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**Instrument:** Coordination and Support Action  
**Programme:** ICT-27-2015: Photonics KET  
**Start date of project:** 01.01.2016  
**Duration:** 24 Months

## Deliverable 3.3

# Report on Sources for Education and Training programmes (using existing resources) for Photonics

|                          |  |
|--------------------------|--|
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| Deliverable Author       | Petra Bindig (EaPS) with contribution from all partners  |

| Dissemination Level |   |          |
|---------------------|---|----------|
| <b>PU</b>           | Public  | <b>X</b> |
| <b>PP</b>           | Restricted to other programme participants (including the Commission Services)        |          |
| <b>RE</b>           | Restricted to a group specified by the consortium (including the Commission Services) |          |
| <b>CO</b>           | Confidential, only for members of the consortium (including the Commission Services)  |          |





## List of courses of Photonics

The following deliverable contains a brochure of Photonics training courses 2016 / 2017 that was elaborated by partner EaPS with contribution of all partners. The brochure contains courses for the following countries: France ••• Germany ••• Greece ••• Ireland ••• Spain ••• Lithuania ••• UK••• Austria ••• Sweden.

The following brochure builds upon the brochure on Masters and PhD programmes in Photonics produced within the EU Horizon2020 project “Photonics4All” that finished in December 2016. This brochure can be very useful as a tool to provide educational facilities to potential students, but also information to SMEs who are lacking innovation potential due to limited skilled work forces; the list of courses (deliverable 3.3) will be thus of assistance. PhotonicSweden newly arranged the brochure by changing the layout in accordance with the CI of RespiceSME and typeset in order to make it easier to update the brochure later.

In the project “Photonics4All”, courses of the following countries have been collected: France ••• Germany ••• Italy ••• Netherlands ••• Slovakia ••• Sweden. The brochure of RespiceSME kept those countries by updating some of them (e.g. Sweden) and adding new countries such as Greece ••• Ireland ••• Lithuania ••• Spain.

A HTML version was also created and put on the RespiceSME website; the online tool allows a search per country and kind of course. The online version can be found on the RespiceSME website [www.respicesme.eu](http://www.respicesme.eu).

Each course entry contains information on:

1. **Course title**
2. **Region**
  1. **City**
3. **2 lines of description (300 characters maximum)**
4. **Contact name**
5. **Telephone**
6. **E-mail**
7. **Web site**
8. **Certificates**
9. **Bachelors**
10. **Masters**
11. **Doctorals**
12. **Others**

The brochure is appended as a pdf entitled “Study\_Photonics.pdf”



France

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Germany

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Greece

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Ireland

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Italy

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Lithuania

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Netherlands

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Slovakia

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Spain

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Sweden

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UK

# Directory

**Photonics training courses  
2016 / 2017**

certificates - bachelors  
masters - doctorals



PHOTONICS PUBLIC PRIVATE PARTNERSHIP



# introduction

Where to study Photonics? If you are interested in training to work in this innovative and challenging sector, you will find in this new directory all the optics training courses offered by universities and schools in France, Germany, Greece, Italy, Ireland, Lithuania, Netherlands, Slovakia, Sweden, and UK.

This directory is your tool. Whether you are a young or advanced student and interested in developing or improving your skills in optics, you will find the answers to help guide you through the options and direct your career path.

## table of content

|          |                         |
|----------|-------------------------|
| <b>5</b> | <b>Bachelors</b>        |
|          | France ..... p. 6       |
|          | Germany..... p. 11      |
|          | Greece..... p. 43       |
|          | Ireland..... p. 48      |
|          | Italy..... p. 54        |
|          | Lithuania..... p. 57    |
|          | Netherlands ..... p. 61 |
|          | Slovakia..... p. 63     |
|          | Spain ..... p. 67       |
|          | Sweden..... p. 71       |
|          | UK..... p. 77           |

|           |                          |
|-----------|--------------------------|
| <b>97</b> | <b>Masters</b>           |
|           | France ..... p. 98       |
|           | Germany..... p. 115      |
|           | Greece..... p. 146       |
|           | Ireland..... p. 149      |
|           | Italy ..... p. 155       |
|           | Lithuania..... p. 157    |
|           | Netherlands ..... p. 165 |
|           | Slovakia ..... p. 168    |
|           | Spain ..... p. 172       |
|           | Sweden..... p. 176       |
|           | UK..... p. 188           |

|            |                          |
|------------|--------------------------|
| <b>205</b> | <b>Doctorals</b>         |
|            | Germany..... p. 206      |
|            | Greece..... p. 210       |
|            | Ireland..... p. 215      |
|            | Netherlands ..... p. 219 |
|            | Slovakia ..... p. 221    |
|            | Spain ..... p. 226       |
|            | Sweden..... p. 231       |
|            | UK..... p. 239           |

|            |                          |
|------------|--------------------------|
| <b>245</b> | <b>Others</b>            |
|            | France ..... p. 246      |
|            | Germany..... p. 253      |
|            | Greece..... p. 255       |
|            | Netherlands ..... p. 257 |
|            | Sweden..... p. 259       |
|            | UK..... p. 261           |



**BACHELORS**

**FRANCE**



## FRANCE

### **Dpt. 33 ▶ Professional Bachelor's degree in Lasers, Control and Maintenance (LCM) Université Bordeaux 1**

#### **Bordeaux**

The bachelor's degree in LCM gives the practical and theoretical skills necessary for graduates to work directly in a company, performing the functions of design, manufacture, integration, use and maintenance of lasers and laser facilities, in medical, metallurgical, metrology, military, R&D or micromachining industries.

**Contact:** Yannick PETIT – Tél. +33 (0)5 40 00 26 57

[yannick.petit@icmcb-bordeaux.cnrs.fr](mailto:yannick.petit@icmcb-bordeaux.cnrs.fr)

Inka MANEK-HÖNNINGER (work-study) – Tel.: +33 (0)5 40 00 28 70

### **Dpt. 34 ▶ Professional Bachelor's degree in Control and Measurement of Light and Colour Université Montpellier 2**

#### **Montpellier**

The professional bachelor's degree in Colour at the University of Montpellier 2 offers a unique course focussed on professions involving colour and colorimetry, providing employment opportunities in the cosmetic, automotive and textile industries, etc. The professional bachelor's degree is accessible to those with an L2 (2-year degree) in Physics, Chemistry, Electronics/Electrical Energy/Automation (EEA), a Higher Technician Certificate in Optical/Photonic Engineering (BTS GOP), or a University Diploma in Physical Measurements.

**Contact:** Frédéric GENIET – Tél. +33 (0)4 67 14 46 92

[frederic.geniet@univ-montp2.fr](mailto:frederic.geniet@univ-montp2.fr)

### **Dpt. 63 ▶ Professional Bachelor's degree in SiMCo $\mu$ (Science of Measurement and Control) Université d'Auvergne**

#### **Aubière (63170)**

The professional bachelor's degree in SiMCo (Science of Measurement and Testing) develops the skills necessary to set up a measuring system, manage and calibrate the stock of instruments, determine the parameters to be measured, create test procedures and perform non-destructive tests.

**Contact:** Frédéric FARGETTE – Tél. +33 (0)4 73 17 71 56

[frederic.fargette@udamail.fr](mailto:frederic.fargette@udamail.fr)

## FRANCE

### **Dpt. 68 ▶ Professional Bachelor's degree in Industrial Production Management (GPI): Quality management, metrology option** *UHA IUT GMP, Lycée Théodore Deck et Lycée Jean Mermoz*

#### **Mulhouse, Guebwiller et Saint-Louis**

This bachelor's degree teaches students (Bac +2 or equivalent) about the science and techniques of metrology (particularly dimensional) and quality control. They can then take up the position of laboratory technician in metrology, inspections, testing and calibration.

**Contact:** *Gisèle BAREUX – Tél. +33 (0)3 89 70 21 37*  
*gisele.bareux@ac-strasbourg.fr*

### **Dpt. 75 ▶ Professional Bachelor's degree in Biophotonics** *Université Paris Diderot – Paris 7*

#### **Paris**

The professional Biophotonics bachelor's degree is a multi-disciplinary training course comprising all modern instrumental techniques – from optical microscopy to electron microscopy, via lasers and image processing – applied to biology. The course involves work experience (28 weeks as an intern).

**Contact:** *Charlotte PY – Tél. +33 (0)1 57 27 61 94 – charlotte.py@univ-paris-diderot.fr*

### **Dpt. 75 ▶ Professional Bachelor's degree in Instrumentation, Optics and Visualisation (LIOVIS)** *Université Pierre et Marie Curie*

#### **Paris**

This bachelor's degree teaches engineering assistants with dual competency in optics and electronics, associated with a strong emphasis on visualisation and processing of images. Apprentices can progress in companies within various sectors such as aviation, automotive, biological and medical instrumentation as well as in SMEs/SMIs as well as in large companies.

**Contact:** *Carole BELLAICHE – Tél. +33 (0)1 44 27 35 40 – carole.bellaiche@upmc.fr*  
*Gilles CORDURIÉ – Tél. +33 (0)1 44 27 71 40 – Gilles.cordurie@upmc.fr*

## FRANCE

### **Dpt. 87 ▶ Bachelor's degree in iXeo** **Université de Limoges**

#### **Limoges**

This bachelor's degree is a diploma in iXeo high-tech engineering. It is aimed at students who want to gradually build their career path by developing skills in the fields of engineering physics, optics, electronics and telecommunication.

**Contact:** Agnès DESFARGES-BERTHELEMOT – Tél. +33 (0)5 55 45 77 38  
agnes.desfarges-berthelemot@unilim.fr

### **Dpt. 87 ▶ Professional Bachelor's degree in STMO** **(Microwave and optical telecommunication systems)** **Université de Limoges**

#### **Limoges**

The course prepares professionals who are able to take part in the study, design, installation, measurement, administration and maintenance of electronic or optical devices, using their knowledge of electronic/radiofrequency/microwave or optical functions and communications systems in which they are integrated.

**Contact:** Bernard JARRY – Tél. +33 (0)5 55 45 77 46 – bernard.jarry@unilim.fr

### **Dpt. 87 ▶ Bachelor's degree in Energy Science** **Université de Limoges**

#### **Limoges**

The bachelor's degree in Energy Science is a diploma in iXeo high-tech engineering. The generalist nature of the training course enables students to consider continuing their studies (masters, engineering schools) in major fields such as energy, renewable energy, optics and nanotechnology.

**Contact:** Catherine DI BIN – Tél. +33 (0)5 87 50 67 36 – cathy.dibin@xlim.fr

## FRANCE

### **Dpt. 91 ▶ Professional Bachelor's degree in Instrumentation and Industrial (ICI)** *Université Paris-Sud*

#### **Orsay**

This professional bachelor's degree with an apprenticeship stage trains technicians qualified to Bac +3 level in the fields of instrumentation and sensors. An option to specialise in photosensitive sensors provides a set of skills to apprentice students in the field of the many contactless optical methods.

**Contact:** Eric CASSAN – [eric.cassan@u-psud.fr](mailto:eric.cassan@u-psud.fr)

### **Dpt. 91 ▶ Professional Bachelor's degree in Thin Film Materials Science for Optics and Energy (MATFM degree)** *Université Paris Sud – IUT Orsay*

#### **Orsay**

This professional bachelor's degree teaches assistant engineers qualified in thin film technology focussed on technologies related to preserving the environment (emission, detection and transformation of light). The programme covers the techniques for producing and analysing thin films (40% of time spent on practical work).

**Contact:** Pascal AUBERT – Tél. +33 (0)1 69 33 60 64 – [pascal.aubert@u-psud.fr](mailto:pascal.aubert@u-psud.fr)

### **Dpt. 93 ▶ Professional Bachelor's degree in Electronics, Optics and Nanotechnology** *IUT de Villetaneuse, Université Paris 13*

#### **Villetaneuse**

This professional bachelor's degree trains technicians and assistant engineers for R&D in the fields of microelectronics, optoelectronics, lasers, optical fibres and thin films. Unique in France, it incorporates practical training and supervised projects carried out in a clean room (>100 hours).

**Contact:** Min W. LEE – Tél. +33 (0)1 49 40 36 78 – [min.lee@iutv.univ-paris13.fr](mailto:min.lee@iutv.univ-paris13.fr)

**GERMANY**

## GERMANY

### Physics

#### **Albert-Ludwigs-Universität Freiburg**

##### **Freiburg, Baden-Wurttemberg**

The focus of teaching in the field of physics are particle, atomic, molecular and optical physics. In master's degree program you can specialize on the Optical Technologie.

**Contact:** *Zentrale Universitätsverwaltung / Rektorat Fahnbergplatz, 79085 Freiburg*  
+49 761 203-0 – [info@verwaltung.uni-freiburg.de](mailto:info@verwaltung.uni-freiburg.de)  
[www.uni-freiburg.de](http://www.uni-freiburg.de)

### Microsystems Technology

#### **Albert-Ludwigs-Universität Freiburg**

##### **Freiburg, Baden-Wurttemberg**

The bachelor program in microsystems engineering is an interdisciplinary three-year study with a basic education in the fields of physics, mathematics, chemistry, microsystems technology, electrical engineering and materials science. In master's degree program you can specialize on the Optical Technologies.

**Contact:** *Zentrale Universitätsverwaltung / Rektorat Fahnbergplatz, 79085 Freiburg*  
+49 761 203-0 – [info@verwaltung.uni-freiburg.de](mailto:info@verwaltung.uni-freiburg.de)  
[www.uni-freiburg.de](http://www.uni-freiburg.de)

### Physics

#### **Universität Heidelberg**

##### **Heidelberg, Baden-Wurttemberg**

The focus of teaching in the field of physics are particle, atomic, molecular and optical physics. As minor field of study, you can choose e.g. Chemistry, Mathematics or IT. In master's degree program you can specialize on the Optical Technologies.

**Contact:** *Dekanat der Fakultät für Physik und Astronomie / Im Neuenheimer Feld 226, 69120 Heidelberg* – +49 6221 54-19648 – [dekanat@physik.uni-heidelberg.de](mailto:dekanat@physik.uni-heidelberg.de)  
<http://www.physik.uni-heidelberg.de/>

### Physics

#### **Karlsruher Institut für Technologie (KIT)**

##### **Karlsruhe, Baden-Wurttemberg**

The focus of teaching in the field of physics are particle, atomic, molecular and optical physics. As minor field of study, you can choose e.g. Chemistry, Mathematics or IT. In master's degree program you can specialize on the Optical Technologies.

**Contact:** *Kaiserstraße 12, 76131 Karlsruhe* – +49 721 608-0  
[www.kit.edu](http://www.kit.edu) – [www.ksop.de](http://www.ksop.de)

## GERMANY

### Physics

#### Universität Konstanz

##### Konstanz, Baden-Württemberg

In the field of optical technologies, the physical basis include in particular the Classical Optics, Atomic Physics, Laser Physics, Quantum Optics, Quantum Information, Semiconductor Physics, Nonlinear Optics and Optics of Disordered and Organic Media, Polymer Physics, Technical Optics etc.

