Hi, I'm going to help you with Applied Photonics and Optical Information Systems, cohort 2026

You can find out your curriculum here ↗



Here's the content:

Basics of curriculum
Compulsory part
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Case study

Term 1 registration
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These cases are based on the most frequently asked questions



Let’s start from the basics:

What you must do during 2 years of study?

- get 120 ECTS credits and reach these numbers of ECTS credits for each stream
- cover all compulsory elements under each stream
- prepare and defend your Thesis

1 ECTS credit = 27 astronomical hours



Skoltech curriculum plan has five Streams:

- Stream 1 (STE) – 36 ECTS credits
- Stream 2 (Sector) – 12 ECTS credits
- Stream 3 (E&I) – 12 ECTS credits
- Stream 4 (Research & MSc Thesis Project) – 36 ECTS credits
- Stream 5 (Options) – 24 ECTS credits

On top of 120 ECTS credits you may take “Extracurricular activities” – maximum 20 ECTS credits overall, maximum 10 ECTS credits per year.

Your load per term must be minimum 12 and maximum 18 ECTS credits. During one academic year your load should not exceed 60 ECTS credits + 10 ECTS credits for “Extracurricular activities”.

Let’s talk about the compulsory part

These are the educational elements that you must complete.

- **The list of these educational elements will not be changed during 2 years of studies!**
- **No need to register for compulsory Stream 1 (STE) courses. You will be registered by default by the Education Department.**

You have compulsory:

9 ECTS credits in Stream 1 (STE)	
Fundamentals of Photonics I	3
Fundamentals of Photonics II	3
Photonics Devices and Applications	3
12 ECTS credits in Stream 2 (Sector)	
Industrial Immersion	12
6 ECTS credits in Stream 3 (E&I)	
Innovation Workshop	6
36 ECTS credits in Stream 4 (Research & MSc Thesis Project)	
Early Research Project	6
Thesis Research Project	12
Thesis Proposal	3
Status Review	3
Predefense	3
Thesis Defense	9
15 ECTS credits in Stream 5 (Options) *	
Additional Thesis Research Short-Term Project	15

* Please note that in Stream 5 (Options) there are 15 ECTS credits referring to 2 courses (Additional Thesis Research and Short-Term Project). This means that students must earn 15 ECTS credits in total within this compulsory part of Stream 5, while the distribution of credits between these 2 elements may vary depending on the student’s research trajectory. E.g.: you could take 9 ECTS credits for Additional Thesis Research and 6 ECTS credits for Short-Term Project (or vice versa). Do not forget to register in Canvas registration quiz.

Let’s discuss the elective part:



The list of the elective courses might be updated. So check Course Catalog ↗ before each registration and Drop/Add period.

You have elective:

27 ECTS credits in Stream 1 (STE)

Quantum Mechanics	3
Introduction to Wireless Communications	3
Introduction to Nanoscience and Engineering	3
Intelligent Data Analysis	6
Applied Physics in Biomimetic Structures	3
Introduction to Optical Biosensors	3
Introduction to Solid State Physics	6
Nanooptics	3
Experimental Optics I	3
Fabrication Technology of Nanodevices	6
Laser Physics	3
Engineering the Interaction of Light with Matter at the Nanoscale	3
Machine Learning	6
Fundamentals of Remote Sensing	3
Optical Communications. Basics	3
Introduction to Product Lifecycle Management (PLM)	6
Integrated Silicon Photonics	6
Physics of Colloids and Interfaces	6
Experimental Optics II	3
Engineering Design Factory	6
Optical Communications. Applications	3
Biomedical Application of Photonics	6
Quantum Optics	3

6 ECTS credits in Stream 3 (E&I)

Entrepreneurship and Innovation Courses from Course Catalog	6

9 ECTS credits in Stream 5 (Options)

3D CAD Modeling and Design	
English Toolkit	3
Academic Writing Essentials	3
Nobel English for Academic Purposes	3
First Steps to Thesis in English	3
Master Your Thesis in English	3
Master Your Defense in English	3

How to pick the elective course wisely?

1. Read course Syllabus which is available in Course Catalog. ↗
2. Keep in mind your workload per term. It must be between 12–18 ECTS credits.
3. Discuss the list of elective courses with your Research Advisor.
4. Take into account course prerequisites. Hard prerequisites (specific course or courses) are indicated in curriculum, so students can plan their educational path. Hard prerequisites must be completed before you take the course.

MA030143	MA030177	Физика лазеров	Laser Physics	3

5. Check the course schedule, so the courses of your choice do not intersect.
6. Some courses you may plan for Year 1 or for Year 2. Number of ECTS credits under the specific Term means that this course is recommended to be taken this Term, “X” means that you can still take the course later.

Introduction to Optical Biosensors	3		3				X	
Introduction to Solid State Physics	6		6				X	

Pay attention to: Term 1 registration



Term 1A (4 weeks in September) – you have a compulsory 6-credit "Innovation Workshop" course. No need to register. You will be registered by default by the Education Department.

Innovation Workshop	6	6	

Term 1B (4 weeks in October) – you have one 3-credit compulsory course.

