

# Doctoral Orientation Days – Electrical Engineering

Monday 1 December 2025 (in Maarintie 8, room AS4)

- 14.30-14.40 Dean Jussi Rynänen
- 14.40-14.50 Chair of the Doctoral Programme Committee Vesa Välimäki
- 14.50-15.20 Planning Officer Emma Holmlund
- 15.20-15.25 Doctoral student Maksim Sitnikov
- 15.25-15.30 Change to the ICT laboratory
- 15.30-16.00 Visit to the ICT laboratory



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# Electrifying the future

Aalto University School of Electrical Engineering

High quality research and  
education with impact

**#1**

**in Finland**  
(QS World University  
Rankings 2024)

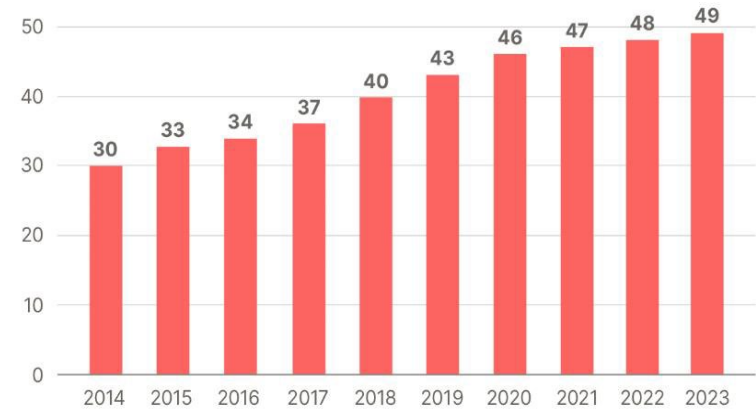
**#109**

**globally**  
(QS World University Rankings 2024)

**A!**

**#47**

**most international  
university in the world**  
(THE Most International  
Universities Ranking 2023)



International academic faculty (%)

<sup>2</sup>  
**#21**

**in university-industry  
collaboration globally**  
(Leiden Ranking Industry  
Collaboration 2023)

# Key figures

~ 250 B.Sc. Degrees  
~ 250 M.Sc. Degrees  
40-60 D.Sc. Degrees

~ 2100 full time students  
~ 230 doctoral students  
~ 700 staff  
~ 60 professors

~ 25M€ external funding  
including ~10M€ from  
non-academic partners

A!





# Aalto University

## School of Electrical Engineering

We shape a better future by:

- Cutting edge **health technology**
- More sustainable and intelligent **energy solutions**
- Efficient and reliable **wireless communication**
- Advances in **space technology**
- **Human-centric information technology** – speech, audio, and interfaces
- **Automation and robotics**
- Basis for new innovations with **high-class basic research**