**Contact:** *Fachbereich Physik / Universitätsstraße 10, 78457 Konstanz*

*+49 7531 88-2415 – [fachbereich.physik@uni-konstanz.de](mailto:fachbereich.physik@uni-konstanz.de)*

*[www.uni-konstanz.de](http://www.uni-konstanz.de)*

### Renewable Energie

#### Universität Stuttgart

##### Stuttgart, Baden-Württemberg

In addition to classic Bachelor in Physics and numerous priorities in photonics this interdisciplinary degree program was created. Advanced modules are i.a. Optoelectronics, Photovoltaics, Laser and Radiation Sources, and Industrial Process Technology for Photovoltaics, Optical Design, Optics in Medicine.

**Contact:** *Institut für Energieübertragung und Hochspannungstechnik (IEH) / Pfaffenwaldring 47, 70569 Stuttgart*

*Prof. Dr.-Ing. Stefan Tenbohlen – +49 711 685-678 70 – [info@ee.uni-stuttgart.de](mailto:info@ee.uni-stuttgart.de)*

*[stefan.tenbohlen@ieh.uni-stuttgart.de](mailto:stefan.tenbohlen@ieh.uni-stuttgart.de)*

*<http://www.uni-stuttgart.de/ieh/>*

### Physics

#### Universität Stuttgart

##### Stuttgart, Baden-Württemberg

The focus of teaching in the field of physics are particle, atomic, molecular and optical physics. As minor field of study, you can choose e.g. Chemistry, Mathematics or IT. In master's degree program you can specialize on the Optical Technologies.

**Contact:** *Physikalisches Institut / Pfaffenwaldring 57, 70569 Stuttgart*

*Prof. Dr. Martin Dressel – +49 711 6856-4947*

*[www.pi1.physik.uni-stuttgart.de](http://www.pi1.physik.uni-stuttgart.de)*

### Physics

#### Eberhard Karls Universität

##### Tübingen, Baden-Württemberg

As part of the physical basic training, the experimental and theoretical optics are taught. Priorities in the field of optical technologies include Nano Biophysics, Medical Physics, Quantum Field Theory, Astrophysics, Space Science and Quantum Optics.

**Contact:** *Geschwister-Scholl-Platz, 72074 Tübingen – +49 7071 29-72514*

*[www.physik.uni-tuebingen.de](http://www.physik.uni-tuebingen.de)*

## GERMANY

### Physics

#### *Universität Ulm*

##### **Ulm, Baden-Württemberg**

Neben der physikalischen Grundausbildung liegen die Schwerpunkte in Ulm vor allem auf der Quantenoptik, Quanteninformationsverarbeitung und Quantenmaterie, aber auch im Bereich Optik in der Medizintechnik und Biophotonik.

**Contact:** *Zentrale Studienberatung / Albert-Einstein-Allee 5, 89081 Ulm  
+49 731 50-22053 – [www.uni-ulm.de/physik/](http://www.uni-ulm.de/physik/)*

### Electrical Engineering

#### *Universität Ulm*

##### **Ulm, Baden-Württemberg**

As part of the electrical engineering studies optoelectronics is taught.

**Contact:** *Zentrale Studienberatung / Albert-Einstein-Allee 5, 89081 Ulm  
+49 731 50-22053 – [www.uni-ulm.de/studium/studienberatung.html](http://www.uni-ulm.de/studium/studienberatung.html)*

### Communication Technology

#### *Universität Ulm*

##### **Ulm, Baden-Württemberg**

As part of this study optoelectronics and optical communications will be taught.

**Contact:** *Zentrale Studienberatung / Albert-Einstein-Allee 5, 89081 Ulm  
+49 731 50-22053 – [ctech.e-technik.uni-ulm.de/](http://ctech.e-technik.uni-ulm.de/)*

### Optoelectronics/Laser Technology

#### *Hochschule Aalen*

##### **Aalen, Baden-Württemberg**

This degree program combines the disciplines Optics / Photonics with Electronics and Information Technology. These include Opto-Electronic Systems, Laser and Biomedicine and Product Management.

**Contact:** *Technik und Wirtschaft / Beethovenstrasse 1, 73430 Aalen  
[www.hs-aalen.de](http://www.hs-aalen.de)*

### Ophthalmic Optics

#### *Hochschule Aalen*

##### **Aalen, Baden-Württemberg**

The priorities in the field of Optical Technologies are the Physiological and Optometric Optics.

**Contact:** *Technik und Wirtschaft / Beethovenstrasse 1, 73430 Aalen  
[www.hs-aalen.de](http://www.hs-aalen.de)*



## GERMANY

### **Mechanical Engineering**

**Hochschule Esslingen**

**Hochschule für Technik Fachbereich Mechatronik und Elektrotechnik**

#### **Esslingen/Göppingen, Baden-Württemberg**

In Bachelor's degree program the students are taught the basics in mechanical engineering. In the field of Optical Technologies this include i. a. Laser Material Processing, (Laser-) Metrology.

**Contact:** Robert-Bosch-Strasse 1, 73037 Göppingen

+49 7161 679-0 – [www.hs-esslingen.de](http://www.hs-esslingen.de)

### **Precision Engineering**

**Hochschule Esslingen**

**Hochschule für Technik Fachbereich Mechatronik und Elektrotechnik**

#### **Esslingen/Göppingen, Baden-Württemberg**

In Bachelor the students are taught the basics of electrical engineering / microelectronics. In the field of Optical Technologies, this include i. a. Optical Measuring and Sensor Technology, Industrial Imageprocessing, Technical Optics.

**Contact:** Robert-Bosch-Strasse 1, 73037 Göppingen

+49 7161 679-0 – [www.hs-esslingen.de](http://www.hs-esslingen.de)

### **Automation Engineering**

**Hochschule Esslingen**

**Hochschule für Technik Fachbereich Mechatronik und Elektrotechnik**

#### **Esslingen/Göppingen, Baden-Württemberg**

In Bachelor's degree in the field of Optical Technologies the students are taught in Industrial Image Processing and Acquisition.

**Contact:** Robert-Bosch-Strasse 1, 73037 Göppingen

+49 7161 679-0 – [www.hs-esslingen.de](http://www.hs-esslingen.de)

### **Electronics and Technical Computer Science**

**Hochschule Furtwangen – Informatik, Technik, Wirtschaft, Medien**

#### **Furtwangen, Baden-Württemberg**

Besides basics in Electronics and Technical Computer Science you can find courses on Laser Metrology & Microsensors.

**Contact:** Robert-Gerwig-Platz 1, 78120 Furtwangen

+49 7723 920-0 – [info@hs-furtwangen.de](mailto:info@hs-furtwangen.de)

[www.hs-furtwangen.de](http://www.hs-furtwangen.de)

## GERMANY

### **Security and Safety Engineering**

**Hochschule Furtwangen – Informatik, Technik, Wirtschaft, Medie**

#### **Furtwangen, Baden-Württemberg**

In this degree program i.a. the subjects Image Processing and Optoelectronics are taught.

**Contact:** Robert-Gerwig-Platz 1, 78120 Furtwangen  
+49 7723 920-0 – [info@hs-furtwangen.de](mailto:info@hs-furtwangen.de)  
[www.hs-furtwangen.de](http://www.hs-furtwangen.de)

### **Product Engineering**

**Hochschule Furtwangen – Informatik, Technik, Wirtschaft, Medie**

#### **Furtwangen, Baden-Württemberg**

Besides basics in Product Engineering you will find courses on Simulation Technology / Optical Simulations and the Innovation Lab with subjects like Optical Simulation and Lighting Equipment, Illumination Optics, Lighting Technology and Lighting Design.

**Contact:** Robert-Gerwig-Platz 1, 78120 Furtwangen  
+49 7723 920-0 – [info@hs-furtwangen.de](mailto:info@hs-furtwangen.de)  
[www.hs-furtwangen.de](http://www.hs-furtwangen.de)

### **Mechatronics and Microsystems Technology**

**Hochschule Heilbronn Studiengang Mechatronik und Mikrosystemtechnik**

#### **Heilbronn, Baden-Württemberg**

In this degree program you can hear lectures on Technical Optics, Optical Waveguides and Integrated Optics, Laser Technology / Photonics and Optical Simulation.

**Contact:** Max-Planck-Strasse 39, 74081 Heilbronn  
Prof. Dr.-Ing. Peter Ott – +49 7131 504-325 – [peter.ottl@hs-heilbronn.de](mailto:peter.ottl@hs-heilbronn.de)  
[www.hs-heilbronn.de/labor.technische.optik](http://www.hs-heilbronn.de/labor.technische.optik)

### **Engineering**

**Hochschule für Technik, Wirtschaft und Gestaltung**

**University of Applied Sciences**

#### **Konstanz, Baden-Württemberg**

Besides the basics of Engineering, knowledge in Modern Optics (Wave Optics, Optoelectronics, Laser Optics, Image Processing) and Lighting Technology, Production Measurement Technology will be taught.

**Contact:** Hausadresse: Brauneggerstrasse 55, 78462 Konstanz  
Postadresse: Postfach 100 543, 78405 Konstanz  
+49 7531 206-0 – <http://www.htwg-konstanz.de/>

## GERMANY

### **Electrical Engineering/Information lechnology University of Applied Sciences**

#### **Offenburg, Baden-Wurttemberg**

In this degree program i.a. the topics Spectroscopy, Optical Sensors and Image Processing are taught.

**Contact:** *Badstrasse 24, 77652 Offenburg*  
*+49 781 205-0 – info@hs-offenburg.de – www.hs-offenburg.de*

### **Technology Development/Physical Engineering Hochschule Ravensburg-Weingarten**

#### **Ravensburg-Weingarten, Baden-Wurttemberg**

There are basics for engineering sciences works incl. Geometrical Optics, Wave Optics and Photonics with later focus on Energy and Process Engineering and Mechatronics / Optics (Optical Metrology, Optoelectronics, Optical Design and Lighting Technology).

**Contact:** *Doggenriedstraße, 88250 Weingarten*  
*info@hs-weingarten.de – www.hs-weingarten.de*

### **Laser- and Optotechnologies**

#### **Jena, Thuringia**

The program is interdisciplinary oriented. It focuses on the areas of laser technology, optics, optical technologies and optoelectronics.

**Contact:** *Yvonne Guddei – +49 (0)3641 205-400 – scitec@fh-jena.de*  
*http://www.eah-jena.de/fhj/scitec/studium/laser-und-optotechnologien-b-eng-/Seiten/default.aspx*

### **Optometry**

#### **Jena, Thuringia**

The degree of Optometry enables the graduate to diagnose defective vision on a scientific level and to correct it. The graduates possess additional knowledge in adjacent areas, for example in the fields of light technology and occupational safety, in optical technologies and business management.

**Contact:** *Yvonne Guddei – +49 (0)3641 205-400 – scitec@fh-jena.de*  
*http://www.eah-jena.de/fhj/scitec/studium/augenoptik-optometrie-b-sc-/Seiten/default.aspx*

## GERMANY

### Physics

#### *Universität Jena*

##### **Jena, Thuringia**

The programme comprises the mandatory modules experimental physics, theoretical physics comprehensive topics and mathematics. Elective courses are astronomy, atoms and molecules, relativistic physics and particles. The regular course duration is 6 semesters.

**Contact:** Prof. Dr. Karl-Heinz Lotze – 0049 (0) 3641 - 947010– [kh.lotze@uni-jena.de](mailto:kh.lotze@uni-jena.de)  
[http://www.uni-jena.de/Studium/Studienangebot/BSc\\_Physik.html](http://www.uni-jena.de/Studium/Studienangebot/BSc_Physik.html)

### Electrical Engineering/Information technology

#### *Hochschule Darmstadt*

##### **Darmstadt, South Hessen**

Basic and specialized knowledge in the field of electrical engineering are been taught. Areas of specialization: automation and information technology, energy, electronics and the environment and communication technology. There are, inter alia, Lectures, labs and exercises.

**Contact:** Prof. Dr.-Ing. Manfred Loch – 06151 16-8301 – [loch@eit.h-da.de](mailto:loch@eit.h-da.de)  
<http://www.eit.h-da.de/>

### Optotechnology and Image Processing

#### *Fachbereich Mathematik und Naturwissenschaften*

##### **Darmstadt, South Hessen**

The combination of modern optics and image processing in this degree program is aimed at today's professional requirements in the field of optical technologies. It will impart knowledge in the fields of optics, laser technology, optical metrology and image processing.

**Contact:** Prof. Dr. Christoph Heckenkamp – 06151 16-8651 – [heckenkamp@h-da.de](mailto:heckenkamp@h-da.de)  
[www.fbmn.h-da.de](http://www.fbmn.h-da.de)

### Mechatronics

#### *Frankfurt University of Applied Sciences*

##### **Frankfurt, Rhein-Main**

The program qualifies for demanding activities in many fields of engineering, such as automotive engineering or medical technology. After successfully completing undergraduate work with colloquium, graduates acquire the academic degree «Bachelor of Engineering».

**Contact:** Prof. Dr. Gernot Zimmer – 069 1533-2546 – [zimmerg@fb2.fh-frankfurt.de](mailto:zimmerg@fb2.fh-frankfurt.de)  
[www.fh-frankfurt.de/de/](http://www.fh-frankfurt.de/de/)

## GERMANY

### **Automation Engineering** **Technische Hochschule Mittelhessen**

#### **Gießen, Mittelhessen**

Engineers and engineers in automation technology require in-depth knowledge in measurement, regulation, control and process control. The course content also includes modern operating systems and programming languages. At work they automate technical processes and equipment.

**Contact:** Prof. Dr.-Ing. Ubbo Ricklefs – 0641 309-1914  
ubbo.ricklefs@ei.th-mittelhessen.de  
www.thm.de/ei

### **Information and Communication Technology** **Technische Hochschule Mittelhessen**

#### **Gießen, Mittelhessen**

The study enables information technology products and processes, complex communication systems and data networks autonomously propose, realize and can service. It imparts knowledge in communications, signal processing, RF and wireless technology.

**Contact:** Prof. Dr.-Ing. Ubbo Ricklefs – 0641 309-1914  
ubbo.ricklefs@ei.th-mittelhessen.de  
www.thm.de/ei

### **Electronics** **Technische Hochschule Mittelhessen**

#### **Gießen, Mittelhessen**

Graduates as practical development engineers can design and manufacture electronic products for systems of automation and information technology. An education in all fields of electronics, radio frequency and metrology is it fundamentally.

**Contact:** Prof. Dr.-Ing. Ubbo Ricklefs – 0641 309-1914  
ubbo.ricklefs@ei.th-mittelhessen.de  
www.thm.de/ei

### **Mechanical Engineering** **Technische Hochschule Mittelhessen**

#### **Gießen, Mittelhessen**

The major field of study is Microtechnology / optics in mechanical engineering and power engineering. The calculation, design and construction more specific instruments based on optical technologies is learned. The lectures are accompanied by internships in well-equipped laboratories.

