

*2019-2020*



**UEEF //**  
**SMART**  
**START**

**PHOTONICS**

# Checklist for new students

Apply for  
a residence permit  
[migri.fi](https://migri.fi)



Participate in  
the orientation  
programme  
[kamu.uef.fi/orientation](https://kamu.uef.fi/orientation)



Check course  
information on  
[weboodi.uef.fi](https://weboodi.uef.fi)

Find online guides in  
[kamu.uef.fi](https://kamu.uef.fi)

Register as  
a student at UEF in  
[studyinfo.fi](https://studyinfo.fi)  
or in person

Apply for housing  
[joensuunelli.fi](https://joensuunelli.fi)  
in Joensuu, and  
[kuopas.fi](https://kuopas.fi)  
in Kuopio



## Other important websites

- ▶ Student Union (ISYY) [isyy.fi](https://isyy.fi)
- ▶ Language Centre [uef.fi/kielikeskus](https://uef.fi/kielikeskus)
- ▶ Library [uef.fi/kirjasto](https://uef.fi/kirjasto)
- ▶ Student and Learning Services [uef.fi/opintopalvelut](https://uef.fi/opintopalvelut)
- ▶ Campus restaurants [uef.fi/services/restaurants](https://uef.fi/services/restaurants)
- ▶ Finnish Student Health Services (YTHS) [yths.fi](https://yths.fi)

## *Schedule of the first week*

### **TUESDAY 3 SEPTEMBER**

TIME	PLACE	PROGRAM
9:00 – 16:00	Carelia Building, C1	Orientation program for new students

### **WEDNESDAY 4 SEPTEMBER**

TIME	PLACE	PROGRAM
9:00 – 12:00	Carelia Building, C1	Orientation program for new students
12:00 – 15:00	Metria lobby	Information Market for new students

### **THURSDAY 5 SEPTEMBER**

TIME	PLACE	PROGRAM
9:00 – 11:00	Carelia Building, C1	Orientation program for new students
15:30-18:00	in front of Carelia building	Campus Happening by Student Union ISYY

# *Welcome to study Photonics at UEF*

## **PHOTONICS CHANGES THE WORLD!**

Photonics and light-based technologies play a central role in all the areas of modern life, including telecommunications, biomedicine, health care, energy and environment, manufacturing, and consumer products. Photonics is the future technology that focuses on the generation, detection, and management of light, enabling the use of light in different areas that are essential to society and the economy.

A degree in photonics can lead you to an exciting career in many different fields including information and communication technology, lighting and manufacturing, image analysis, security, defense, space, life sciences, and medical technology. The industry being active in these fields has an extraordinary demand for highly qualified professionals.

” *Photonics of UEF offers every advance laboratory facilities with very helpful teaching as well. Courses offered by Photonics department of UEF are standard enough to know every basic things of Photonics.*

Najnin Sharmin, Banladesh

## **LEARNING OBJECTIVES**

The objective of Master's degree in photonics is to give the students expertise to modern optics and photonics at theoretical and experimental level. This contains the ability to understand optical phenomena, design and analysis of optical systems, fabrication methods of photonics structures, and ability to scientific and technical communication in photonics. This all gives the capability to work in photonics related companies as an expert and developer-, and to continue to PhD studies in photonics. The education is based on high-quality photonics research in the department. MSc degree from the program qualifies the graduates for PhD studies in the University of Eastern Finland, elsewhere in Finland or in the universities worldwide.

Joensuu area hosts several optics companies, UEF-generated spin-offs and others, as well as the headquarters of both Photonics Finland (the Finnish photonics association) and the European Optical Society (EOS).

***EOS Finland Student Club:***

***(Facebook: <https://www.facebook.com/groups/622959111079128/?fref=ts>)***



” *In two years you get to learn from very basics to some of the most advanced aspects of Photonics in an encouraging and international ambience under guidance of true experts of this field.*

Subhajit Bei, India

# *Academic year and the study periods*

At the University of Eastern Finland both Autumn and Spring semesters are divided into two periods. We have Periods 1 and 2 during the autumn semester, and periods 3 and 4 during the spring semester.

**The periods during 2019–2020 are:**

- Period 1: September 2 - October 25, 2019
- Period 2: October 28 - December 17, 2019
- Period 3: January 7- March 13, 2020
- Period 4: March 16 - May 22, 2020

Please see the Photonics program **study timetable** for the academic year 2019-2020 here:

<http://www.uef.fi/web/mdp-photonics/courses>

## *Degree structure*

### **STUDIES**

The Master of Science (MSc) in Photonics is a two-year full-time study program. Master's degree consists of 120 ECTS credits of studies in one main subject, photonics. One ECTS credit corresponds to 25-30 hours of work.