**A!**

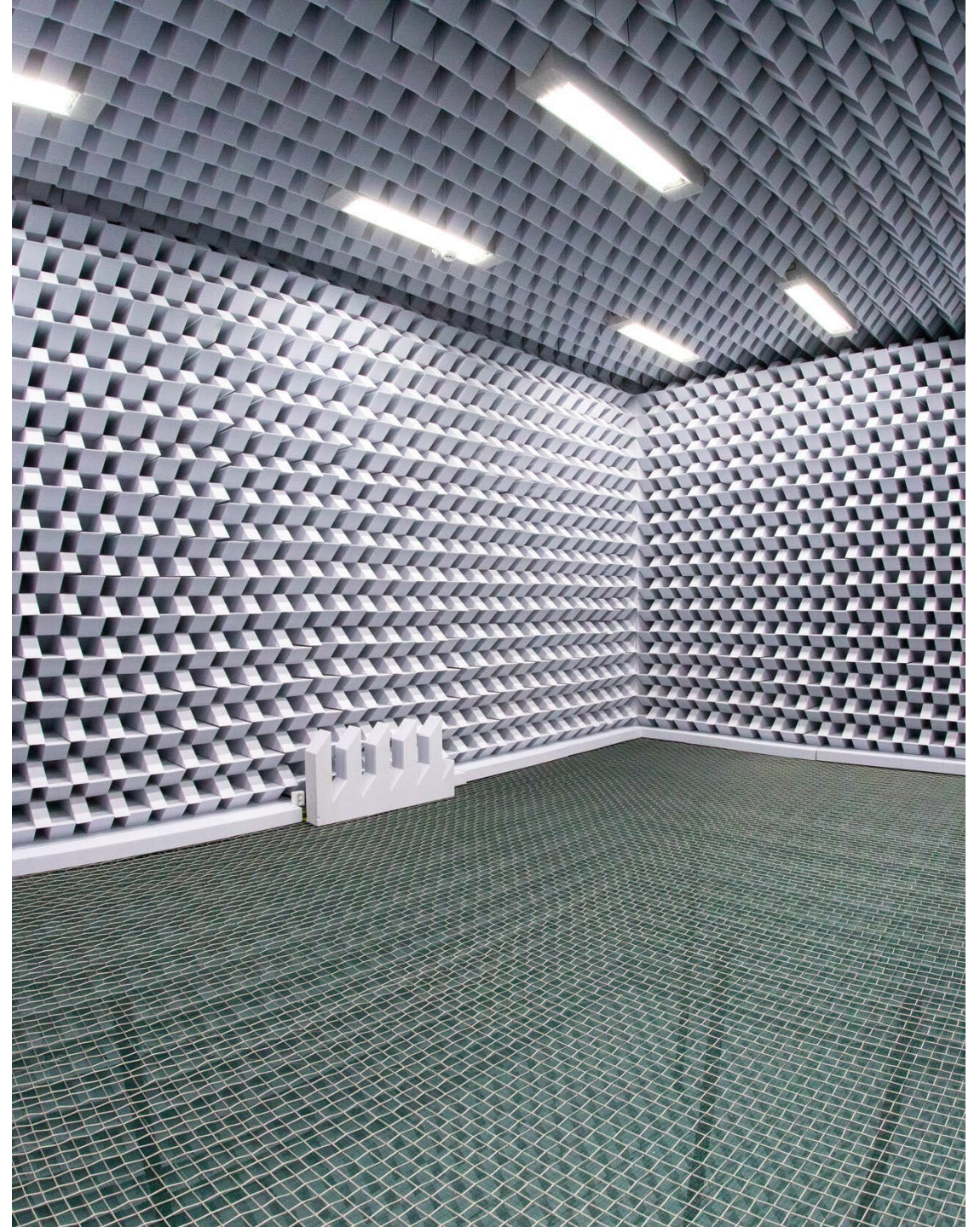




# Aalto ELEC Infrastructures

- Aalto Nanofab
- Metsähovi Radio Observatory
- Microelectronics, Digital and Autonomous Systems (MIDAS)
- Electrical Power and Energy (EPE)
- Human Centric Electrical Engineering (HUCE)

**A!**



# What is important?

**What is your dream, where do you aim to be after 4 years?**



**Be open-minded and venturesome**

**Be enthusiastic, network with colleagues, balance worklife and free time**





**A!**

—

Kiitos  
**aalto.fi**



# Welcome to the School of Electrical Engineering

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**Prof. Vesa Välimäki**

**Chairman of the ELEC Doctoral Programme Committee**

**Vide Dean for Research in ELEC**

**Professor of audio signal processing**



Aalto University  
School of Electrical  
Engineering



**December 1, 2025**

# *Doctoral studies in a nutshell*

Doctoral Programme in Electrical Engineering



Aalto University  
School of Electrical  
Engineering

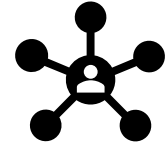
Emma Holmlund

1.12.2025

# Welcome to doctoral studies in ELEC!



- Doctoral studies are fun and interesting, but also demanding
- More like a job than studies, compared to BSc and MSc studies
- You will build up a network with contacts in your field.
- Remember to enjoy!
  - Be curious
- Remember to celebrate achievements and take care of your wellbeing!