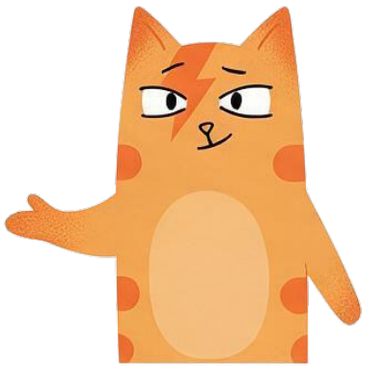
Fundamentals of Photonics I	3	3	

So, in Term 1 you already have 9 compulsory ECTS credits. No need to register. You will be registered by default.

In addition to this, in Term 1B you must receive at least 3 ECTS credits in the elective part. So, you have to pick up a course of your choice and register for it.
The registration timeline is here. ↗

Innovation Workshop

What should I do if I'm a foreign student and I arrive late for "Innovation Workshop" (IW) due to valid reason?



In this case you are allowed to take "Innovation Workshop" in the second year of studies.

What if I can't attend "Innovation Workshop"?

Attendance is mandatory. If you do not have a valid reason (e.g. medical report) and you do not attend IW, you might get an unsatisfactory grade. In this case the Disciplinary Board will be involved.

Term 8

Term 8 is the final term of your educational program, so during it students are expected to work on their thesis only. For this reason make sure that all course workload is completed by the end of Term 7. In Term 8 you are allowed to take only courses related to your thesis.

Master Your Defense in English	3

Multi-term courses

How the workload is spread for a multi-term course?

The workload of a multi-term course is spread equally among the terms.

In elective STE you have a 6-credit multi-term "Intelligent Data Analysis" course in Terms 1B and 2. Your workload will be 3 ECTS credits for each Term for this course.



Intelligent Data Analysis	6	3	3					

When should I register for a multi-term course?

In order to get ECTS credits for a multi-term course you have to attend the course during all the terms as per curriculum plan!

You can register for a multi-term course only before the first term when the course starts. You can drop this course only during the Drop/Add period of the first term when the course starts.

E&I courses from Course Catalog

Where can I find all E&I courses?

You may find all E&I courses in Course Catalog ↗ on the website under the E&I filter. The course Syllabi are also in there.

Additional Thesis Research & Short-Term Project

What is the difference between “Additional Thesis Research” and “Short-Term Project” in terms of course content?



“Additional Thesis Research” is an additional research related to your Thesis, “Short-Term Project” is a research related to a project/research different from your Thesis.

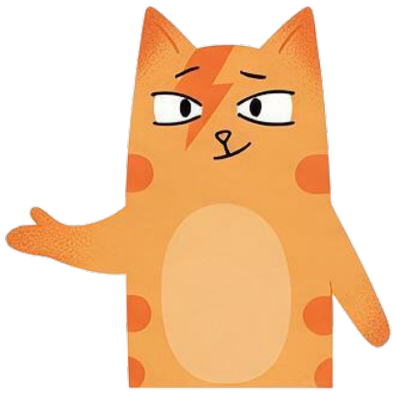
Why is there no total number of ECTS credits for “Short-Term Project” in “Extracurricular activities”?

If there is no total number of ECTS credits for the educational element, it means, you can take as many ECTS credits as allowed under the compulsory or elective part of the stream.

Short-Term Project					X	X		X	X		X	

Low grade

I received a low grade for the course and I do not want to show it in Transcript, is it possible?



It’s not possible. In Transcript you will get all grades for all courses taken.

Can I retake the course if I get a low grade?

You can retake only a compulsory course if you get an “F” grade. With any other grade no course can be retaken.

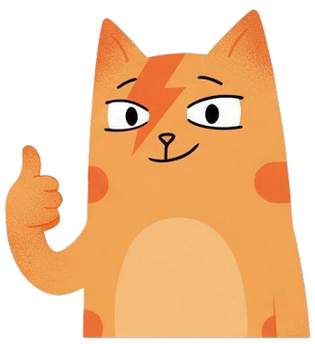
Course Schedule overlaps

I take two courses and the schedules of these courses overlap. What to do?

Please keep in mind that it is your responsibility to make sure you have no course overlaps. If the Education Department notices that there is an overlap in your schedule, the overlapping course will be dropped by our choice.

Free listener

Can I take a course in a free listener role?



Yes, you can but only with the course instructor's permission. If you get "ok" from the course instructor, inform the Education Department about your case by sending an email to education@skoltech.ru, copy the course instructor. Education will add you on a Canvas course page, so you have access to course materials. Keep in mind that the Course Instructor does not check the attendance, does not assess homework assignments, or other assignments for listeners.

ISP

What is ISP? Why does it have no credits in the curriculum plan?

Independent Study Period (ISP) is a special curriculum element, which lasts for 3 weeks in Winter Term (January) and consists of a variety of courses that help students to explore their interests beyond their main educational fields and make their academic learning truly interdisciplinary. Please note that ISP workload is counted in astronomical hours (not in ECTS credits). ISP is mandatory for MSc-1 students, so they must gain between 90 to 120 hours to get a “pass”. To find out more on ISP, please follow the presentation (ISP 2026).

Other questions

I have some other questions on my education in Skoltech, where should I go?

Here are some contacts:

- **Education Department office: E-R1-2064 (education@skoltech.ru)**
- **Program Director: Professor of the Practice Dorozhkin Pavel Sergeevich (p.dorozhkin@skoltech.ru)**
- **Program Coordinator: Engineer Popova Ilona Yurevna (i.popova@skoltech.ru)**