**The degree consists of:**

Courses and laboratory practices 90 ECTS

MSc Thesis 30 ECTS

Total 120 ECTS

### **STUDY MODULES IN THE MASTER'S DEGREE PROGRAMME IN PHOTONICS**

- General studies form the basis for the further studies.
- Core courses provide the fundamental basis for light and light-matter interaction.
- Laboratory practices contain a large amount of practical working in photonics.
- Waves and scattering consist of advanced topics on modern light propagation and scattering.
- Light and Matter inspect light-matter interaction at microscopic level.
- Displays, Colors, and Applications introduce some special topics on optics.
- Master thesis is your own large project

## LIST OF COURSES

Registering for the courses is via WebOodi (<https://weboodi.uef.fi/>).

Course code	Course	Obligatory course	Period	Timing	ECTS
<b>GENERAL STUDIES</b>					
<a href="#">1131003</a>	Orientation for International Students	No	1	1st study year	1
<a href="#">3310302</a>	Study Planning	Yes	1	1st study year	1
<a href="#">3312063</a>	Communication Skills	Yes	1-2	1st study year	4
<a href="#">3312005</a>	Undergraduate Seminar	Yes	4	2nd study year	2
<a href="#">8014301</a>	Finnish 1	No	1		4
<a href="#">8031006</a>	University Computing Skills	No	1	1st study year	2
<a href="#">8031003</a>	University Study Skills	No	1	1st study year	1
<b>CORE</b>					
<a href="#">3312055</a>	Photonics and Optics Fundamentals	Yes	1	1st study year	4
<a href="#">3312008</a>	Physical Optics	Yes	2	1st study year	4
<a href="#">3312021</a>	Material Physics	Yes	3	1st study year	4
<a href="#">3312016</a>	Quantum Physics	Yes	2	1st study year	4
<b>LABORATORY</b>					
<a href="#">3312032</a>	Advanced Measurements and Laboratory Practice	Yes	1	1st study year	2
<a href="#">3312032</a>	Laboratory Practice 1	Yes	2-4	1st study year	9
<a href="#">3312032</a>	Laboratory Practice 2	Yes	1	2nd study year	3
<a href="#">3312032</a>	Laboratory Practice 3	Yes	2	2nd study year	3
<a href="#">3312071</a>	Graphical programming for setup control	Yes	1	2 <sup>nd</sup> study year	2
<b>WAVES AND SCATTERING</b>					
<a href="#">3312060</a>	Micro- and nanophotonics	Yes	4	1st study year	4
<a href="#">3312064</a>	Optical Design 1	Yes	3	1st study year	4
<a href="#">3312027</a>	Optical Design 2	Yes	2	2nd study year	4
<b>LIGHT AND MATTER</b>					
<a href="#">3312020</a>	Light and Matter	Yes	4	1st study year	4
<a href="#">3312059</a>	Quantum Optics	Yes	1	2nd study year	4
<a href="#">3312056</a>	Nonlinear Optics	Yes	2	2nd study year	4
<a href="#">3312058</a>	Laser Physics	Yes	1	2nd study year	4

Course code	Course	Obligatory course	Period	Timing	ECTS
<b>DISPLAYS, COLORS, APPLICATIONS</b>					
<a href="#">3312062</a>	Color Science	Yes	3	1st study year	4
<a href="#">3312073</a>	Applications of Photonics	Yes	2	2nd study year	4
<a href="#">3312025</a>	Display Technology	No	4	2nd study year	5
<a href="#">3312048</a>	Components for optical telecommunications	Yes	4	1st study year	4
<a href="#">3312039</a>	Paper and Printing Optics	No	Summer		4
<b>OTHERS</b>					
<a href="#">3310306</a>	Numerical Methods in Photonics	Yes	1	1st study year	2
<a href="#">3312057</a>	Mathematical methods for Photonics	Yes	1	1st study year	4
<a href="#">3312052</a>	Data and Error Analysis in Natural Sciences	Yes	2	1st study year	2
<a href="#">3312069</a>	Basics of Signal Processing	No	3		3
<a href="#">3312012</a>	Professional Training	No	summer		2-6
<a href="#">3313002</a>	Joensuu Summer School on Optics	No	summer		2-5

The official assessment scale of the University of Eastern Finland is from 1 to 5 (5 being the highest). Some courses may be graded as Pass or Fail, in which case no numerical grade will be given. In a written examination, students normally have to obtain a minimum of 50% of the raw points to gain a Pass from a course.

Grade Definition	ECTS scale	
5	Excellent	A
4	Very good	B
3	Good	C
2	Satisfactory	D
1	Sufficient	E
Pass	Course completed successfully	



## DOUBLE DEGREE PROGRAM

Students in the Master's degree programme in Photonics at UEF may apply to a **Double Master's Degree Program in «Advanced Materials and Technologies of Photonics»** for the second study year. This double degree programme is organized together with UEF and ITMO University (<https://en.itmo.ru/en/>) in St. Petersburg, Russia. After completing all the requirements for graduation at each institution, the student will be granted official Master's Degree Diplomas/Certificates by both universities. For more information, please contact programme coordinator Noora Heikkilä (email: [noora.heikkila@uef.fi](mailto:noora.heikkila@uef.fi)).