# Division of services in doctoral studies

## Doctoral Programme (ELEC)

- Doctoral study right
- Registering individual studies
- Confirming new supervising professor / thesis advisor /other change in study right
- Pre-examination and graduation
- Incentive scholarships

## Aalto University

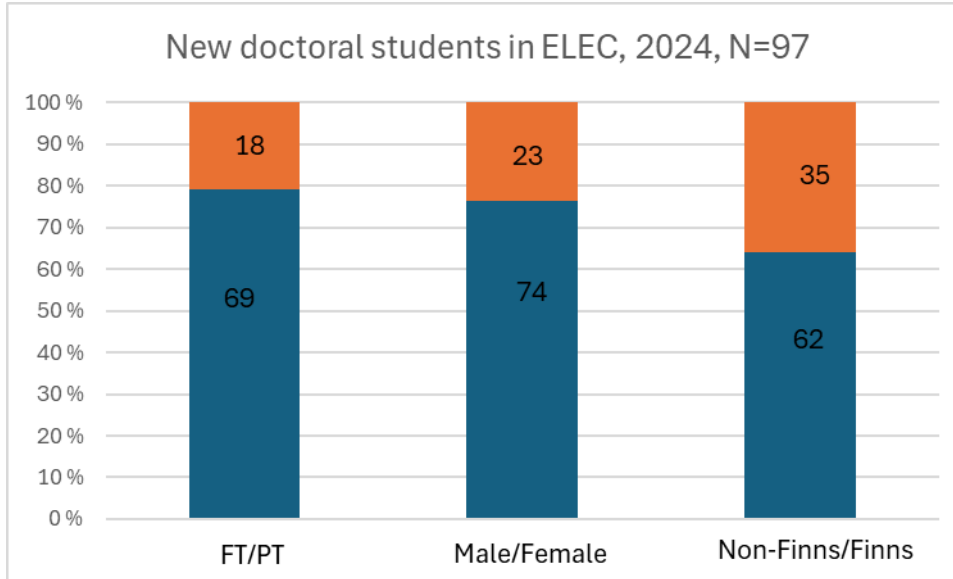
- Pedagogical training
- Research and Innovation Services
- Career services
- Language Centre

## Departments (EEA, ELE, DICE)

- Supervision and guidance
- Courses in the research field
- Summer schools, conferences
- Research work
- Work contracts (HR)
- Funding

# ELEC Doctoral programme

# Doctoral Programme in Electrical Engineering



## 2024 in numbers:

- 97 new doctoral students
- About 420 active attending doctoral students in ELEC
- 64 doctors (270 total from Aalto)



# Administration of ELEC doctoral programme

## The Doctoral Programme Committee (DPC) (2023–2025)

**Prof. Vesa Välimäki (DICE, chair)**

**Prof. Simo Särkkä (EEA)**

**Prof. Matti Lehtonen (EEA)**

**Prof. Keijo Nikoskinen (ELE)**

**Prof. Yu Xiao, (DICE)**

**Doctoral Student Maksim Sitnikov (year 2025)**

- Evaluates applications for study right
- Appointing pre-examiners and opponents, deciding on permission for public defence
- Evaluation of theses



## Learning Services

**Miika Remahl, coordinator**

(the early phase of studies)

- Courses, credit plan, studies outside Aalto and credit transfer
- DPSP (doctoral personal study plan)
- Incentive scholarships

**Emma Holmlund, planning officer**

- Pre-examination process

**Suvi Katajamäki, coordinator**

(the end phase of studies)

- Changing supervising prof., advisors, etc
- Final confirmation of studies (before pre-examination)
- Permission for public defence to graduation process

<https://www.aalto.fi/en/programmes/aalto-doctoral-programme-in-electrical-engineering/contact-information>

