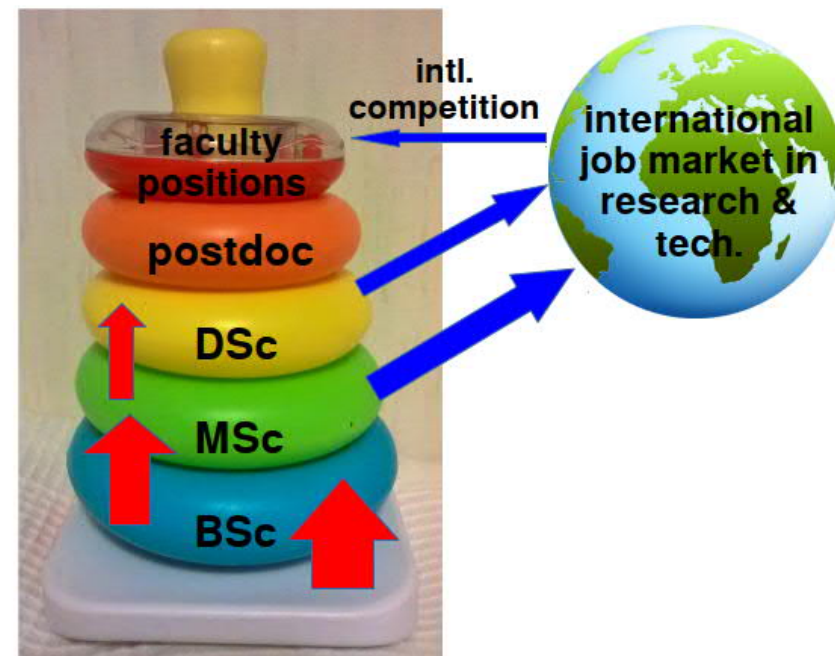
19.9.2022

WILL YOUR RESEARCH
MAKE THE WORLD
A BETTER PLACE?



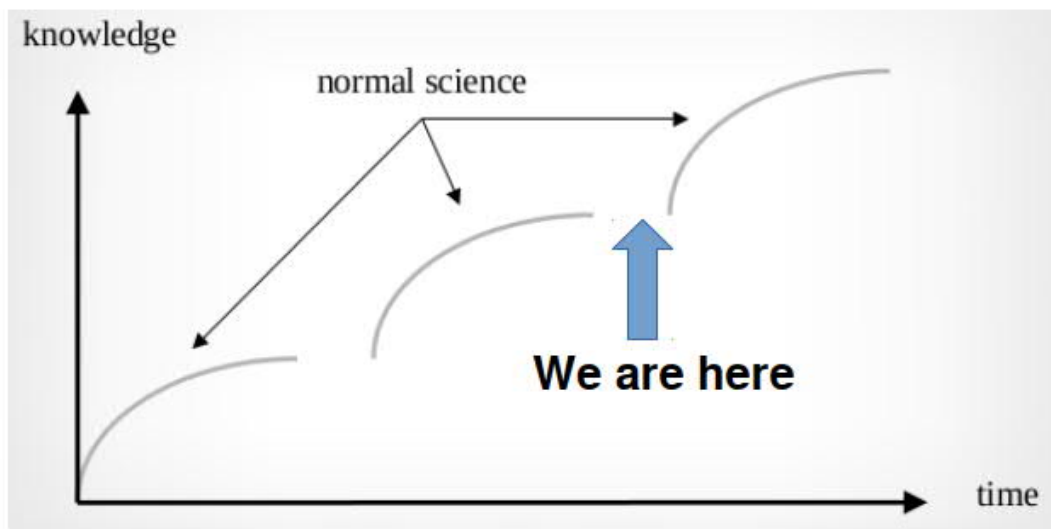
Why a PhD degree?

- In academia it's a must, a driver's license of a scientist.