**Contact:** Prof. Dr. Thomas Sure – 0641 309-2223 – thomas.sure@me.thm.de  
www.me.thm.de

## GERMANY

### **Mechanical Engineering** **Technische Hochschule Mittelhessen**

#### **Gießen, Mittelhessen**

The engineering is concerned essentially with the automation, development, construction and operation of facilities, production facilities and equipment (eg, power plants, elevators, machine tools, robots, thermal and fluidic systems).

**Contact:** Prof. Dr. rer. nat. Jens Hoßfeld – 0641 309-2239 – [jens.hossfeld@me.thm.de](mailto:jens.hossfeld@me.thm.de)  
[www.me.thm.de](http://www.me.thm.de)

### **Physical Technology**

#### **Friedberg, Mittelhessen**

Laser technology and materials science are key industrial technologies. Building on a base of physics, mathematics and computer science Technical creating these major fields of study of the program the best conditions in order to be successful in future-oriented industries.

**Contact:** Prof. Dr. Rolf Klein, Prof. Dr. Klaus Behler – 06031/604-4761/ -410– [rolf.klein@mnd.thm.de](mailto:rolf.klein@mnd.thm.de)

<http://www.thm.de/site/studium/sie-wollen-studieren/232-unsere-studiengaenge/78-physikalische-technik-bachelor-b-sc.html>

### **Engineering** **Hochschule Darmstadt**

#### **Wetzlar, Mittelhessen**

The program leads in six semesters at a internally. Bachelor's degree. Six different specializations offered in the main study Based on the engineering undergraduate. Here specially designed for the field of optics elective modules of THM can be occupied.

**Contact:** Prof. Dr. Werner Bonath – 06441 2041-217 – [bonath@studiumplus.de](mailto:bonath@studiumplus.de)  
[www.studiumplus.de](http://www.studiumplus.de)

### **Information an Electrical Technology** **Hochschule Rhein-Main**

#### **Wiesbaden, Rhein-Main**

The bachelor's degree program is aimed at a first professional degree. Students acquire a solid mathematical and scientific knowledge and a specific technical knowledge for the engineering of information and telecommunications technology.

**Contact:** Prof. Dr.-Ing. Jürgen Winter – 06142 898-4214 – [juergen.winter@hs-rm.de](mailto:juergen.winter@hs-rm.de)  
[www.hs-rm.de/ite](http://www.hs-rm.de/ite)

## GERMANY

### **Physical Technology** **Hochschule Rhein-Main**

#### **Wiesbaden, Rhein-Main**

The profile of the program opens up a wide range of applications in professional practice . The course is offered very practical and also gives optimal conditions for the further qualification in the master's degree program « Applied Physics » in the same Department.

**Contact:** Prof. Dr. Hans Georg Scheibel – 06142 898-4521 – [hans.scheibel@hs-rm.de](mailto:hans.scheibel@hs-rm.de)  
[www.hs-rm.de/physik](http://www.hs-rm.de/physik)

### **Electrical Engineering/Information lechnology** **Technische Universität Darmstadt**

#### **Darmstadt, South Hessen**

The bachelor's degree enables to participate in the planning and implementation of electrical engineering and information technology components and systems. The course offers a good basic training in electrical engineering, physics, information technology (einschl.Informatik) and mathematics.

**Contact:** Dr.-Ing. Andreas Haun – 06151/16-2801 – [haun@etit.tu-darmstadt.de](mailto:haun@etit.tu-darmstadt.de)  
[www.etit.tu-darmstadt.de](http://www.etit.tu-darmstadt.de)

### **Physics** **Technische Universität Darmstadt**

#### **Darmstadt, South Hessen**

This study course provides fundamental and methodical insight to the field of physics. This enables the students to solve prospective challenges with methodical flexibility and scientific originality.

**Contact:** Dr. Markus Domschke – 06151 16-3072 – [dekanat@physik.tu-darmstadt.de](mailto:dekanat@physik.tu-darmstadt.de)  
[www.physik.tu-darmstadt.de](http://www.physik.tu-darmstadt.de)

### **Physics** **University Frankfurt**

#### **Frankfurt, Rhein-Main**

Bachelor's and Master's degree program together replace the previous course for physics diploma. There are knowledge and skills that enable graduates of the program to the profession as a physicist.

**Contact:** Prof. Dr. Reinhard Dörner – 069 798-47003 – [doerner@atom.uni-frankfurt.de](mailto:doerner@atom.uni-frankfurt.de)  
[www.unifrankfurt.de](http://www.unifrankfurt.de)

## GERMANY

### **Material Science** **University Giessen**

#### **Gießen, Mittelhessen**

This study course combines key elements of Chemistry and Physics within new courses in the field of theoretical and practical material science. The educational objective is to communicate a wide variety of basic scientific knowledge.

**Contact:** Dr. Jörg Schörmann – 0641 99-33122  
joerg.schoermann@exp1.physik.uni-giessen.de  
www.uni-giessen.de/materialwissenschaften

### **Electrical Engineering** **Technische Hochschule Mittelhessen**

#### **Kassel, Northern Hesse**

The Bachelor's programs impart basic knowledge in the field of electrical engineering, among others Fields of drive technology, electrical machinery, electrical plant and high voltage engineering, energy conversion process, power electronics and engineering mechanics, among others.

**Contact:** Prof. Dr. Hartmut Hillmer – 0561 804-4485 – hillmer@ina.uni-kassel.de  
www.uni-kassel.de/fb16

### **Electrical Engineering** **University Kassel**

#### **Kassel, Northern Hesse**

The StiP is a scientific study in combination with a business-oriented vocational training. The University of Kassel maintains several collaborations with leading industrial companies in the North Hesse region.

**Contact:** Studienservice Elektrotechnik/Informatik – 0561/804-6438, -6322  
studieren@uni-kassel.de  
www.uni-kassel.de/fb16

### **Nano Structur Science** **University Kassel**

#### **Kassel, Northern Hesse**

The research CINSaT offers in cooperation with the concerned Department of Mathematics and Natural Sciences at the interdisciplinary degree program for nanostructure sciences. Students should be able to work Formal sciences of modern research in the field of Nano.

**Contact:** Studienservice Elektrotechnik/Informatik – 0561/804-6438, -6322  
studieren@uni-kassel.de  
www.uni-kassel.de/fb16



## GERMANY

### Physics

#### University Kassel

##### Kassel, Northern Hesse

The Physics Bachelor provides a broad foundation of physical knowledge, which prepares for the specialization towards various research fields. So this is an optimum condition to deal in the master phase with optical technologies.

**Contact:** Prof. Dr. R. Matzdorf – 0561 804-4772 – [matzdorf@physik.uni-kassel.de](mailto:matzdorf@physik.uni-kassel.de)  
[www.uni-kassel.de/fb10/](http://www.uni-kassel.de/fb10/)

### Physics

#### Fb. 13

##### Marburg, Mittelhessen

The degree program prepares graduates for a career in business, industry, scientific research institutes and public administration. The aim of this Bachelor program is, inter alia, to apply the general analytical skills.

**Contact:** PD Dr. Andreas Schrimpf – 06421 28-21338  
[andreas.schrimpf@physik.uni-marburg.de](mailto:andreas.schrimpf@physik.uni-marburg.de)  
[www.physik.uni-marburg.de](http://www.physik.uni-marburg.de)

### Solar Engineering (Photovoltaics)

#### Hochschule Anhalt

##### Köthen, Saxony-Anhalt

Photovoltaic is one of the largest growth markets – worldwide. Well-trained solar specialists are urgently needed in the areas of manufacturing and development. One answer is the modern degree course Solar Engineering.

**Contact:** Prof. Dr. Henry Bergmann – <http://sot.emw.hs-anhalt.de>

### Electrical Engineering / Information Technology

#### Hochschule für angewandte Wissenschaft und Kunst

##### Göttingen, Lower-Saxony

Electronic systems with a strong focus on software are being used in industry today to an ever increasing extent. The HAWK has tailored the courses of study in Electrical Engineering/Information Technology (EE/IT) to meet exactly these specific needs.

**Contact:** Prof. Dr. Bernd Stock (Dean of Study) – +49(0)551/3705-14  
[stock@hawk-hhg.de](mailto:stock@hawk-hhg.de) – [http://www.hawk-hhg.de/en/sciences/media/N\\_11\\_05\\_05\\_BROS\\_ENG\\_WEB\\_END.pdf](http://www.hawk-hhg.de/en/sciences/media/N_11_05_05_BROS_ENG_WEB_END.pdf)

## GERMANY

### Physical technologies

#### *Hochschule für angewandte Wissenschaft und Kunst*

##### **Göttingen, Lower-Saxony**

These are the subjects you will learn about in Physical Technologies: Laser technology, optical engineering and photonics, biomedical technology, plasma technology, material-processing, analytical measuring technology.

**Contact:** Prof. Dr. Bernd Stock (Dean of Study) – +49(0)551/3705-14

stock@hawk-hhg.de – [http://www.hawk-hhg.de/en/sciences/media/N\\_11\\_05\\_05\\_BROS\\_ENG\\_WEB\\_END.pdf](http://www.hawk-hhg.de/en/sciences/media/N_11_05_05_BROS_ENG_WEB_END.pdf)

### Mechanical Engineering / Precision Machining

#### *Hochschule für angewandte Wissenschaft und Kunst*

##### **Göttingen, Lower-Saxony**

The field of Precision Machining ranges from the smallest mechanical components measuring just millimeters in e.g. cameras or DVD players up to highly precise machines used in production plants. The students learn all the technologies required in modern mechanical engineering.

**Contact:** Prof. Dr. Bernd Stock (Dean of Study) – +49(0)551/3705-14

stock@hawk-hhg.de – <http://www.hawk-hhg.de/en/sciences/default.php>

### Mechanical Engineering/Mechatronics/Engineering Physics

#### *Hochschule Merseburg*

##### **Merseburg, Saxony-Anhalt**

In the study program in “Mechanical Engineering/Mechatronics/Engineering Physics” you may specialize in one of the following fields: Mechanical Engineering, Mechatronics, Engineering, Physics.

**Contact:** Prof. Dr.-Ing. Wolf-Dietrich Knoll – 03461 46-2917 – [wolf-dietrich.knoll\(at\)hs-merseburg.de](mailto:wolf-dietrich.knoll(at)hs-merseburg.de) – <http://www.hs-merseburg.de/inw/studiengnge/maschinenbau-mechatronik-physiktechnik-beng/>

### Electrical Engineering

#### *TU Braunschweig*

##### **Braunschweig, Lower-Saxony**

The bachelor courses take 6 semesters (3 years).

**Contact:** Dr. Silke Wollers – 0531 391-7798, -6322 – [s.wollers@tu-braunschweig.de](mailto:s.wollers@tu-braunschweig.de)  
<https://www.tu-braunschweig.de/studieninteressierte/studienangebot/elektrotechnik>

## GERMANY

### Physics

#### *TU Braunschweig*

##### **Braunschweig, Lower-Saxony**

Theoretische, Experimentelle und Angewandte Physik sind an der TU Braunschweig vertreten und ermöglichen eine anwendungsnahe Ausbildung.

**Contact:** <https://www.tu-braunschweig.de/eitp/studieninteressierte/physik/bsc>

### Lasertechnik

#### *Hochschule Emden*

##### **Emden, Lower-Saxony**

Studienprogramm „Engineering Physics“ mit den Schwerpunkten Laser und Optik, Erneuerbare Energien und Biomedizinische Physik und Akustik zu erfahren.

**Contact:** Prof. Dr. Bert Struve – 04921 807-14 90 – [bert.struve@hs-emden-leer.de](mailto:bert.struve@hs-emden-leer.de)  
<http://www.hs-emden-leer.de/studium/studiengaenge/lasertechnik.html>

### Engineering Physics

#### *Hochschule Emden*

##### **Emden, Niedersachsen**

In den ersten fünf Semestern werden die fachlichen Grundlagen in Physik sowie in den Ingenieurwissenschaften gelegt. Die Spezialisierung kann in einem der Schwerpunkte «Laser + Optics», «Renewable Energies» oder «Biomedical Physics and Acoustics» erfolgen.

**Contact:** <http://www.hs-emden-leer.de/studium/studiengaenge/engineering-physics-bachelor.html>

### Electrical Engineering

#### *Hochschule Magdeburg-Stendal*

##### **Magdeburg, Saxony-Anhalt**

T and communication networks: Digital signal processing, messaging technology, high frequency technology/EMC, communication electronics, optical transmission technology, data communication, IT networks and protocols, Next Generation networks.

**Contact:** Dr. Monika Lehmann – (0391) 886 41 06 – [studienberatung@hs-magdeburg.de](mailto:studienberatung@hs-magdeburg.de) – <https://www.hs-magdeburg.de/studium/bachelor/elektrotechnik.html>

## GERMANY

### **Mechatronics** **Jade Hochschule**

#### **Wilhelmshaven/Oldenburg/Elsfleth, Lower-Saxony**

Mechatronics is, unconsciously for many, already part of everyday life: The products range from consumer electronics (DVD players, cameras, CD players, etc.) to robotics (creation of fully automatic factories).

**Contact:** <http://www.jade-hs.de/fachbereiche/ingenieurwissenschaften/studiengaenge/mechatronik/>

### **Biomedical Engineering** **Jade Hochschule**

#### **Wilhelmshaven/Oldenburg/Elsfleth, Lower-Saxony**

The development of new medical devices requires knowledge from the fields of electrical, mechanical, engineering and natural sciences, computer science, and medicine. These form the core competencies in the undergraduate biomedical degree program

**Contact:** <http://www.jade-hs.de/de/fachbereiche/ingenieurwissenschaften/studiengaenge/medizintechnik/>

### **Physics** **University Göttingen**

#### **Göttingen, Lower-Saxony**

Two study foci are offered: 1) Nanostructure Physics, which is extensively used in the technology sector, with particularly promising career prospects in the semiconductor industry; 2) Computational Physics, which combines the practice-oriented application of computers in current physics with computer science and business informatics

**Contact:** Dr. Jörn Große-Knetter – 49 551 2739-7657 – [jgrosse1@uni-goettingen.de](mailto:jgrosse1@uni-goettingen.de)  
<http://www.uni-goettingen.de/de/bachelor-of-science-physik/206835.html>

### **Material Sciences** **University Göttingen**

#### **Göttingen, Lower-Saxony**

Modern materials are the basis for all technological progress. In the interdisciplinary Bachelor's degree programme in Material Sciences, you will get to know the chemical and physical fundamentals concerning materials. The variety of materials dealt with ranges from metals, semiconductors, glass and ceramics to biological materials.

**Contact:** Dr. Carsten Nowak – 49 (0)551 39-33893  
[materialwissenschaften@uni-goettingen.de](mailto:materialwissenschaften@uni-goettingen.de)  
<http://www.uni-goettingen.de/de/111184.html>

## GERMANY

### Physics

#### *Martin-Luther-Universität Halle-Wittenberg*

##### **Halle, Saxony-Anhalt**

Der Bachelor-Studiengang in Physik bietet eine grundlegende, breit angelegte Ausbildung in der experimentellen und theoretischen Physik.