# *Guidance and help*

**Programme coordinator:**

Noora Heikkilä, PhD

email: [noora.heikkila@uef.fi](mailto:noora.heikkila@uef.fi)

office: Metria 308 (3<sup>rd</sup> floor)

mobile: +358 50 567 1944

**Leader of the programme:**

Markku Kuittinen, Professor

email: [markku.kuittinen@uef.fi](mailto:markku.kuittinen@uef.fi)

office: Metria 300 (3<sup>rd</sup> floor)

mobile: +358 50 376 6352

# *Academic calendar at UEF*

The academic year is based on a two-semester system. The official academic year starts on 1 August and ends on 31 July. However, in the autumn semester lectures are scheduled mainly between September and mid-December, and in the spring semester between early January and May. The Christmas break is about three weeks and during the spring semester, there is a week-long Easter break. There is generally no teaching during the summer and on public holidays.

Check the up-to-date information on <https://kamu.uef.fi/en/student-book/academic-calendar/>.

DATE	EVENT/HOLIDAY
3-5 September 2019	Orientation for new Master's Degree students in Kuopio and in Joensuu
15 September 2019	Registration for new students ends
5 September 2019 (in Joensuu)	Opening ceremony of the academic year
29 September 2019 (in Joensuu)	Climate afternoon
2 October 2019	Sports afternoon
7 October 2019 (in Kuopio)	Climate afternoon
18 December 2019 – 3 January 2020	Christmas break
20 February 2020 (in Kuopio)	10 <sup>th</sup> Anniversary of the university
25 February	Sports afternoon
9-15 April 2020	Easter break

Teaching will not be arranged during the opening ceremony, sports afternoon, climate afternoon, Independence Day (6 December), Maundy Thursday (9 April) and the First of May (30 April – 1 May).

# *Stay tuned!*

*Institute of Photonics (UEF)*

<http://www.uef.fi/en/web/photonics/photonics>

<http://www.facebook.com/institutephotonics>

<https://twitter.com/InstitutePhoton>

*MDP in Photonics*

<http://www.uef.fi/web/mdp-photonics/>

*Joensuu Summer School on Optics 2019: eXpeRience your reality*

19.8.-30.8.2019

<http://www.uef.fi/en/web/photonics/joensuu-summer-school-on-optics>

*Photonics Finland Events*

<https://www.photonics.fi/fi/events/>

*The Flagship on Photonics Research and Innovation (PREIN)*

<http://prein.fi/>

*Yammer groups to follow:*

*UEF opiskelijat // UEF students*

*International Students*

*Fysiikan ja matematiikan opiskelijat*

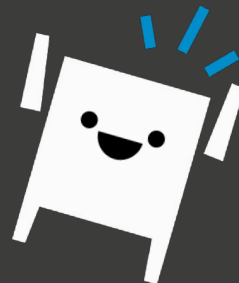
# Welcome to Eastern Finland, the University of Eastern Finland and our *Student Union!*

At first, everything can feel new and confusing, but luckily you have joined a student community where you will surely find all the support you need. Students are a wonderful bunch and we at the Student Union of the University of Eastern Finland will provide you recreational activities, sports services and opportunities to make a difference. We also look out for your interests, so that you can focus on your studies. Your Student Association is the link to other students of your field, while the Student Union is the gateway to all the joys and benefits of student life.

The Student Union, or ISYY for short, may already be familiar to you. Once you have registered to the University, you can pay our membership fee, which also includes the Finnish Student Health Service (FSHS) fee. We are a service and lobbying organisation for students, and that means You. From students to students, with love.

## SERVICES AVAILABLE TO OUR MEMBERS INCLUDE:

- Interest advocacy
- Recreational activities and events
- SYKETTÄ Sports Services
- Rental equipment and venue hire
- Clubs
- International Services
- Communications services, e.g. newsletters
- Student card and the term stickers
- Customer service office
- Anti-Harassment Contact Persons
- Opportunities to make a difference in the Student Union and the University
- Support and services for Student Associations (e.g. grants and training)



Visit our website to learn more about the Student Union, our operations, services, and all the fun and useful things ISYY membership offers you. Our expert staff is also ready to help you anytime! If you really get excited about our work, you can stand in the ISYY Representative Council elections in the fall of 2019, or vote for the candidate that you think is best suited to run the Student Union's affairs.

We wish you the best in your studies this semester and a happy student life!