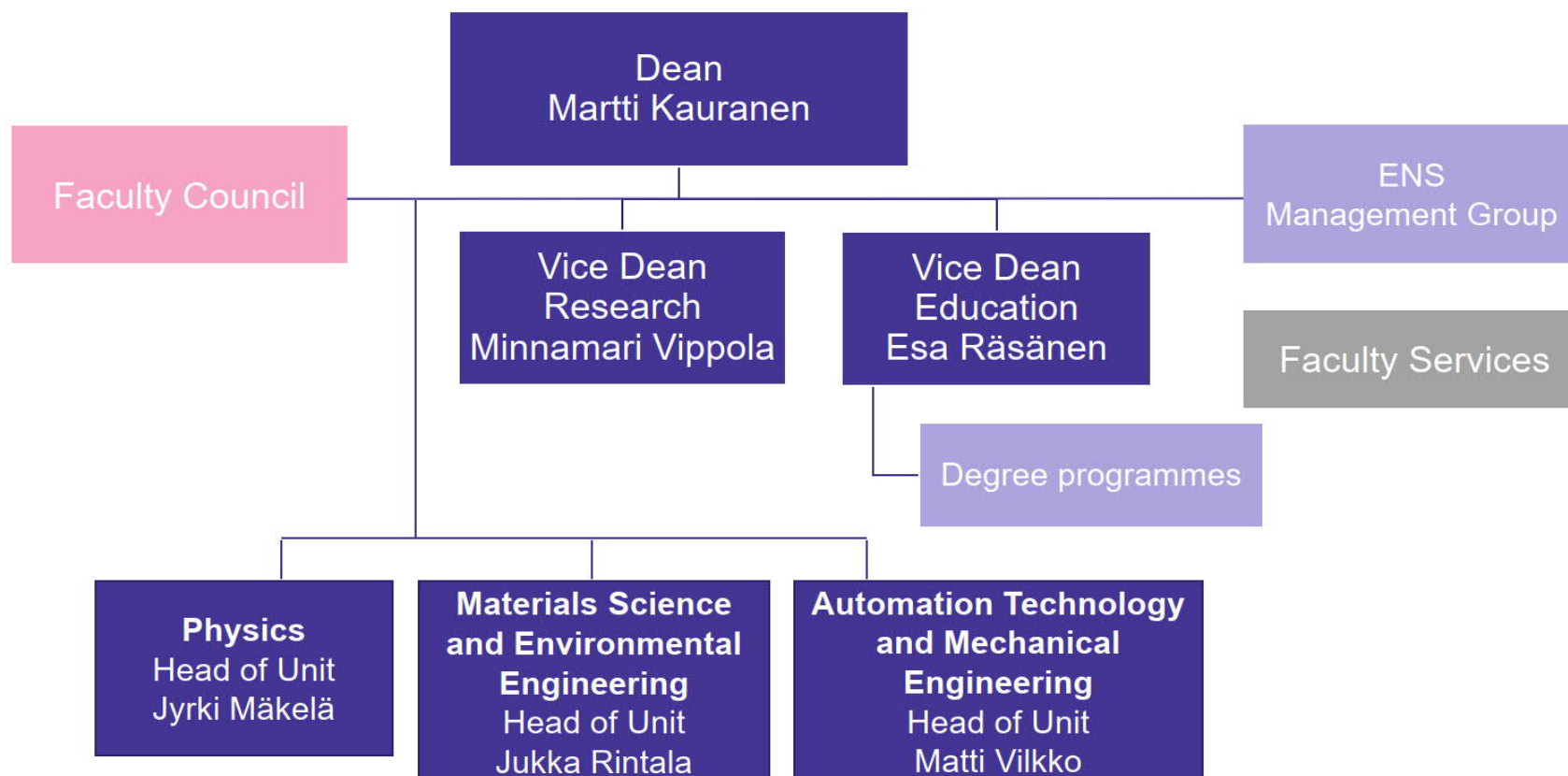
Why a PhD degree?

- In industry it has increasing value in the present societal revolution and polarization of jobs.