**Contact:** <http://www.studienangebot.uni-halle.de/de/www/detail/?id=107&name=Physik>

### Physics

#### *Leibniz Universität Hannover*

##### **Hannover, Lower-Saxony**

Leibniz Universität Hannover, with its recognised research into physics, offers several study and specialisation possibilities. For example, the focus could be on gravitation physics and quantum optics. In solid state physics, nanoelectronics are in the foreground. The opportunity to specialise in applied physics is possible due to the close connection to the engineering science disciplines, the Laserzentrum (Laser Centre) Hannover and also the Institut für Solarenergieforschung (Solar Energy Research). Technical Physics in particular offers targeted education and training in the fields of nanoelectronics, photonics and environmental physics.

**Contact:** <http://www.uni-hannover.de/en/studium/studienfuehrer/physik/studieninhalt/>

### Industrial Engineering

#### *Leibniz Universität Hannover*

##### **Lüneburg, Lower-Saxony**

Students of the major move across the disciplinary boundaries of electrical engineering, mechanical engineering and computer sciences. They combine these topics with learning from business administration and manufacturing management. Students acquire a fundamental knowledge of physics, measurement technology and methods, and technical mathematics.

**Contact:** Prof. Dr. rer. nat. Hans-Dieter Sträter – +49.4131.677-2277

infoportal@leuphana.de – <http://www.uni-hannover.de/de/studium/studienfuehrer/physik-msc/allgemein/>

### Engineering Physics

#### *Universität Oldenburg*

##### **Oldenburg, Lower-Saxony**

The Carl von Ossietzky University of Oldenburg and the University of Applied Sciences Emden/Leer offer an international bachelor's programme in Engineering Physics in order to fill the gap between traditional physics and engineering.

**Contact:** Martin Reck M. Sc – 0441 - 798 3560 – [m.reck@uni-oldenburg.de](mailto:m.reck@uni-oldenburg.de)  
<http://www.uni-oldenburg.de/ep/>

## GERMANY

### Physics

#### Universität Oldenburg

##### Oldenburg, Lower-Saxony

In the bachelor's programme in physics, students acquire a fundamental knowledge of theoretical and experimental physics in a very comprehensive way, paying special attention to current problems and research methods.

**Contact:** Prof. Dr. Matthias Wollenhaupt – 0441 - 798 3482

[matthias.wollenhaupt@uni-oldenburg.de](mailto:matthias.wollenhaupt@uni-oldenburg.de)

[http://www.uni-oldenburg.de/studium/studiengang/?id\\_studg=135](http://www.uni-oldenburg.de/studium/studiengang/?id_studg=135)

### Physics

#### University Osnabrück

##### Osnabrück, Lower-Saxony

The Department of Physics offers a wide range of degree programs in physics - three-year bachelor's degree programs with professional or teacher-specific orientation and subsequent two-year master's degree programs.

**Contact:** Prof. Dr. J. Wollschläger – [joachim.wollschlaeger@uni-osnabrueck.de](mailto:joachim.wollschlaeger@uni-osnabrueck.de)

<http://www.physik.uni-osnabrueck.de/startseite.html>

### Electrical Engineering

#### TU Berlin

##### Berlin, Brandenburg

Electrical itself dealt with the engineering applications of electricity and their physical concomitants. It deals both with the conversion of primary forms of energy into electrical energy, its transmission, distribution and conversion, and with the transmission, switching and processing of messages and information.

**Contact:** Dr.-Ing. Stephan Völker – +49 30 314 79170 – [sekretariat@li.tu-berlin.de](mailto:sekretariat@li.tu-berlin.de)

<https://www.eecs.tu-berlin.de>

### Mechanical Engineering

#### TU Berlin

##### Berlin, Brandenburg

Engineering deals mainly with the design and construction of all types of machines. At the beginning of studies in mathematics, physics, electrical engineering and chemistry are very important, you can specialize later, depending on career aspirations to a subregion. Machine builders are active in almost all sectors of industry, whether in the food industry, in the energy sector or in the automotive industry

**Contact:** Prof. Dr.-Ing. Henning Meyer – +49 30 314 78516

[henning.meyer@tu-berlin.de](mailto:henning.meyer@tu-berlin.de) – <https://www.vm.tu-berlin.de/maschinenbau>

## GERMANY

### Physics TU Berlin

#### Berlin, Brandenburg

The physics at the Technical University of Berlin is divided into the Institute of Solid State Physics, Optics and Atomic Physics, Theoretical Physics and the Centre for Astronomy and Astrophysics. The bachelor's program includes a basic education in experimental and theoretical physics, mathematics and other physical and non-physical areas, to enable the students to a large extent independent of physical processing and physics Middle issues in various professional fields.

**Contact:** Prof. Dr. Harald Engel – +49 30 314 79462 – [h.engel@physik.tu-berlin.de](mailto:h.engel@physik.tu-berlin.de)  
<http://www.physik.tu-berlin.de>

### Physical Engineering TU Berlin

#### Berlin, Brandenburg

The course is aimed at prospective students, which the preoccupation with physics and mathematics is fun and relevant knowledge wish to apply in the engineering profession, without wishing to be held from the outset to a particular application object or career field. Graduates of Physical Engineering can participate for technical systems and examine these models with the corresponding experimental, analytical and numerical methods in the development of mathematical and physical models.

**Contact:** Prof. Dr. rer. nat Valentin Popov – +49 30 314 23454 – [v.popov@tu-berlin.de](mailto:v.popov@tu-berlin.de)  
<https://www.vm.tu-berlin.de/pi>

### Physics FU Berlin

#### Berlin, Brandenburg

Bachelor's degree in physics knowledge and skills are acquired that qualify for a postgraduate course or a professional activity. The course of study is science-oriented and provides the theoretical and experimental bases and a total of a broad general education in physics, the ability to think scientifically, the critical judgments, to act responsibly and to communication and cooperation.

**Contact:** Prof. Dr. Martin Weinelt – +49 30 838 65060 – [weinelt@physik.fu-berlin.de](mailto:weinelt@physik.fu-berlin.de)  
[www.physik.fu-berlin.de](http://www.physik.fu-berlin.de)

## GERMANY

### **Electronical Engineering** *Hochschule für Technik und Wirtschaft Berlin*

#### **Berlin, Brandenburg**

The Bachelor's degree in Mechanical Engineering has been designed using modern requirements of the mechanical engineering industry. The curriculum in addition to the classic engineering core competencies in the design, construction and testing methodology different computational methods. In the modules of study will be based on basic subjects of engineering, acquired particular knowledge to design and manufacture a wide range of machinery and equipment. Strengthen laboratory exercises and deepen this theoretical knowledge.

**Contact:** Prof. Dr.-Ing. Norbert Klaes – +49 30 5019 3570  
[norbert.klaes@htw-berlin.de](mailto:norbert.klaes@htw-berlin.de) – <http://et-bachelor.htw-berlin.de/>

### **Mechanical Engineering** *Hochschule für Technik und Wirtschaft Berlin*

#### **Berlin, Brandenburg**

The Bachelor's degree in Mechanical Engineering has been designed using modern requirements of the mechanical engineering industry. The curriculum in addition to the classic engineering core competencies in the design, construction and testing methodology different computational methods. In the modules of study will be based on basic subjects of engineering, acquired particular knowledge to design and manufacture a wide range of machinery and equipment. Strengthen laboratory exercises and deepen this theoretical knowledge.

**Contact:** Prof. Dr.-Ing. Dieter Joensson – +49 30 5019 4319  
[sdieter.joensson@htw-berlin.de](mailto:sdieter.joensson@htw-berlin.de) – <http://mb-bachelor.htw-berlin.de/>

### **Mikrosystem Technology** *Hochschule für Technik und Wirtschaft Berlin*

#### **Berlin, Brandenburg**

The study microsystems engineering bachelor's degree in leads to the degree Bachelor of Engineering (B.Eng.). This provides opportunities for subsequent professional entry or to continue studying in a master's program. The standard period of study is six semesters. It is divided into a two-semester basic study and a three-semester advanced studies. In the sixth semester the internship is carried out and the Bachelor thesis is written.

**Contact:** Prof. Dr. Bernd Hagen – +49 30 5019 3386 – [bernd.hagen@htw-berlin.de](mailto:bernd.hagen@htw-berlin.de)  
<http://mst.htw-berlin.de>



## GERMANY

### **Information- and Communication Technologies** **Hochschule für Technik und Wirtschaft Berlin**

#### **Berlin, Brandenburg**

The aim of the study in the Bachelor Information and Communication Technology has a wide knowledge in the natural sciences and engineering fundamentals, and in selected information and communication technology priorities. The hands-on course provides the ability to develop information technology, automation and communication technology integrated solutions for tasks in distributed information systems in the fields and implement.

**Contact:** Prof. Dr.-Ing. Friedrich Hoppe – +49 30 5019 3253  
Friedrich.Hoppe@HTW-Berlin.de  
<http://www.f1.htw-berlin.de/>

### **Physical Engineering** **Beuth Hochschule für Technik Berlin**

#### **Berlin, Brandenburg**

The study program Engineering Physics - Medical Physics combines the basic science physics with their technological application especially in the medical environment. High technology permeates today all stages of medical procedures from diagnosis to therapy. Accordingly wide training has been created, this application-based and the complexity and rapid development of the field continuously adjusted.

**Contact:** Prof. Dr. Kay-Uwe Kasch – +49 30 4504 2446 – [kasch@beuth-hochschule.de](mailto:kasch@beuth-hochschule.de)  
[www.beuth-hochschule.de](http://www.beuth-hochschule.de)

### **Mechatronics** **Beuth Hochschule für Technik Berlin**

#### **Berlin, Brandenburg**

Mechatronics is an interdisciplinary field that is caused by integration of mechanics / precision engineering, optics, electrical engineering / electronics and information technology. Applications can be found wherever on the basis of basic mechanical systems intelligent by integrating electronic and IT components and often high-precision products and systems are in demand.

**Contact:** Prof. Dr.-Ing. Wolfram Runge – +49 30 4504 5121  
[wrunge@beuth-hochschule.de](mailto:wrunge@beuth-hochschule.de) – [www.beuth-hochschule.de](http://www.beuth-hochschule.de)

## GERMANY

### Electrical Engineering

#### *Beuth Hochschule für Technik Berlin*

##### **Berlin, Brandenburg**

The Bachelor's degree program Electrical Engineering combines the disciplines Electronic systems, electronics and communication systems as well as electrical engineering. There are carried out in the respective areas of specialization first three common semester and then 4 semesters.

**Contact:** Prof. Dr.-Ing. Sven Tschirley – +49 30 4504 2743  
[sven.tschirley@beuth-hochschule.de](mailto:sven.tschirley@beuth-hochschule.de) – [www.beuth-hochschule.de](http://www.beuth-hochschule.de)

### Ophthalmic Optics

#### *Beuth Hochschule für Technik Berlin*

##### **Berlin, Brandenburg**

The Ophthalmic optics / Optometry is the science of the physiology of the eye and visual processing. She teaches the measurement and correction of refractive errors of the human eye as well as the supply of glasses, contact lenses and magnifying vision aids in theory and clinical practice.

**Contact:** Prof. Dr.-Ing. Peter Moest – +49 30 4504 4710  
[peter.moest@beuth-hochschule.de](mailto:peter.moest@beuth-hochschule.de) – [www.beuth-hochschule.de](http://www.beuth-hochschule.de)

### Chemistry

#### *University Potsdam*

##### **Potsdam, Brandenburg**

Chemistry can be found everywhere today: in drugs, creams, automotive coatings, components of microelectronics and plastic bottles. As different as the applications are also the areas of work of the chemist of bioanalytics and polymer chemistry to nuclear chemistry. The study of chemistry in Potsdam not only conveys profound expertise in the core subjects Inorganic Chemistry, Organic Chemistry and Physical Chemistry, Analytical but also in the highly interdisciplinary and application-oriented fields of chemistry, polymer and colloid chemistry and theoretical chemistry. Optical technologies already play in the bachelor program a significant role.

**Contact:** Dr. Andreas Koch – +49 331 977 5198 – [andreas.koch@uni-potsdam.de](mailto:andreas.koch@uni-potsdam.de)  
<http://www.chem.uni-potsdam.de>

## GERMANY

### Physics

#### **University Potsdam**

##### **Potsdam, Brandenburg**

The University of Potsdam offers a customizable framework with small group sizes, personal contact with the teachers and early involvement in research groups for the study of physics. The new building on the science campus Golm directly opposite the railway station offers ideal conditions for study. The undergraduate study physics can be completed at the University of Potsdam, including the Bachelor's thesis in three years.

**Contact:** Dr. Horst Gebert – +49 331 977 1354 – [gebert@uni-potsdam.de](mailto:gebert@uni-potsdam.de)  
<http://www.physik.uni-potsdam.de>

### Electrical Engineering

#### **Brandenburgische Technische Universität Cottbus-Senftenberg**

##### **Cottbus, Brandenburg**

The electrical engineering is a key technology of the German economy. The mainstays are the information technology, electronics, energy and automation technology. It has become increasingly interconnected of all sectors of the economy with information technology, software and microelectronics is unmistakable. There is a diversity in their hardly be detected range of products from the microchip to the industrial plant.

**Contact:** Dr.-Ing. Uwe Rau – +49 355 69 28 92 – [rau@tu-cottbus.de](mailto:rau@tu-cottbus.de)  
[www.b-tu.de](http://www.b-tu.de)

### Mechanical Engineering

#### **Brandenburgische Technische Universität Cottbus-Senftenberg**

##### **Cottbus, Brandenburg**

With the bachelor's degree course in mechanical engineering, the Technical University of Cottbus-Senftenberg responds to this demand by industry for young engineering graduates with international qualification in order to meet the demographically induced shortage.

**Contact:** Dipl.-Ing. Sebastian Bolz – +49 355 69 5105 – [sebastian.bolz@tu-cottbus.de](mailto:sebastian.bolz@tu-cottbus.de)  
[www.b-tu.de](http://www.b-tu.de)

### Mikrosystemtechnologien

#### **FH Brandenburg**

##### **Brandenburg**

The program ensured in seven semesters a solid application-oriented education in high-tech fields of microsystems technology and optical technologies. The career prospects are excellent. The possible areas of application include, for example, the activity as a research and development engineer in companies and institutions of laser technology, optoelectronics, optics, microelectronics, microsensors and -actuators, scientific equipment construction and medical technology.

**Contact:** Prof. Dr. sc. nat. Klaus-Peter Möllmann – +49 3381 355346  
[moellmann@fh-brandenburg.de](mailto:moellmann@fh-brandenburg.de) – [www.fh-brandenburg.de](http://www.fh-brandenburg.de)

## GERMANY

### **Biosystemtechnologies** *Technische Hochschule Wildau*

#### **Wildau, Brandenburg**

The Biosystemtechnik combines microengineering components such as silicon chips with biological systems. In this case, whole cells or individual components, such as proteins, enzymes or nucleic acids, can be used. Such systems are, for example, biohybrids used as minireactors, delivery systems for drugs or as probes in modern analytics. Bioinformatics deals with the computational analysis and modeling of biological and medical phenomena. Here, among other things, computer algorithms, specialized databases and different statistical methods are developed with the help of which questions can be answered from the life sciences. The comprehensive practical training of our graduates sought-after employees in the life science industry, both in industry and in research institutions.