**READ MORE:** [isyy.fi/en/services/for-new-students](https://isyy.fi/en/services/for-new-students)

# *ESN for international students*

## WHO ARE WE?

ESN Joensuu and ESN Kisa are part of ISYY dedicated to the international students. We are part of Erasmus Students Network (ESN) with more than 527 local sections in 39 countries. The most important task of the ESN sections is to introduce Finnish culture and lifestyle to international students and give Finnish students an opportunity to gain international experiences by arranging events and activities. We are active in promoting intercultural understanding and social inclusion.

## HOW TO BECOME A MEMBER?

Every member of ISYY is an ESN member. You can participate in our events (most of them free of charge) and to our trips, if you are interested in gaining international experiences. Become a board or active member?

Becoming a board or active member gives you the opportunity to participate in the organization of events and decision making. The tasks of board members are the planning and management of events and trips, communication, finding partners and being part of the decision making in the Erasmus student network (ESN). Active members can participate in organizing events and trips. If you wish to participate, please join our meetings. Contact us for meetings schedule and location.

## EVENTS WE ORGANISE

**Kuopio:** We organise get to know each other nights, movie nights, International food festivals, SitSits, Wine and cheese nights, Board game nights, Barbeques and picnics, Futsal tournaments, Ice hockey watching, Smoke Sauna and the list is open to your suggestions! We have at least one event per week so check out our facebook!

**Joensuu:** Join sledging, travel to Lapland and hire skis in the Winter. During the warmer months, you can come and participate in events such as the famous Vappu celebrations and Colourfest! ESN members also have the right to borrow skis, skates, frisbees free of charge at the Student Union. We also organise trips to Koli, Saariselkä, Lapland; Lofoten, Norway and St. Petersburg, Stockholm, and other international events!

## GET INVOLVED!

**ESN Joensuu** [esnjoensuu@esnfinland.eu](mailto:esnjoensuu@esnfinland.eu) | [esnjoensuu.fi](http://esnjoensuu.fi) |   @esnjoensuu

**ESN Kisa (Kuopio)** [esnkisa@gmail.com](mailto:esnkisa@gmail.com) | [esnkisa.eu/contact](http://esnkisa.eu/contact) |   @esnkisa



INTERNATIONAL EXCHANGE  
ERASMUS STUDENT NETWORK

# UEF// DIGITAL TOOLS FOR STUDENTS

The University of Eastern Finland uses a wide range of digital tools that help you with your studies, work and communication. Using these tools is the best way to stay updated on matters pertaining to your studies and the university.

## UEF// KAMU

The Student Handbook **KAMU** is an ever-evolving information bank, where you can find instructions that concern all students, as well as links to various services.

*kamu.uef.fi*

A **STUDY COMMUNITY** is a community created for and featuring information aimed at students of a specific department, unit, major subject or degree programme. General studies-related information is also shared in the study communities. The study communities are part of the Office 365 environment, and you can log in with your UEF credentials. You can find links to the study communities in Kamu.



**YAMMER** is an internal communication channel for students and staff. Everyone can join in the discussion, follow different groups and create new ones. The UEF Students group is intended for information that concerns all students, and the Yammer group of your study community is good source of the latest information in your field. It's a smart move to join and follow both of these groups. You can find a link to Yammer on the university's home page.



**AN EMAIL ACCOUNT** is automatically created for you in the form *username@student.uef.fi*. Log in to your email and other O365 services by entering your username in the form *username@uef.fi*. You can find a link to student email on the university's home page.

*uef.fi*



**WEBOODI** is your most important tool right from the start! Use WebOodi to register for the academic year, exams and courses, and to make your PSP.

*weboodi.uef.fi*



**TUUDO** is a free mobile app (for iOS and Android) via which you can register for courses and exams. In Tuudo, you can also find your study records and automatically created schedule, as well as campus maps and public transport timetables.

*tuudo.fi*

# Feeling lost? *Kamu* will help you out!

All our latest information can be found in the online student handbook **KAMU**. There is information for all the phases of your studies – from freshman year to graduation. Besides guides, information on our services and UEF news, you can search for tips to improve your study skills, or check what kind of campus activities are available. Please check this online material to ensure your smooth start at UEF. Your orientation programme will start on 3 September 2019. The schedule of the orientation week can be found in

*kamu.uef.fi*

*What to do  
after my arrival?  
Search  
Checklist*

*How to study at UEF?  
Search  
Study Skills*

*What is  
an academic quarter?  
Search  
Glossary*

*Where are my  
fellow students?  
Search  
Study Communities*

*I am sick,  
what to do?  
Search  
Health Care*

*Are there restaurants  
on campus?  
Search  
Lunch*

*What happens  
during the summer?  
Search  
Summer School*

*IT problems?  
Search  
IT Services*

*What type of  
sports can I do?  
Search  
Sports*