According to T. Kuhn,
*The Structure of
Scientific Revolutions*,
1962

Faculty of Engineering and Natural Sciences (ENS)



Doctoral Programmes (ENS)

- **Doctoral Programme in Engineering and Natural Sciences, TLTO**
 - Bioengineering
 - Energy Technology
 - Physics
 - Chemistry
 - Mathematics
- **Doctoral Programme in Engineering Sciences, TTITO**
 - Automation Science and Engineering
 - Mechanical and Production Engineering
 - Materials Science and Engineering

Administration (ENS)

- Faculty council
 - Decides of grading of the thesis
- Dean
 - Student admissions decisions
 - And accepts...
 - Pre-examiners for the dissertations
 - Permissions to publish the dissertation and defence proposals
 - Completed degrees

TLTO Doctoral Committee



Mika Valden, Professor, Physics



Matti Rissanen, Associate Professor (tenure track), Physics



Marika Kokko, Associate Professor (tenure track), Bio and circular economy



Alex Berdin, Doctoral Researcher, Physics

Anna Hämäläinen, Doctoral Researcher, Environmental Technology



Esa Räsänen, Vice Dean for Education, TLTO Programme Director, Professor, Physics



Nikolai Tkachenko, Professor, Chemistry

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graph TD; TU[Tampere University Board] --- P[President]; P --- AB[Academic Board]; P --- VP[\"Vice President, Research\"]; P --- Prov[Provost]; P --- VPE[\"Vice President, Education\"]; VP --- D[Deans]; D --- MG[\"Management Group\"]; AB --- SC[\"Science Council\"]; AB --- EC[\"Education Council\"]; AB --- SIC[\"Societal Interaction Council\"]; SC --- FC[\"Faculty Councils\"]; EC --- FC; SIC --- FC
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The organizational chart of Tampere University is structured as follows:

- Tampere University Board** is connected to the **President**.
- The **President** oversees the **Academic Board** and three Vice Presidents: **Vice President, Research**, **Provost**, and **Vice President, Education**.
- The **Vice President, Research** oversees the **Deans**, who in turn oversee the **Management Group**.
- The **Academic Board** oversees three councils: the **Science Council**, **Education Council**, and **Societal Interaction Council**.
- All three councils (Science, Education, and Societal Interaction) oversee the **Faculty Councils**.

Degree structure, scope and contents

- Required elements of the doctorate degree are:
 - Completing of post-graduate studies
 - Demonstrating independent, critical thinking with regard to the field of research
 - Writing a dissertation and publicly defending it
 - The number of publications depends on their quality and the contribution of the candidate. Compilations typically comprise 3-5 publications, which have appeared in internationally recognized peer-reviewed journals.
- Studies and dissertation form a coherent entity. Contents of study modules are planned on individual basis together with the responsible supervisor.
- **In TLTO studies form a total of 40 credits:**
 - **general academic competences (at least 10 credits)**
 - **discipline- and field-specific studies (at least 25 credits)**
- Apart from regular postgraduate courses and seminars, the programme accepts credits from literature exams or reviews, studies completed outside Tampere University, summer/winter schools, and assignments related to transferable skills in practice.
- Degree requirements must be confirmed by the doctoral committee or the head of the doctoral programme. This needs to be done when the studies (min. 40 cr) are completed or almost completed.

TAU.TRI.102 Orientation to Doctoral Studies course

- The courses need to be completed at an early stage of studies.
- This course is an introduction to doctoral studies at Tampere University, especially in the field of engineering and technology.
- The extent is 4(+1) credits. 1 cr course in research ethics, e.g. TAU.TRI.203 (“Research Ethics I”, lecture-based implementation) or TAU.TRI.204 (“Research Ethics I”, online implementation).
- After completing this course, the new doctoral student is familiar with the study and research environment of Tampere University. The student knows the requirements for writing a doctoral dissertation at Tampere University. The student is familiar with the general features of different types of doctoral dissertations (a monograph and a compilation thesis). The student knows how to prepare a research plan and conduct a literature review. In particular, the student knows how to communicate the current state of knowledge and research gaps in his/her research field, justify his/her research goals and methods, and commit to a feasible doctoral research project.
- The student is familiar with the core ideas of philosophy of science, scientific writing, and research ethics. The student is aware of different career paths after a doctoral degree. The student has taken an active approach to collaboration with the supervisor(s) of the doctoral studies.