**Contact:** Prof. Dr. Heike Pospisil – +49 3375 508949 – [heike.pospisil@th-wildau.de](mailto:heike.pospisil@th-wildau.de)  
[www.th-wildau.de](http://www.th-wildau.de)

### **Physics** *HU Berlin*

#### **Berlin, Brandenburg**

The content structure of the program is geared to the needs of a contemporary teacher training. For this purpose, professional qualifications to the content of the school subject physics are based in another technical framework, embeds and verifies theoretically sound physics. The professional physical education is largely separated from the professional training of the «pure» Physicists (Mono Bachelor) to take account of the special requirements for the course content, resulting from the lessons of physics at school.

**Contact:** Prof. Dr. Burkhard Priemer – +49 30 2093 7945  
[priemer@physik.hu-berlin.de](mailto:priemer@physik.hu-berlin.de) – [www.physik.hu-berlin.de](http://www.physik.hu-berlin.de)

### **Physics** *HU Berlin*

#### **Berlin, Brandenburg**

The study aims at providing the ability to analyze physical problems and to develop autonomously (unconventional) solutions. This problem-solving skills will ensure that you are prepared after studying for a wide range of tasks in research and science.

**Contact:** PD Dr. Andreas Opitz – +49 30 2093 7545 – [andreas.opitz@hu-berlin.de](mailto:andreas.opitz@hu-berlin.de)  
[www.physik.hu-berlin.de](http://www.physik.hu-berlin.de)

## GERMANY

### **Engineering-Laser Technology** ***Ostbayerische Technische Hochschule Amberg-Weiden***

#### **Amberg-Weiden, Bavaria**

In the two-semester specialization module laser technology they receive next Fundamentals of Physics, Technical optics and beam-material interaction knowledge about the latest technologies in the field of lasers and laser material processing.

**Contact:** Uwe Stiegler – 09621/482-3132 – [u.stiegler@oth-aw.de](mailto:u.stiegler@oth-aw.de)  
[www.oth-aw.de](http://www.oth-aw.de)

### **Medical Engineering** ***Ostbayerische Technische Hochschule Amberg-Weiden***

#### **Amberg-Weiden, Bavaria**

The program includes five module groups: Natural Sciences, including optics and laser technology, precision engineering, electrical engineering, medical technology, integration technology and provides knowledge for development, testing, manufacturing and application of medical technology components, devices and systems.

**Contact:** Uwe Stiegler – 09621/482-3132 – [u.stiegler@oth-aw.de](mailto:u.stiegler@oth-aw.de)  
[www.oth-aw.de](http://www.oth-aw.de)

### **Biomedical Engineering** ***Hochschule für angewandte Wissenschaften Ansbach***

#### **Ansbach, Bavaria**

Both the foundations and the applications in medicine are taught in the degree program Biomedical Engineering. These cover a very wide range from doing such. As endoscopy, light and electron microscopy, laser, micro and nanophotonics and visualization of 3D medical data.

**Contact:** Katrin Gümpelstein – 0981/ 4877-144 – [katrin.guempelein@hs-ansbach.de](mailto:katrin.guempelein@hs-ansbach.de)  
[www.hs-ansbach.de](http://www.hs-ansbach.de)

### **Electrical and Computer Engineering, Mechatronics, Industrial Engineering** ***Hochschule Aschaffenburg***

#### **Aschaffenburg, Bavaria**

(- Optical materials), production technology and robotics (-Lasermaterialbearbeitung) as well as the measurement and sensor technology significantly - In these programs the optical technologies are a cross-cutting technology related to micro-electronics (optoelectronics and photonics), materials engineering.

**Contact:** Melissa Sommer – 06021/ 4206-7621 – [studienbuero.iw@h-ab.de](mailto:studienbuero.iw@h-ab.de)  
[www.h-ab.de](http://www.h-ab.de)

## GERMANY

### **Technical Physics, study light and laser technology** **Hochschule Coburg**

#### **Coburg, Bavaria**

With its own study laser and light technology is the study of highly technical and physically oriented (technical optics, laser technology and applications, fiber optic devices, light sources and lighting technology. Internships and practical exercises accompany the study.

**Contact:** *Dr. Katja Kessel – 09561/ 317-445 – studienberatung@hs-coburg.de*  
*www.hs-coburg.de*

### **Mechatronics - Optical Engineerin** **Technische Hochschule Deggendorf**

#### **Deggendorf, Bavaria**

Already in the basic study the technical optics is included. Even the lighting technology offered - In focus Optical Engineering then subjects such as optical materials, digital image processing, production engineering optics, optoelectronics and laser technology, optical sensor and measurement technology.

**Contact:** *Prof. Dr.-Ing. Peter Fröhlich – 0991 /3615-300 – speter.froehlich@th-deg.de*  
*www.th-deg.de*

### **Physical Engineering Optical Technologies** **Technische Hochschule Deggendorf**

#### **Deggendorf, Bavaria**

Already in the basic study the technical optics and optoelectronics is included. Even photonics offered - In focus optical technologies then subjects such as optical materials, optical manufacturing technology, higher optoelectronics and laser technology, optical technologies.

**Contact:** *Prof. Dr. Thomas Stirner – 0991/ 3615-341 – thomas.stirner@th-deg.de*  
*www.th-deg.de*

### **Mechatronics, precision engineering, medical device technology** **Hochschule München**

#### **München, Bavaria**

In the field of optical technologies Physical Engineering mainly technical and medical optics, digital signal and image processing and laser technology and opto-electronics are at the Department of Precision Engineering and Microsystems, covered.

**Contact:** *Pia Hetzel – 089/ 1265-1250 – pia.hetzel@hm.edu*  
*http://www.hm.edu/*

## GERMANY

### Physical Engineering Hochschule München

#### München, Bavaria

In addition to general engineering basics such as materials technology, electronics, instrumentation to acquire a foundation in the field of atomic and solid state physics before incorporating in the practical areas of optics and laser technology, optoelectronics and sensors / actuators.

**Contact:** Pia Hetzel – 089/ 1265-1250 – [pia.hetzel@hm.edu](mailto:pia.hetzel@hm.edu)  
<http://www.hm.edu/>

### Ophthalmic optics / Optometry Hochschule München

#### München, Bavaria

The dual Bachelor AUGENOPTIK / OPTOMETRY combines impressively practical training in ophthalmic optics, which is proven by passing the final examination in this craft, with an academic education through the acquisition of the academic degree B. Sc ..

**Contact:** Pia Hetzel – 089/ 1265-1250 – [pia.hetzel@hm.edu](mailto:pia.hetzel@hm.edu)  
<http://www.hm.edu/>

### Mechatronics / Precision Engineering Technische Hochschule Nürnberg

#### Nürnberg, Bavaria

The bachelor's degree program Mechatronics / Precision Engineering recommend future students seeking a broad, system-oriented training in the optics / photonics plays a role. It forms the basis for the Master's program «Systems Engineering» with specialization in «Photonics» or «communications technology».

**Contact:** Prof. Dr.-Ing. Winfried Hallwig – 0911/5880-1494  
[winfried.hallwig@th-nuernberg.de](mailto:winfried.hallwig@th-nuernberg.de) – <http://www.th-nuernberg.de/>

### Electrical and Computer Engineering Ostbayerischen Technischen Hochschule Regensburg

#### Regensburg, Bavaria

In the academic focus of news and information technology will lecture on «Optical Communications», «Optical communication systems» and «components of optical communication systems» offered. Corresponding tests in the placements complement the lectures in a meaningful way.

**Contact:** Prof. Dr.rer.nat. Mikhail Chamonine – 0941/943-1105  
[mikhail.chamonine@oth-regensburg.de](mailto:mikhail.chamonine@oth-regensburg.de) – [www.oth-regensburg.de](http://www.oth-regensburg.de)

## GERMANY

### **Mechatronics**

#### ***Ostbayerischen Technischen Hochschule Regensburg***

##### **Regensburg, Bavaria**

One is a large curriculum in the basic subjects including strength of materials, fluid technology and control technology. In the main study, the subjects laser and optoelectronics, micro-engineering and engineering physics are offered. Similarly, priorities are placed within the sensor and actuator.

**Contact:** Prof. Dr.rer.nat. Roland Mandl – 0941/943-1104  
roland.mandl@oth-regensburg.de – www.oth-regensburg.de

### **Microsystems Technology**

#### ***Ostbayerischen Technischen Hochschule Regensburg***

##### **Regensburg, Bavaria**

The main theme of the lectures and practical are the micro and nano technologies, manufacturing process for miniaturized mikrooptische-, mikromechanische- and micro-electronic devices. In most modern cleanroom laboratory all technological steps can be practically traced.

**Contact:** Prof. Dr. rer.nat. Alfred Lechner – 0941/943-1271  
alfred.lechner@oth-regensburg.de – www.oth-regensburg.de

### **Sensors and Instrumentation**

#### ***Ostbayerischen Technischen Hochschule Regensburg***

##### **Regensburg, Bavaria**

In the sensor, you deal with all kinds, including optical sensor principles and the processing of the sensor signals. In the analysis it comes to chemical and trace analysis. These are highly optical methods, such as used, for example spectroscopy.

**Contact:** Prof. Dr. rer.nat. Ernst Wild – 0941/943-1271 – ernst.wild@oth-regensburg.de  
www.oth-regensburg.de

### **Electrical and Computer Engineering**

#### ***Hochschule für angewandte Wissenschaften***

##### **Würzburg-Schweinfurt, Bavaria**

On the technical knowledge of optics that are acquired in the basic course, is built in the specialization modules. Depending on the specialty, and the selection of elective courses the following courses are offered: Optical Communications, optoelectronics, image sensors, automated optical inspection (AOI).

**Contact:** Prof. Dr. Andreas Kuechler – 0931 / 3511 - 6180 – andreas.kuechler@fhws.de  
www.fhws.de



## GERMANY

### **Materials Science** **Universität Augsburg**

#### **Augsburg, Bavaria**

The program is jointly borne by the working groups of the Institute of Physics, whose focus is on application-oriented solid state physics. Optical technologies are used in both methods for determining material used, as well as in the development of novel photonic materials.

**Contact:** Dr. Thomas Bodenmüller – 0821 /598 - 5146

[thomas.bodenmueller@zsb.uni-augsburg.de](mailto:thomas.bodenmueller@zsb.uni-augsburg.de) – [www.uni-augsburg.de](http://www.uni-augsburg.de)

### **Physics** **Universität Augsburg**

#### **Augsburg, Bavaria**

In six-semester bachelor basic physics, mathematics and a minor subject (chemistry or computer science) to buy. An Introduction to optics is given.

**Contact:** Dr. Thomas Bodenmüller – 0821 /598 - 5146

[thomas.bodenmueller@zsb.uni-augsburg.de](mailto:thomas.bodenmueller@zsb.uni-augsburg.de) – [www.uni-augsburg.de](http://www.uni-augsburg.de)

### **Physics** **Universität Bayreuth**

#### **Bayreuth, Bavaria**

After a one-year orientation phase a specialization in the areas of General Physics, Biological Physics or Technical Physics can be selected. Major fields of study such as optics, microscopy, optical spectroscopy and laser physics can be freely selected.

**Contact:** Dr. Gisela Gerstberger – 0921 / 55 52 46 – [studienberatung@uni-bayreuth.de](mailto:studienberatung@uni-bayreuth.de)

<http://www.uni-bayreuth.de/de/index.html>

### **Chemical and Biological Engineering** **Friedrich-Alexander Universität Erlangen-Nürnberg**

#### **Erlangen-Nürnberg, Bavaria**

The course of study chemical and biological engineering builds on foundations from the fields of chemistry, biology, physics, mathematics and engineering sciences and establishes links with neighboring disciplines of mechanical engineering, control engineering, materials science and business administration.

**Contact:** Martin Kriesten – 09131/85-67402 – [martin.kriesten@fau.de](mailto:martin.kriesten@fau.de)

<http://www.tf.fau.de/>

## GERMANY

### **Electrical, Electronic and Information Technologies** **Friedrich-Alexander Universität Erlangen-Nürnberg**

#### **Erlangen-Nürnberg, Bavaria**

In the first four semesters fundamentals in mathematics, science and technology are taught. By choosing a field of study from 6 areas of electrical engineering and information technology, you can make the undergraduate study in the 5th and 6th semesters your inclinations accordingly.

**Contact:** Anja Damli – 09131/85-28776 – [anja.damli@fau.de](mailto:anja.damli@fau.de)  
<http://www.tf.fau.de/>

### **Computer science, computational engineering** **Friedrich-Alexander Universität Erlangen-Nürnberg**

#### **Erlangen-Nürnberg, Bavaria**

After the mediation of specialist scientific bases of an interdisciplinary computer science education in the first semesters is placed on versatile choices in higher semesters value. Elective modules from various computer science-majors available.

**Contact:** Dr. Christian Götz – 09131/85-27007 – [christian.goetz@fau.de](mailto:christian.goetz@fau.de)  
<http://www.tf.fau.de/>

### **Engineering** **Friedrich-Alexander Universität Erlangen-Nürnberg**

#### **Erlangen-Nürnberg, Bavaria**

The acquisition of a broad basic knowledge of the subjects of mechanical engineering through materials science, fluid mechanics and thermodynamics to computer science, mathematics, electrical engineering and business administration is a wide range of courses available.

**Contact:** Patrick Schmitt – 09131/85-20707 – [patrick.schmitt@mb.uni-erlangen.de](mailto:patrick.schmitt@mb.uni-erlangen.de)  
<http://www.mb.studium.fau.de/>

### **Mechatronics** **Friedrich-Alexander Universität Erlangen-Nürnberg**

#### **Erlangen-Nürnberg, Bayern**

During the bachelor program you acquire basic and thorough technical and methodological knowledge in the field of mechatronics. The degree program is distinguished by a cross-linking of the subjects offered by the fields of electrical engineering, mechanical engineering and computer science.

**Contact:** Patrick Schmitt – 09131/85-20707 – [patrick.schmitt@mb.uni-erlangen.de](mailto:patrick.schmitt@mb.uni-erlangen.de)  
<http://www.mb.studium.fau.de/>

## GERMANY

### Physics

#### *Friedrich-Alexander Universität Erlangen-Nürnberg*

##### **Erlangen-Nürnberg, Bavaria**

For students, there is a wide range of physical electives. In the field of optics, a wide range of teaching the Institute of Optics, Information and Photonics is present and the Max Planck Institute for the Science of Light covers a wide range of modern optics.

**Contact:** Prof. Dr. Gisela Anton – 09131/85-27151

[gisela.anton@physik.uni-erlangen.de](mailto:gisela.anton@physik.uni-erlangen.de) – [www.fau.de](http://www.fau.de)

### Industrial Engineering

#### *Friedrich-Alexander Universität Erlangen-Nürnberg*

##### **Erlangen-Nürnberg, Bavaria**

They acquire basic and thorough technical and methodological skills in industrial engineering and scientific methods and knowledge can apply independently. Internships, seminars and the bachelor thesis offer you the opportunity to gain intensive study-related experiences.