# **The Doctoral Programme Committee (DPC) (2026–2028)**

**Prof. Vesa Välimäki (DICE, chair)**

**Prof. Sergiy Vorobyov (DICE)**

**Prof. Simo Särkkä (EEA)**

**Prof. Valeriy Vyatkin (EEA)**

**Prof. Zachary Taylor (ELE)**

**Doctoral Student Zhenhan Wang (year 2026)**

# Practicalities



# Important to remember

- **Doctoral studies** at Aalto.fi (search: aalto doctoral education hub, or direct link: <https://www.aalto.fi/en/doctoral-education>



- In the left navigation:

- Doctoral studies
- Doctoral research
- Evaluation and graduation

- In the left navigation, choose Doctoral programmes/ Electrical Engineering (ELEC): <https://www.aalto.fi/en/programmes/aalto-doctoral-programme-in-electrical-engineering>
- ELEC specific matters



**Enrolment EVERY YEAR until graduation:**

- **OILI**, <https://oili.csc.fi/?lang=en>



# How will we keep you updated with the current issues?

- We will use your aalto-e-mail address
- Your Aalto e-mail has been added to the following e-mail lists:
  - For all doctoral students at Aalto: [aalto-doctoral-students@list.aalto.fi](mailto:aalto-doctoral-students@list.aalto.fi)
  - For doctoral students in ELEC: [doctoralcandidates-elec@list.aalto.fi](mailto:doctoralcandidates-elec@list.aalto.fi)
- **(Part-time students** can redirect the e-mails to some other address but not employees of Aalto):

<https://www.aalto.fi/en/services/redirecting-emails-outside-of-aalto-university-students-only>

# Doctoral Personal Study Plan (DPSP)

Tohtoriopiskelijan henkilökohtainen  
opintosuunnitelma (T-HOPS)

# Doctoral Personal Study Plan (DPSP)

<https://www.aalto.fi/en/doc-toral-education/doctoral-personal-study-plan-dpsp>

**DPSP consists of the following documents:**

**1.Sisu credit plan, 30 ECTS**

**2.Research plan**

**3.Supervision plan**

**4.Financing plan**

**5.Career plan**

**Uploaded to MyStudies** (mystudies.aalto.fi)

**Should be updated when changes occur,  
checked two times a year.**

# Sisu credit plan (sisu.aalto.fi)

Research field studies

General research studies

Extra curricular studies

# Research field studies at ELEC:

## Courses or other attainments that support your research

- **Courses organized by the departments**
  - Doctoral level studies (e.g. ELEC-L1234 D)

### Postgraduate Course in Micro and Nanosciences II V D

ELEC-L3221 10 ects English starts in: Apr 26, 2021

### Microwave Engineering II D

ELEC-E4430 5 ects English starts in: Mar 22, 2021

- **Individual study attainments**
  - Summer/winter schools ELEC-L0280
  - Literature (book exam etc.) ELEC-L0260



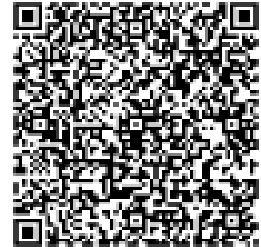
# General Research Studies

- **Planning and follow-up of studies**
  - Introduction to Doctoral Studies, ELEC-L0902 (highly recommended)
  - Midterm review, ELEC-L0950 (from 1.1.2026)
- **Working life skills**
  - **Research Ethics for Doctoral Students, LC-L1000 (compulsory)**
  - writing grant applications, business skills
- **Pedagogical studies**
- **Scientific writing and communication**
  - Courses offered by the Language Centre
  - No language courses, except for 6 ECTS of Finnish or Swedish
- **Individual studies**
  - Teaching at courses ELEC-L0230
  - Guidance of B.Sc. or M.Sc. Theses ELEC-L0220 / ELEC-L0225

# The midterm review

- **Compulsory if you have a working contract at Aalto, highly recommended for all doctoral students.**
- **Follow-up of your doctoral studies at 12-20 months after the start of your first working contract.**
- **Presentation on your achievements and plan until graduation**
- **More info at our webpage:**