Skills development as a doctoral student

Core competence understand complex information and synthesize it obtain results through a creative scientific process draw scientific conclusions and defend them propose and specify relevant research questions and problems recognize the larger context and societal impact of the research ability to apply scientific skills across different fields ability to work Independently / self-confidence of reached knowledge & skills	Communication skills abilities to operate in an international research /industrial community ability to write and co-write scientific publications ability to report results to the scientific community ability to report research beyond the scientific community (outreach) oral presentation skills basic evaluation skills (publications, reports, theses, ...) social & networking skills
Scientific practices knowledge of the scientific method recognition of essential publication channels and practices knowledge of research ethics and appropriate conduct of research information retrieval skills knowledge of an academic career path	Other skills ability to give, accept and utilize justified criticism project management skills, incl. financial issues supervision and tutoring/mentoring skills (MSc & BSc students, trainees) familiarity with industrial environment / public sector , understanding of career path basic entrepreneurial skills self-management, personal development

Annual Enrollment



- Take care of the annual enrollment
- Students who fail to enroll lose their right to pursue studies at TUNI.

Enrollment (as attending) needed, e.g.

- for course sign up
- for the dean / faculty council to process and approve items and documents (e.g. application for pre-examiners, approval and grading of the dissertation)

The structure of the pages in the Student's handbook

- 1) General instructions
- 2) Programme-specific instructions

Curriculum

<https://www.tuni.fi/studentguide/curriculum/course-units?year=2021>


Guidelines for Doctoral studies in the Student's handbook

<https://intra.tuni.fi/en/handbook/4646/5833?role=student&university=uni>

Student's handbook | Doctoral studies | Planning studies and guidance

Curriculum of doctoral studies

Edit in Content machine

☐ Tampere University  Personnel + Student

☐ Tampere University

The curriculum is the most important instrument to guide your studies. The curriculum describes the objectives, structures and contents of the degree. Updated annually, the teaching schedule provides information on teaching. The correspondences between the previous and the current curricula are presented in the data on each course unit.

[Curriculum](#)

Doctoral Programme of Computing and Electrical Engineering (DPCEE)	+
Doctoral Programme in Built Environment (RYTO)	+
Faculty of Social Sciences (SOC)	+
Faculty of Education and Culture (EDU)	+
Doctoral Programme in Engineering and Natural Sciences (TLTO)	+
Doctoral Programme in Business and Technology Management (TOTO)	+
Faculty of Information Technology and Communication Sciences (DPMCP, DPIL, DPHAT, DPLA)	+
Faculty of Medicine and Health Technology (MET)	+
Doctoral Programme in Engineering Sciences (TTITO)	+

Follow Up on Progress

- Mandatory questionnaire sent to all doctoral students in the programme. Has been carried out annually, except if the Doctoral Education Survey has been carried out for all the doctoral students of Tampere University.
- E.g. questions on progress, funding situation and supervision practice
- Helps to develop the doctoral programme



Events

- Monthly Morning Coffee Sessions for Doctoral Students
- Occasional events: e.g. movie afternoon, football tournament
- Programme specific events (e.g. PhDay)
- Education Specialists send info messages to the programme's email list





Student Union of Tampere University

- Membership for doctoral students
<https://trey.fi/en/for-members/membership/doctoral-students>
- The associations and the student representatives nominated by the student union make sure the students' voices are heard in decision-making on every level of the administration of the University. Student representatives also influence in various bodies and working groups at TAU and other interest groups
- The membership of a doctoral student does not entitle to the services of Finnish Student Health Service (FSHS), travel discounts by VR and Matkahuolto, or Kela's student meal discounts
- The student-owned restaurant chain Juvenes offers lunch at a reduced price for doctoral students. Doctoral students are entitled to SportUni membership if they are student union members. Additionally, doctoral students may use the consultation services of the Specialists of TREY and rental services of TREY.

In case of trouble or for questions, please ask

- Responsible supervisor / second supervisor
- Peers, colleagues
- Education Specialist Anna Nykänen
- Head of the Doctoral Programme Esa Räsänen