**Contact:** Patrick Schmitt – 09131/85-20707 – [patrick.schmitt@mb.uni-erlangen.de](mailto:patrick.schmitt@mb.uni-erlangen.de)

<http://www.wiso.uni-erlangen.de/>

### Physics

#### *Universität München*

##### **München, Bayern**

Basic events to experimental physics, theoretical physics, mathematics, chemistry, computational physics, Soft Skills. First focus in one of the areas of specialization in preparation for a possible future master's program..

**Contact:** Prof. Dr. R. Girwitz – 089 / 2180 - 5803 – [info@stuve.uni-muenchen.de](mailto:info@stuve.uni-muenchen.de)

<http://www.physik.lmu.de/>

### Physics

#### *Universität Regensburg*

##### **Regensburg, Bavaria**

The bachelor's degree in physics provides a solid education that enables direct access to the research in the context of a subsequent master's program and it is offered a wide range of subjects except physical side.

**Contact:** Prof. Dr. Josef Zweck – 0941 /943-2590 – [josef.zweck@physik.uni-r.de](mailto:josef.zweck@physik.uni-r.de)

<http://www.uni-regensburg.de/>

## GERMANY

### **Nanostructure Technology** **Universität Würzburg**

#### **Würzburg, Bavaria**

Are already in the bachelor's program, taught in addition to general scientific and engineering fundamentals, look at methods of making and functioning of nanostructures.

**Contact:** *Dr. Tobias Kießling – 0931/ 31 81465*

*studienberatung@physik.uni-wuerzburg.de – <http://www.physik.uni-wuerzburg.de/>*

### **Physics** **Universität Würzburg**

#### **Würzburg, Bavaria**

In bachelor will comprehensively provides all essential scientific foundations, which are required for scientific work in research in industry later. A variety of electives, such as biophysics, is assignable.

**Contact:** *Dr. Tobias Kießling – 0931/ 31 81465*

*studienberatung@physik.uni-wuerzburg.de – <http://www.physik.uni-wuerzburg.de/>*

**GREECE**

## GREECE

### **BSc in Physics** *University of Crete, Department of Physics*

#### **Heraklion**

General Physics course. Appropriate choice of elective courses offers students the possibility of a more indepth knowledge in various fields including Photonics

**Contact:** +30 2810 394308 – [kandida@physics.uoc.gr](mailto:kandida@physics.uoc.gr)

<http://www.physics.uoc.gr/en>

### **BSc in Physics** *University of Patras, Department of Physics*

#### **Patras**

General Physics course. Appropriate choice of elective courses offers students the possibility of a more indepth knowledge in various fields including Photonics

**Contact:** +30 2610 996077

<http://www.physics.upatras.gr/index.php?lang=en>

### **BSc in Physics** *Aristotle University of Thessaloniki, Department of Physics*

#### **Thessaloniki**

General Physics course. Appropriate choice of elective courses offers students the possibility of a more indepth knowledge in various fields including Photonics

**Contact:** +30 2310 998140 – [info@physics.auth.gr](mailto:info@physics.auth.gr)

<http://www.physics.auth.gr/home/index>

### **BSc in Physics** *National and Kapodistrian University of Athens, Department of Physics*

#### **Athens**

General Physics course. Appropriate choice of elective courses offers students the possibility of a more indepth knowledge in various fields including Photonics

**Contact:** [secr@phys.uoa.gr](mailto:secr@phys.uoa.gr)

<http://en.phys.uoa.gr/>

## GREECE

### **BSc in Physics**

***University of Ioannina, Department of Physics***

#### **Ioannina**

General Physics course. Appropriate choice of elective courses offers students the possibility of a more indepth knowledge in various fields including Photonics

**Contact:** +30 26510 07490 – [gramphys@uoi.gr](mailto:gramphys@uoi.gr)

<http://www.physics.uoi.gr/en/node/27>

### **BSc in Physics**

***National Technical University of Athens, Faculty of Applied Mathematical and Physical Sciences ,Department of Physics***

#### **Athens**

General Physics course. Appropriate choice of elective courses offers students the possibility of a more indepth knowledge in various fields including Photonics

**Contact:** +30 210 7723025 – [e\\_phys@mail.ntua.gr](mailto:e_phys@mail.ntua.gr)

<http://semfe.ntua.gr/en/department-of-physics>

### **BSc in Materials Science and Technology**

***University of Crete, Department of Materials Science and Technology***

#### **Heraklion**

General Materials Science and Technology course. Appropriate choice of elective courses offers students the possibility of a more indepth knowledge in various fields including Photonic materials and technologies

**Contact:** +30 2810 394270 – [secretariat@materials.uoc.gr](mailto:secretariat@materials.uoc.gr)

<https://www.materials.uoc.gr/>

### **Diploma in Electrical and Computer Engineering**

***National Technical University of Athens, School of Electrical and Computer Engineering***

#### **Athens**

General Electrical and Computer Engineering course. Appropriate choice of elective courses offers students the possibility of a more indepth knowledge in various fields including Photonics

**Contact:** +30 210 7722023 – [semfe@central.ntua.gr](mailto:semfe@central.ntua.gr)

<http://semfe.ntua.gr/en/department-of-physics>

## GREECE

### **Diploma in Electronic and Computer Engineering** *Technical University of Crete, School of Electronic and Computer Engineering*

#### **Chania**

General Electronic and Computer Engineering course. Appropriate choice of elective courses offers students the possibility of a more indepth knowledge in various fields including Photonics

**Contact:** +30 28210 37358 – [secretary@ece.tuc.gr](mailto:secretary@ece.tuc.gr)

<http://www.ece.tuc.gr/4481.html>

### **Diploma in Electrical and Computer Engineering** *University of Thessaly, Department of Electrical and Computer Engineering*

#### **Volos**

General Electrical and Computer Engineering course. Appropriate choice of elective courses offers students the possibility of a more indepth knowledge in various fields including Photonics

**Contact:** +30 24210 74934 – [gece@e-ce.uth.gr](mailto:gece@e-ce.uth.gr)

<https://www.e-ce.uth.gr/?lang=en>

### **Diploma in Electrical and Computer Engineering** *Aristotle University of Thessaloniki, School of Electrical and Computer Engineering*

#### **Thessaloniki**

General Electrical and Computer Engineering course. Appropriate choice of elective courses offers students the possibility of a more indepth knowledge in various fields including Photonics

**Contact:** +30 2310 996392 – [info@ee.auth.gr](mailto:info@ee.auth.gr)

<http://ee.auth.gr/en/>



GREECE

**Diploma in Electrical and Computer Engineering**  
***Democritus University of Thrace, Department of Electrical and Computer Engineering***

**Xanthi**

General Electrical and Computer Engineering course. Appropriate choice of elective courses offers students the possibility of a more indepth knowledge in various fields including Photonics

**Contact:** +30 25410 79011 – [info@ee.duth.gr](mailto:info@ee.duth.gr)

<http://duth.gr/department/ee/>

**Diploma in Electrical and Computer Engineering**  
***University of Patras, Department of Electrical and Computer Engineering***

**Patras**

General Electrical and Computer Engineering course. Appropriate choice of elective courses offers students the possibility of a more indepth knowledge in various fields including Photonics

**Contact:** +30 2610 996420

<http://www.ece.upatras.gr/en/>

**IRELAND**

## IRELAND

### **Bachelor of Science** ***NUI Galway***

#### **Galway**

A programme which allows you to take a variety of subjects in the general scientific field before deciding to specialise in one scientific area for your four-year honours degree. This leads to specialities in topics such as: Photonics, Nanotechnologies, Advanced materials, Industrial Biotechnology, Nano-/ Micro Electronics, and Advanced Manufacturing.  
**Contact:** 353 (0)91 492182 – [science@nuigalway.ie](mailto:science@nuigalway.ie) – [http://www.nuigalway.ie/courses/undergraduate-courses/science-undenominated.html#course\\_overview](http://www.nuigalway.ie/courses/undergraduate-courses/science-undenominated.html#course_overview)

### **Bachelor of Science in Physics and Instrumentation** ***G.M.I.T.***

#### **Galway**

Physics with Forensics, Electronic Instrumentation, Experimental Physics Digital Systems and Interfacing, Principles of Instrumentation & Calibration, Computer Programming, Green Energy Technology, Project, Control Systems, Forensic Analysis Techniques, Thermodynamics & Energy, Robotics & Automation.  
**Contact:** Dr. Seamus Lennon – 091-742081 – [seamus.lennon@gmit.ie](mailto:seamus.lennon@gmit.ie) – <http://www.gmit.ie/physics-and-instrumentation/bachelor-science-physics-and-instrumentation>

### **BSc (Hons) in Physics for Modern Technology** ***Waterford Institute of Technology***

#### **Waterford**

An inter-disciplinary course which provides students with an understanding of the physics underlying modern technologies such as semiconductors, optics/photonics, alternative energy, and sensor systems  
**Contact:** Dr. Claire Keary – 51834087 – [CKEARY@wit.ie](mailto:CKEARY@wit.ie) – [https://www.wit.ie/courses/school/science/department\\_of\\_computing\\_maths\\_physics/bsc\\_hons\\_in\\_physics\\_for\\_modern\\_technology#tab=description](https://www.wit.ie/courses/school/science/department_of_computing_maths_physics/bsc_hons_in_physics_for_modern_technology#tab=description)

### **BSc BIOLOGICAL AND BIOMEDICAL SCIENCES** ***NUI Maynooth***

#### **Kildare**

The application of biomedical science to medical/clinical use  
**Contact:** Terry Roche – 353 1 708 3843 – [terry.roche@nuim.ie](mailto:terry.roche@nuim.ie) – <https://www.maynoothuniversity.ie/study-maynooth/undergraduate-studies/courses/bsc-biological-and-biomedical-sciences>

## IRELAND

### **BSc THEORETICAL PHYSICS & MATHEMATICS (SCIMS)**

***NUI Maynooth***

#### **Kildare**

Theoretical physicists study the entire physical world from the microscopic astrophysical world. The scope of its subject area ranges over such topics as, semiconductors, lasers, fractals, chaos, black holes, the Big Bang, the fundamental forces of nature, neural networks and the simulation of physical and biological systems.

**Contact:** *Daniel Heffernan – 01 708 3774 – [dmh@thphys.nuim.ie](mailto:dmh@thphys.nuim.ie) – <https://www.maynoothuniversity.ie/study-maynooth/undergraduate-studies/courses/bsc-theoretical-physics-mathematics-scims>*

### **BSc PHYSICS WITH ASTROPHYSICS**

***NUI Maynooth***

#### **Kildare**

You will study the latest telescopes, satellites, detector technology and data analysis techniques used to make the exquisitely sensitive observations needed in modern astrophysics. In addition you will receive an excellent grounding in all the core areas of Experimental Physics, opening up all the career opportunities available to physicists.

**Contact:** *N/A – 353 1 708 3641 – [physics.department@nuim.ie](mailto:physics.department@nuim.ie) – <https://www.maynoothuniversity.ie/study-maynooth/undergraduate-studies/courses/bsc-physics-astrophysics>*

### **Applied Physics and Instrumentation**

***Cork Institute of Terchnology***

#### **Cork**

The aim of this course is to prepare graduates for a range of technical positions within the multi-disciplinary field of Applied Physics and Instrumentation. Whilst there is particular emphasis on employment within process industries, such as chemical, pharmaceutical, biotechnology, food, beverage and water, graduates are well equipped for employment in other sectors such as computers, medical devices and microelectronics, as well as in hospitals and in research and development.

**Contact:** *Richard Peard – 021 4335870 – [richard.peard@cit.ie](mailto:richard.peard@cit.ie) – <http://www.cit.ie/course/CR001>*

## IRELAND

### **Bachelor of Science in Applied Physics** *University of Limerick*

#### **Limerick**

The programme is four years in duration. The first two years provide you with a strong foundation in the following areas: Mechanics, Thermodynamics, Optics, Electromagnetism, Modern Physics, Experimental Physics, Chemistry, Electronics, Computing, Mathematics. The third and fourth years of study provide core material in the following areas: Quantum Mechanics, Semiconductors, Nanotechnology, Optoelectronics, Medical Physics.

**Contact:** Dr. Ian Clancy – 00 353 61 202015 – [ian.clancy@ul.ie](mailto:ian.clancy@ul.ie) – <http://www3.ul.ie/courses/AppliedPhysics.php>

### **Theoretical physics** *Trinity College Dublin*

#### **Dublin**

Theoretical Physics explores the natural world at its most fundamental level, using mathematical theories guided by experimental investigation. For some it is the foundation for an academic career in mathematics or physics. For others it provides the basis for many career options in industry, medicine, law, finance and computing. Trinity provides a course which ranges widely across physics and mathematics. Its graduates are in demand for their technical skills and versatility

**Contact:** Ms. Una Dowling – +353 1 896 1949 / 2019 – [dowlingu@tcd.ie](mailto:dowlingu@tcd.ie) – <http://www.tcd.ie/courses/undergraduate/az/course.php?id=DUBES-TPHY-1F09>

### **Nanoscience, physics and chemistry of advanced materials** *Trinity College Dublin*

#### **Dublin**

*New methods of fabricating or interacting with such nanostructures is what nanoscience is all about. Nanoscience incorporates applications in energy, photonics, medical diagnostics, ultra-fast electronics and many other areas.*

**Contact:** Prof. Georg Duesberg – 353 1 8961675 – [npcam@tcd.ie](mailto:npcam@tcd.ie) – <http://www.tcd.ie/courses/undergraduate/az/course.php?id=DUBES-NANO-1F09>

## IRELAND

### **B.Sc. in Applied Physics (Bachelor Honours Degree)** *Dublin City University*

#### **Dublin**

The basic foundations of physics will be laid in Years One and Two, while in Years Three and Four you can choose to study specialist topics such as instrumentation, nanotechnology, semiconductor materials plasma-physics and biophotonics.

**Contact:** *Dr Tony Cafolla – 353 1 7005332 – [tony.cafolla@dcu.ie](mailto:tony.cafolla@dcu.ie) – [https://www101.dcu.ie/prospective/deginfo.php?classname=AP&degree\\_description=B.Sc.+in+Applied+Physics+%2528Bachelor+Honours+Degree%2529](https://www101.dcu.ie/prospective/deginfo.php?classname=AP&degree_description=B.Sc.+in+Applied+Physics+%2528Bachelor+Honours+Degree%2529)*

### **B.Eng. Electronic and Computer Engineering (DC190) Bachelor Honours Degree** *Dublin City University*

#### **Dublin**

ECE with a Major in Systems and Devices - This is a specialisation in core electronics and semiconductor technologies that underpin research priority areas from sensors, diagnostics, medical devices, digital control of mechatronic systems to optical communications and novel materials.