<https://www.aalto.fi/en/programmes/aalto-doctoral-programme-in-electrical-engineering/midterm-review-for-doctoral-students-in-the-school-of-electrical-engineering>



# Doctoral thesis

# Requirements of doctoral theses at Aalto University



- A doctoral thesis must follow **good scientific practices** and **ethically sustainable principles**
- A doctoral thesis must contain **new scientific findings** in its area of research
- Research methods and new research findings are to be presented clearly and they need to **withstand examination**
- The **student's own contribution** to the research has to be sufficient and clearly stated

<https://www.aalto.fi/en/doctoral-education/doctoral-thesis-at-aalto-university>



# Forms of doctoral theses (1/2)

## 1. Article based thesis

- Consists of a **summary** (30-60 pages) and **publications** or manuscripts submitted for publication
  - journal or conference articles of high quality
  - accepted through a peer-review process
  - **at least one** of the articles have to be published or accepted for publication when submitting the thesis for pre-examination
- **Number of publications required** depends on:
  - the extent, scientific significance and quality of the publications
  - the student's independent contribution
  - recommendation: **3-5 full publications**

<https://www.aalto.fi/en/programmes/aalto-doctoral-programme-in-electrical-engineering/thesis>



# Forms of doctoral theses (2/2)

## 2. Monograph

- An independent book (no more than 300 pages), does not contain journal articles
  - a researcher's personal work
  - you can use your own results in articles you may have published. Remember to include citations to the articles



# Supervision

# Supervisors

- During admission the Doctoral Programme Committee has appointed a supervising professor and at least one thesis advisor for every doctoral student
- If you don't have a separate thesis advisor, your supervising professor has both roles
- Supervision plan – agreement on who does what.

# Highlights of the rights and responsibilities - student

## Rights of a doctoral student:

- to receive **guidance** on a regular basis
- to **study** in accordance with the doctoral personal study plan (DPSP)

<https://www.aalto.fi/en/doctoral-education/supervision-of-doctoral-studies#2-roles-and-responsibilities>



## Responsibilities of a doctoral student:

- to familiarize yourself with the **ethical principles of scientific research** and to act in compliance with the guidelines on good scientific practice.

<https://tenk.fi/en/research-misconduct/responsible-conduct-research-rcr>



- to carry out research **independently** and in a self-directed manner in accordance with the research plan

# Responsibilities - supervising professor

- to provide **guidance** in the execution of the research work
- to **guide in publication writing** and to encourage the doctoral student to actively publish the research results
- to **follow up** the progress of the doctoral student on a regular basis
- to ensure that full-time doctoral students are **not burdened excessively** with duties other than doctoral research work

<https://www.aalto.fi/en/doctoral-education/supervision-of-doctoral-studies#2-roles-and-responsibilities>



# What if something goes wrong?

- <https://www.aalto.fi/en/doctoral-education/doctoral-student-wellbeing-and-support>
- <https://www.aalto.fi/en/study-at-aalto/support-for-challenges-during-your-doctoral-studies>



If there  
are  
problems  
with  
guidance:

- **Don't be alone, ask for help!**
- **Talk first with:**
  - your supervising professor and/or thesis advisor
    - If you don't have a separate thesis advisor, ask for one
- **If there are still problems, talk with:**
  - Head of the Department
  - HR of your department
  - us in the doctoral programme
  - An ombudsperson or study psychologist

# Scholarships



# Incentive scholarships for doctoral students at Aalto University/ELEC



Valid until 31.12.2029: <https://www.aalto.fi/en/doctoral-education/incentive-scholarships-for-doctoral-students>

- 500 euros
  - for the **first two scientific articles** to be included in the doctoral thesis.
- 2000 euros
  - for completing the doctoral degree **within exactly four years of being admitted** to the doctoral programme **OR**
  - for completing the doctoral degree by the end of the calendar year the **doctoral student turns 30**.
- The applications have to be submitted within six months of the fulfillment of the scholarship criteria
- The exact criteria will be updated on the webpage.