**Contact:** *Ms Breda McManus – 354 1 7005131 – [mcmanusb@eeng.dcu.ie](mailto:mcmanusb@eeng.dcu.ie) – [https://www101.dcu.ie/prospective/deginfo.php?classname=ECE&originating\\_school=](https://www101.dcu.ie/prospective/deginfo.php?classname=ECE&originating_school=)*

### **B.Sc. in Physics with Biomedical Sciences** *Dublin City University*

#### **Dublin**

Physics with Biomedical Sciences is a gateway to a wide range of careers. Armed with highly marketable skills, you will be a powerful addition to any workforce. As a graduate you will be well placed to take on a career in areas such as biomedical instrumentation, clinical and diagnostic services, medical imaging and image processing or lasers and medical optical systems, to give but a few examples.

**Contact:** *Dr Jean-Paul Mosnier – 355 1 7005303 – [jean-paul.mosnier@dcu.ie](mailto:jean-paul.mosnier@dcu.ie) – [https://www101.dcu.ie/prospective/deginfo.php?classname=PBM&degree\\_description=B.Sc.+in+Physics+with+Biomedical+Sciences](https://www101.dcu.ie/prospective/deginfo.php?classname=PBM&degree_description=B.Sc.+in+Physics+with+Biomedical+Sciences)*

## IRELAND

### **Physics with Energy and Environment** *Dublin Institute of Technology*

#### **Dublin**

Physics: Problem Based Learning & Lectures (Optics & Electromagnetism, Mechanics, Relativity, Heat & Thermodynamics, Electronics & Semiconductors, Quantum Mechanics, Condensed Matter & Nuclear Physics, Vibrations & Waves, Renewable Energy, Technology for Sustainability, Environmental Physics, Atmospheric Physics), Mathematics IT & Computing Entrepreneurial Studies for Scientists

**Contact:** *Dr John Doran – 01 402 4953 – [john.doran@dit.ie](mailto:john.doran@dit.ie) – <http://dit.ie/studyatdit/undergraduate/programmescourses/allcourses/physicswithenergyandenvironmentdt221.html>*

### **Physics Technology** *Dublin Institute of Technology*

#### **Dublin**

Optics, Electromagnetism & Lasers, Condensed Matter, Electronics Ionising & Non Ionising Radiation, Quantum Mechanics, Physics of Materials, Thermal Physics, Computation, Environmental & Remote Sensing, Vacuum Techniques for Nanotechnology

**Contact:** *Dr Siobhan Daly – 01 402 4927 – [siobhan.daly@dit.ie](mailto:siobhan.daly@dit.ie) – <http://dit.ie/studyatdit/undergraduate/programmescourses/allcourses/physicstechnologydt222.html>*

### **Physics with Medical Physics & Bioengineering** *Dublin Institute of Technology*

#### **Dublin**

Medical Devices, Bioengineering and Rehabilitation Engineering, Medical Imaging and Radiotherapy

**Contact:** *Dr Jacinta Browne – 01 402 4737 – [jacinta.browne@dit.ie](mailto:jacinta.browne@dit.ie) – <http://dit.ie/studyatdit/undergraduate/programmescourses/allcourses/physicswithmedicalphysicsbioengineeringdt235.html>*

**ITALY**



ITALY

**Corso di Laurea in Ottica e Optometria**  
**Università degli Studi di Padova**

**Padova, Veneto**

The Degree in Optics and Optometry aims to train professionals capable of working in the field of optics and optometry. The educational objectives are to provide a solid basic education in classical and modern physics and a timely preparation on optometric applications.

**Contact:** Raffaella Cesaro – +39498277068 – [raffaella.cesaro@unipd.it](mailto:raffaella.cesaro@unipd.it)  
<http://www.dfa.unipd.it/index.php?id=373>

**Corso di Laurea in Ottica e Optometria**  
**Università degli Studi di Firenze**

**Firenze, Toscana**

**Contact:** Stefano Cavaliere – +390554572041 – [cavaliere@fi.infn.it](mailto:cavaliere@fi.infn.it)  
<http://www.ottica.unifi.it/index.php>

**Corso di Laurea in Ottica e Optometria**  
**Università degli Studi di Milano Bicocca**

**Milano, Lombardia**

**Contact:** Gina Granatino – +390264485102 – [segreteria.didattica@mater.unimib.it](mailto:segreteria.didattica@mater.unimib.it)  
<http://www.mater.unimib.it/it/didattica/ottica-e-optometria>

**Corso di Laurea in Ottica e Optometria**  
**Università degli Studi di Milano Bicocca**

**Milano, Lombardia**

**Contact:** Gina Granatino – +390264485102 – [segreteria.didattica@mater.unimib.it](mailto:segreteria.didattica@mater.unimib.it)  
<http://www.mater.unimib.it/it/didattica/ottica-e-optometria>

**Corso di Laurea in Ottica e Optometria**  
**Università degli Studi di Torino**

**Torino, Piemonte**

**Contact:** Daniela Ciuffreda – +390116707392 – [smfn-cdl-oo@unito.it](mailto:smfn-cdl-oo@unito.it)  
<http://otticaeoptometria.campusnet.unito.it/do/home.pl>

ITALY

**Corso di Laurea in Ottica e Optometria**  
**Università degli Studi di Roma Tre**

**Roma, Lazio**

**Contact:** Laura Chiarotti – +390657336447 – [didattica.ottica@uniroma3.it](mailto:didattica.ottica@uniroma3.it)  
<http://www.scienze.uniroma3.it/courses/1>

**Corso di Laurea in Ottica e Optometria**  
**Università degli Studi di Napoli**

**Napoli, Campania**

**Contact:** Nicola Miranda – +39081676874 – [segreteria@na.infn.it](mailto:segreteria@na.infn.it)  
[http://www.fisica.unina.it/didattica/triennale\\_ottica.html](http://www.fisica.unina.it/didattica/triennale_ottica.html)

**Corso di Laurea in Ottica e Optometria**  
**Università del Salento**

**Lecce, Puglia**

**Contact:** Luigi Solombrino – +390832297429 – [luigi.solombrino@unisalento.it](mailto:luigi.solombrino@unisalento.it)  
[https://www.scienzefn.unisalento.it/cdl\\_ottica\\_optometria](https://www.scienzefn.unisalento.it/cdl_ottica_optometria)

**LITHUANIA**

## LITHUANIA

### BA-level course : Laser Physics with Computers

#### Vilnius, Lithuania

Equations describing lasers and their modelling. Learning outcomes Students will learn the processes which take place in laser medium as well as during the propagation of laser light in linear and nonlinear medium. They will learn to create numerical models of such processes with Matlab.

**Contact:** Laima Mikalauskiene – +370 5 2366005 – [laima.mikalauskiene@ff.vu.lt](mailto:laima.mikalauskiene@ff.vu.lt)  
<http://www.lasercenter.vu.lt/en/studies/2015-03-12-07-45-28/computer-based-laser-physics>

### BA-level course : Light Technologies

#### Vilnius, Lithuania

By the end of the course the students are expected to be familiar with the newest achievements in light technologies, be able to apply the knowledge in some optical systems. Students gain an understanding of the theoretical generalization and practical application of light technologies.

**Contact:** Laima Mikalauskiene – +370 5 2366005 – [laima.mikalauskiene@ff.vu.lt](mailto:laima.mikalauskiene@ff.vu.lt)  
<http://www.lasercenter.vu.lt/en/studies/2015-03-12-07-45-28/light-technologies>

### BA-level course : Laser Physics

#### Vilnius, Lithuania

By the end of the course the students are expected to understand and explain the principles and design considerations of various lasers, understand the principles of ultrashort pulse generation and amplification, gain the basic skills of practical work with lasers.

**Contact:** Laima Mikalauskiene – +370 5 2366006 – [laima.mikalauskiene@ff.vu.lt](mailto:laima.mikalauskiene@ff.vu.lt)  
<http://www.lasercenter.vu.lt/en/studies/2015-03-12-07-45-28/laser-physics>

## LITHUANIA

### BA-level course : Physics of Waves

#### Vilnius, Lithuania

The aim of course is to unify the study of waves by developing abstract and general features common to all wave motion. It is done by examining a sequence of concrete and specific examples. Students will be able to comprehend a wave phenomena and use their knowledge in other fields of physics.

**Contact:** Laima Mikalauskienė – +370 5 2366007 – [laima.mikalauskiene@ff.vu.lt](mailto:laima.mikalauskiene@ff.vu.lt)  
<http://www.lasercenter.vu.lt/en/studies/2015-03-12-07-45-28/physics-of-waves>

### BA-level course : Optics and Atomic Physics

#### Vilnius, Lithuania

This is a shorten optics an atomic physics course with an intend to give the basic of theoretical and practical knowledge for the students of the main optics and atomic physics chapters like geometrical optics, polarization, photometry, interference, diffraction, quantum optics, quantum mechanics.

**Contact:** Laima Mikalauskienė – +370 5 2366007 – [laima.mikalauskiene@ff.vu.lt](mailto:laima.mikalauskiene@ff.vu.lt)  
<http://www.lasercenter.vu.lt/en/studies/2015-03-12-07-45-28/optics-and-atomic-physics>

### BA-level course : Photonics Fundamentals

#### Vilnius, Lithuania

After course, students will gain the knowledge and understanding of the various light phenomena explaining models and their applicability limits. Students will understand the various light beam propagation in optical elements.

**Contact:** Gintaras Dikčius – +370 5 236 6089 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt)  
<http://www.ff.vu.lt/en/studies/information>

## LITHUANIA

### BA-level course : Laser Application in Biology and Medicine

#### Vilnius, Lithuania

Main aim - to provide students the latest information about optical technologies used in biomedicine, understanding about such technologies and devices and their operating principles adaptation.

**Contact:** *Gintaras Dikčius* – +370 5 236 6089 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt)  
<http://www.ff.vu.lt/en/studies/information>

### BA-level course : Nanophotonics

#### Vilnius, Lithuania

The main aim - introduce students with artificial materials – photonic crystals, applications and light propagation in the photonic band gap materials (PBG).

**Contact:** *Raimundas Žaltauskas* – +370 5 2790053 – [raimundas.zaltauskas@leu.lt](mailto:raimundas.zaltauskas@leu.lt)  
[leu.lt/download/29949/nanophotonics.doc](http://leu.lt/download/29949/nanophotonics.doc)

### BA-level course : Phenomena of Modern Optics and Nanophotonics

#### Kaunas, Lithuania

Students gains physics knowledge about laser working principles. Understands the nature of optical material properties and familiarize with modern optical elements. Gets introduction to continuous and pulsed laser light interaction with optical materials.

**Contact:** *Tomas Tamulevičius* – +370 662 26308 – [tomas.tamulevicius@ktu.lt](mailto:tomas.tamulevicius@ktu.lt)  
<http://ktu.edu/en/studies>

**NETHERLANDS**

## NETHERLANDS

### HBO-Bachelor Technische Natuurkunde

#### Enschede, Overijssel

Are you interested in the development of nanotechnology? Or curious about the workings of a 3D TV? Whether you want to know about new medical equipment, such as a camera pill? Then Applied Physics is for you!

**Contact:** (00) 31 (0)570 - 60 37 00 – [info@saxion.nl](mailto:info@saxion.nl)  
<http://www.saxion.nl/tn>

### HBO-Bachelor Technische Natuurkunde

#### Delft, South Holland

Applied Physics Applied Physics. The formulas and calculation that you're doing in the last few years, suddenly get on the exciting side.

**Contact:** 00 31 (0)15 - 260 6200 – <http://www.dehaagsehogeschool.nl/bachelorstudies/aanbodopleidingen/technische-natuurkunde-voltijd-delft/studie/algemeen>

### HBO-Bachelor Technische Natuurkunde

#### Eindhoven, North Brabant

With Applied Physics combine your interest in physics with the latest developments and applications in technology.

**Contact:** 00 31 (0)8850 77311 – [TNW@fontys.nl](mailto:TNW@fontys.nl)  
<http://fontys.nl/Studeren/Opleidingen/Technische-Natuurkunde.htm>



**SLOVAKIA**

## SLOVAKIA

### Electronics

#### Bratislava, Western Slovakia

Basics of photonics and optoelectronics and their applications in information technology and sensorics.

**Contact:** Prof. Frantisek Uherek – 421905630144 – [frantisek.uherek@stuba.sk](mailto:frantisek.uherek@stuba.sk)  
[www.stuba.sk](http://www.stuba.sk)

### Electrotechnics

#### Bratislava, Western Slovakia

Basics of electrotechnics, mechatronics, industrial informatics.

**Contact:** Prof. Ing. František Janiček, PhD. – +421-2-602 91 298  
[frantisek.uherek@stuba.sk](mailto:frantisek.uherek@stuba.sk) – [www.stuba.sk](http://www.stuba.sk)

### Biotechnologies

#### Trnava, Western Slovakia

Basic methods of optical spectroscopy in the field of biotechnologies.

**Contact:** 00421 33 / 55 65 321, 323 – [dekan.fpv@ucm.sk](mailto:dekan.fpv@ucm.sk) – <http://fpv.ucm.sk/sk/>

### Chemistry and applied chemistry

#### Trnava, Western Slovakia

Basic methods of optical spectroscopy in the laboratory practice.

**Contact:** 00421 33 / 55 65 321, 323 – [dekan.fpv@ucm.sk](mailto:dekan.fpv@ucm.sk) – <http://fpv.ucm.sk/sk/>

### Biomedical engineering

#### Zilina, Northern Slovakia

Basics of optics and optical methods and their use in biomedical engineering.

**Contact:** 00421 33 / 55 65 321, 323 – [sekrdek@fel.uniza.sk](mailto:sekrdek@fel.uniza.sk) – <http://fel.uniza.sk/>

### Chemistry

#### Kosice, Eastern Slovakia

Spectroscopical methods in chemical analyses in anorganic and organic chemistry.

**Contact:** 00421 55 62 221 24 – [pfsekret@upjs.sk](mailto:pfsekret@upjs.sk)  
<http://www.upjs.sk/prirodovedecka-fakulta/>

## SLOVAKIA

### Physics

#### **Košice, Eastern Slovakia**

Course of physics with subjects concerning lasers, optics and spectroscopy and their potential use.

**Contact:** 00421 55 62 221 24 – [pfsekret@upjs.sk](mailto:pfsekret@upjs.sk)  
<http://www.upjs.sk/prirodovedecka-fakulta/>

### Teaching of academic subjects-chemistry in combination

#### **Košice, Eastern Slovakia**

Basic methods of optical spectroscopy in the study of organic and anorganic chemistry with pedagogical background.

**Contact:** 00421 55 62 221 24 – [pfsekret@upjs.sk](mailto:pfsekret@upjs.sk)  
<http://www.upjs.sk/prirodovedecka-fakulta/>

### Teaching of academic subjects-physics in combination

#### **Bratislava, Western Slovakia**

Includes different areas of physics, where optics and photonics are a part of the course - experimental methods, lasers and optics etc.

**Contact:** Ing. Iveta Gašparová – 00421 (0)2 602 95 – [so\(at\)fmph.uniba.sk](mailto:so(at)fmph.uniba.sk)  
[www.fmph.uniba.sk](http://www.fmph.uniba.sk)

### Biomedical physics

#### **Bratislava, Western Slovakia**

Physical aspects of living organisms with optics and photonics following almost the whole course.