# Tips

# Tips for your doctoral studies



## Be goal-oriented and committed

Learn to prioritize and use your time



## Take responsibility

You are responsible for your doctoral studies!



## Ask for help and guidance when you need it



New PhD student advice - from a fellow doctoral student

# Emergency procedures – in addition to 112



AaltoAPUA helpline 050 46 46 462



More information:

<https://www.aalto.fi/en/services/emergency-procedures>

**Thank you!**

**Good luck with your doctoral studies!**

**Questions:**

**emma.holmlund(at)aalto.fi /**

**suvi.katajamaki(at)aalto.fi /**

**miika.remahl(at) aalto.fi**

# Feedback

On your phone/computer go to:

<https://premo.aalto.fi/orientationelec>





## About me

- Doctoral Researcher (Ph.D. student)
- Doctoral Thesis - **Design and Analysis of compact high-speed high-power electrical machines** (Aalto University, Computational Electromechanics)
- Master thesis - **Design and finite element analysis of a high-speed synchronous reluctance machine** (Saint-Petersburg Electrotechnical University 'LETI', Russia; Advisor – Anouar Belahcen, Aalto University)
- Work experience:
  - **Technical Support Specialist** (Department of Electric Drives), Siemens, 07.2021-04.2022
  - **Lab Assistant for Electrical Machines** ('LETI'), 11.2019-02.2020

# Duties of the student member as a part of the DPC

- Selection of new doctoral students for the Dean
- Appoint pre-examiners, opponents
- Develop the curriculum of doctoral education
- Doctoral thesis award winners for the Dean

## Your possible contribution to the work of the DPC

- Welcome to propose new ideas about the curriculum and school development
- Welcome to share our decisions and discuss it
- *Welcome to make your thesis as good as possible*

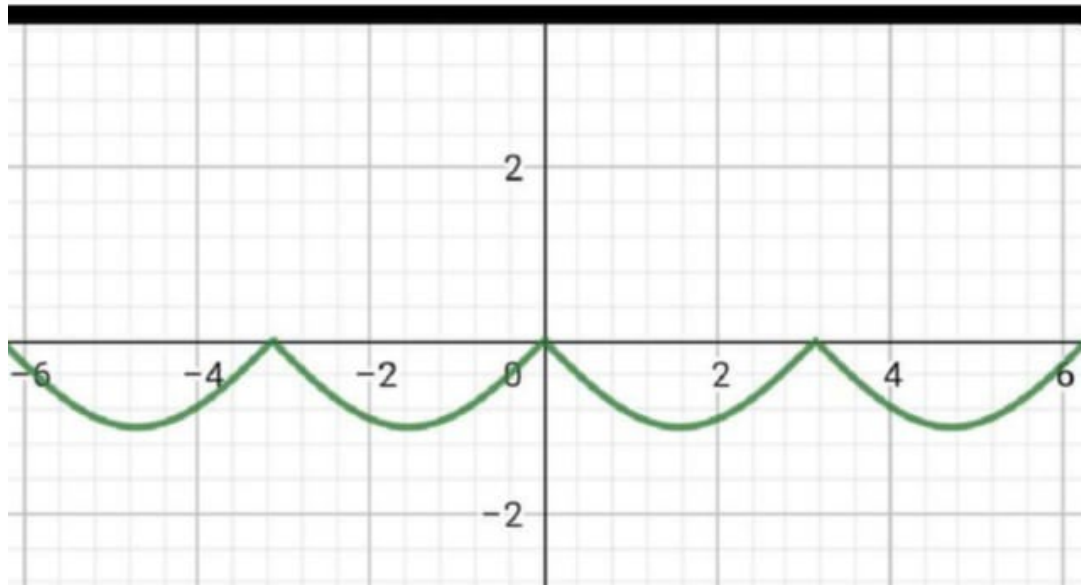


**"Life is like a sine function.  
It has its ups and downs."**

— some random great mathematician

The sine function that determines the ups  
and downs of my life:

$$y = -|\sin(x)|$$



S



# My contacts

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- Office: 3547