**Contact:** Ing. Iveta Gašparová – 00421 (0)2 602 95 – [so\(at\)fmph.uniba.sk](mailto:so(at)fmph.uniba.sk)  
[www.fmph.uniba.sk](http://www.fmph.uniba.sk)

### Physics

#### **Bratislava, Western Slovakia**

Course of physics with subjects concerning lasers, optics and spectroscopy.

**Contact:** Ing. Iveta Gašparová – 00421 (0)2 602 95 – [so\(at\)fmph.uniba.sk](mailto:so(at)fmph.uniba.sk)  
[www.fmph.uniba.sk](http://www.fmph.uniba.sk)

## SLOVAKIA

### Chemistry and Biochemistry

#### Bratislava, Western Slovakia

Spectroscopical methods in chemical analyses in anorganic and organic chemistry.

**Contact:** 00421(02)602-96-11 – [so@fns.uniba.sk](mailto:so@fns.uniba.sk) – [www.fns.uniba.sk](http://www.fns.uniba.sk)

### Teaching of academic subjects-chemistry in combination

#### Bratislava, Western Slovakia

Basic spectroscopical methods in chemical analyses in anorganic and organic chemistry with pedagogical background.

**Contact:** 00421(02)602-96-11 – [so@fns.uniba.sk](mailto:so@fns.uniba.sk) – [www.fns.uniba.sk](http://www.fns.uniba.sk)

**SPAIN**

## SPAIN

### Bachelor's Degree in Physics

#### Valencia, Valencia

The Degree in Physics aims to provide a solid training based on physical phenomena and the laws and models that explain them, providing familiarity with the language of mathematics, the experimental method, sophisticated instrumentation and computational methods. It also provides an introduction to various leading basic and applied research fields such as optics and photonics.

**Contact:** M<sup>a</sup> Carmen Martínez Tomás (+34)963544754 [carmen.martinez-tomas@uv.es](mailto:carmen.martinez-tomas@uv.es)  
[www.uv.es/graus/fisica](http://www.uv.es/graus/fisica)

### Bachelor's Degree in Optics and Optometry

#### Valencia, Valencia

The aim of the Degree in Optics and Optometry is to produce highly-qualified specialists in visual healthcare by organising activities aimed at the prevention, detection, analysis and treatment of alterations in vision.

**Contact:** Francisco Sañudo Buitrago (+34)963543208 [Francisco.Sanudo@uv.es](mailto:Francisco.Sanudo@uv.es)  
[www.uv.es/grado/optica](http://www.uv.es/grado/optica)

### Bachelor's Degree in Nanotechnology

#### Bellaterra, Barcelona

The UAB Bachelor's Degree in Nanoscience and Nanotechnology offers studies of an interdisciplinary nature: it combines content from physics, chemistry, biology and mathematics and it focuses on areas of application, like technology, materials, biotechnology, medicine, energy and the environment. Photonics are found in several of its areas, including physics or chemistry, where many phenomena are studied in the optical point of view as well as using many photonics-related microscopies.

**Contact:** Maria del Pilar Casado Lechuga (+34)935814285 [pilar.casado@uab.cat](mailto:pilar.casado@uab.cat)  
[www.uab.cat](http://www.uab.cat)

### Bachelor's Degree in Physics

#### Bellaterra, Barcelona

The Bachelor's Degree in Physics at the UAB has two main purposes: firstly, to aid students in acquiring a solid scientific foundation; secondly, to aid them in acquiring interdisciplinary and transversal scientific training. Many photonics-related subjects and techniques are studied.

**Contact:** Carles Navau Ros (+34)93581 2596 [carles.navau@uab.cat](mailto:carles.navau@uab.cat)  
[www.uab.cat](http://www.uab.cat)

## SPAIN

### Bachelor's Degree in Engineering Physics

#### Barcelona, Barcelona

This bachelor's degree will enable you to understand basic scientific principles and their application in the key emerging technologies that will drive development in the years ahead: photonics, nanotechnology, micro- and nanoelectronics, advanced materials and biotechnology

**Contact:** Josep Lluís Tamarit Mur (+34)93 4016564 [josep.lluis.tamarit@upc.edu](mailto:josep.lluis.tamarit@upc.edu)  
[enginyeriafisica.etsetb.upc.edu/ca](http://enginyeriafisica.etsetb.upc.edu/ca)

### Bachelor's Degree in Biomedical Engineering

#### Barcelona, Barcelona

The bachelor's degree in Biomedical Engineering provides the knowledge needed to supervise and manage engineering projects related to the design of equipment for monitoring, diagnosis and treatment and information and communication systems for healthcare, remote medicine, remote monitoring and equipment quality control.

**Contact:** Xavier Gil Mur (+34)934137400 [gestio.academica.euetib@upc.edu](mailto:gestio.academica.euetib@upc.edu)  
[www.euetib.upc.edu](http://www.euetib.upc.edu)

### Bachelor's Degree in Optics and Optometry

#### Terrassa, Barcelona

In the bachelor's degree in Optics and Optometry, you will study both medical and technology-related subjects, developing the knowledge and skills needed to diagnose, prevent and treat vision problems.

**Contact:** Joan Gispets Parcerisas (+34)937398300 [info.foot@upc.edu](mailto:info.foot@upc.edu)  
[foot.upc.edu](http://foot.upc.edu)

### Bachelor's Degree in Physics

#### Leioa, Bizkaia

Broad physics degree in which photonics is present in their fundamental fields including optical background and techniques as well as light nature and phenomena.

**Contact:** Physics Faculty (+34)946012000 [acceso@ehu.es](mailto:acceso@ehu.es)  
[www.ehu.es/en/en-home](http://www.ehu.es/en/en-home)

## SPAIN

### Bachelor's Degree in Physics

#### Barcelona, Barcelona

You will learn the physical and theoretical phenomena of physics and the laws and models which govern and explain these, the skills to formulate functional and quantitative relationships in mathematical language for problem solving and experimental methods to develop scientific knowledge and validate theories and models.

**Contact:** *Marta Ibañes Minguez (+34)934039177 mibanas@ub.edu*  
[www.ub.edu](http://www.ub.edu)

### Bachelor's Degree in Optics and Optometry

#### Santiago de Compostela, Santiago

This Bachelor's Degree trains Primary Care Health Professionals, which performs sight and eye exams, design, verification and adaptation of optical systems, design and development of sight training programs.

**Contact:** *María Jesus Giraldez Fernandez (+34)881811000 mjesus.giraldez@usc.es*  
[www.usc.es/graos/en/degrees/health-science/optics-and-optometry](http://www.usc.es/graos/en/degrees/health-science/optics-and-optometry)

### Bachelor's Degree in Physics

#### Santiago de Compostela, Santiago

Physicists' great versatility is undeniable and it puts them in an advantageous position due to their expertise and the diversity of career opportunities available to them.

**Contact:** *Jose Manuel Sanchez de Santos (+34)881811000 josemanuel.sanchez.desantos@usc.es*  
[www.usc.es/graos/en/degrees/science/physics](http://www.usc.es/graos/en/degrees/science/physics)



**SWEDEN**

## SWEDEN

### Optics - Theory and Application *Linköping University*

#### Linköping

The aim of the course is to give basic knowledge electromagnetic waves with a focus on optics. After successful examination the student should;

- be able to solve problems related to geometrical optics
- be able to solve problems related to wave optics
- be able to solve problems related to photon optics

**Contact:** Kenneth Järrendahl – [kenneth.jarrendahl@liu.se](mailto:kenneth.jarrendahl@liu.se)

[http://kdb-5.liu.se/liu/lith/studiehandboken/svkursplan.lasso?&k\\_kurskod=TFYA84&k\\_budget\\_year=2015](http://kdb-5.liu.se/liu/lith/studiehandboken/svkursplan.lasso?&k_kurskod=TFYA84&k_budget_year=2015)

### Electromagnetism and Waves (SK1110) *Royal Institute of Technology*

#### Stockholm

- Electrostatics : Field and potential, Gauss's theorem, metals and dielectrics, the capacitor, electrostatic energy.
- Magnetism : Sources of the field, force and torque, magnetic materials and magnetic energy, technical applications, induction and inductance, mechanical waves.
- Electromagnetic waves : Geometrical optics, polarization, interference and diffraction, coherence.

**Contact:** U Göran Manneberg – +46 8 553 781 27 – [mabego@kth.se](mailto:mabego@kth.se)

<https://www.kth.se/student/kurser/kurs/SK1110?l=en>

### Electromagnetism and Waves (SK1111) *Royal Institute of Technology*

#### Stockholm

- Electrostatics: Electric force, field and potential, Gauss's theorem, electric field and potential in metals and dielectrics, principles of the capacitor, electrostatic energy.
- Magnetism: Sources of the field, force and torque, magnetic materials and magnetic energy, technical applications, induction and inductance.
- Waves: Mechanical waves and acoustics. Generation of electromagnetic waves, polarisation, interference and diffraction, coherence. Lasers. Basic geometrical optics. Technical applications.

**Contact:** Lars-Gunnar Andersson – 5537 8107 – [lga@physics.kth.se](mailto:lga@physics.kth.se)

<https://www.kth.se/student/kurser/kurs/SK1111?l=en>

## SWEDEN

### **Electromagnetism and Waves (SK1114)** *Royal Institute of Technology*

#### **Stockholm**

- Electrostatics : Electric force, electric field and potential, Gauss's theorem, electric fields in metals and dielectrics, the capacitor, electrostatic energy.
- Magnetic fields : Sources of the field, force and torque, magnetic materials and magnetic energy. Electromagnetic induction. Introduction to the relationship between electric and magnetic fields, Maxwells equations.
- Mechanical waves : Fundamental wave concepts. Acoustics and ultrasound. Technical applications.
- Electromagnetic waves : Generation, polarisation, interference, diffraction and applications. Basic geometrical optics. The laser, camera, telescope, microscope and the human eye.

**Contact:** *Martin Viklund – +46 8 553 781 34 – [bmw@kth.se](mailto:bmw@kth.se)*  
<https://www.kth.se/student/kurser/kurs/SK1114?l=en>

### **Photography for Media (SK1140)** *Royal Institute of Technology*

#### **Stockholm**

Optical imaging, Photographic Lens, Perspective, photometry camera's components and their function, Electronic image sensors, sampling criteria applied to digital images, Color Photography, Quality Dimensions of images (resolution, MTF, noise, dynamics).

**Contact:** *Kjell S Carlsson – +46 8 553 781 32 – [kjellc@kth.se](mailto:kjellc@kth.se)*  
<https://www.kth.se/student/kurser/kurs/SK1140?l=en>

### **Physics (SK1113)** *Royal Institute of Technology*

#### **Stockholm**

Electrostatics: Field and potential, Gauss's theorem, metals and dielectrics, the capacitor, electrostatic energy.

Magnetism: Sources of the field, force and torque, magnetic materials and magnetic energy, technical applications, induction and inductance, mechanical waves.

Electromagnetic waves: Geometrical optics, polarization, interference and diffraction, coherence.

**Contact:** *U Göran Manneberg – +46 8 553 781 27 – [mabego@kth.se](mailto:mabego@kth.se)*  
<https://www.kth.se/student/kurser/kurs/SK1113?l=en>

## SWEDEN

### **Physics I (SK1112)** **Royal Institute of Technology**

#### **Stockholm**

- Electrostatics: Field and potential, Gauss's theorem, metals and dielectrics, the capacitor, electrostatic energy.
- Magnetism: Sources of the field, force and torque, magnetic materials and magnetic energy, technical applications, induction and inductance, mechanical waves.
- Electromagnetic waves: Geometrical optics, polarization, interference and diffraction, coherence.

**Contact:** U Göran Manneberg – +46 8 553 781 27 – [mabego@kth.se](mailto:mabego@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK1112?l=en>

### **Physics: Waves and Particles (SK1131)** **Royal Institute of Technology**

#### **Stockholm**

The course gives an introduction to university physics with electromagnetism, quantum-, atomic-, nuclear- and material physics alignment.

**Contact:** Fredrik Laurell – +46 8 553 781 53 – [flaurell@kth.se](mailto:flaurell@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK1131?l=en>

### **Classical Physics (SK1101)** **Royal Institute of Technology**

#### **Stockholm**

Basic concepts of classical physics accompanied by laboratory sessions.

**Contact:** U Göran Manneberg – +46 8 553 781 27 – [mabego@kth.se](mailto:mabego@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK1101?l=en>

### **Classical Physics (SK1102)** **Royal Institute of Technology**

#### **Stockholm**

Basic concepts of classical physics accompanied by laboratory sessions.

**Contact:** U Göran Manneberg – +46 8 553 781 27 – [mabego@kth.se](mailto:mabego@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK1102?l=en>

## SWEDEN

### **Classical Physics for CL (SK1103)** **Royal Institute of Technology**

#### **Stockholm**

Basic concepts of classical physics accompanied by laboratory sessions.

**Contact:** U Göran Manneberg – +46 8 553 781 27 – [mabego@kth.se](mailto:mabego@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK1103?l=en>

### **Lasers and Applications (SK181N)** **Royal Institute of Technology**

#### **Stockholm**

The course aims to give basic knowledge about the construction and functioning of the laser. The course will also show how the laser can be used within application as information technology, environmental science and medicine.

**Contact:** Martin Viklund & Olli Launila – +46 8 553 781 34 – [bmw@kth.se](mailto:bmw@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK181N?l=en>

### **Waves (SK1120)** **Royal Institute of Technology**

#### **Stockholm**

Fundamental wave entities.

- Mechanical waves: Intensity, reflection, standing waves, acoustical phenomena and metrology, ultrasonic waves.
- Electromagnetic waves: Geometrical optics, polarization, interference and diffraction, coherence. The laser and the laser beam. Optical fibers.

**Contact:** U Göran Manneberg – +46 8 553 781 27 – [mabego@kth.se](mailto:mabego@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK1120?l=en>

### **Fundamental Physics I (SK1150)** **Royal Institute of Technology**

#### **Stockholm**

Mechanics, Electromagnetism and Atomic Physics

**Contact:** Lars-Gunnar Andersson – 5537 8107 – [lga@physics.kth.se](mailto:lga@physics.kth.se)  
<https://www.kth.se/student/kurser/kurs/SK1150?l=en>

## SWEDEN

### **Project Work in Applied Physics (SK2001)** **Royal Institute of Technology**

#### **Stockholm**

The project consists of an independent work within a problem area as determined by the examiner. It will normally be part of an advanced course in technical area and be on an advanced level. The project work shall correspond to 20 weeks full-time studies. The work will be presented in a written report and presented orally at an open seminar.

**Contact:** <https://www.kth.se/student/kurser/kurs/SK2001?l=en>

### **Optics** **Chalmers University of Technology**

#### **Gothenburg**

Aims to introduce optics, as an important part of physics, in the Engineering physics programme.

**Contact:** *Jörgen Bengtsson* – 031 772 15 91 – [jorgen.bengtsson@chalmers.se](mailto:jorgen.bengtsson@chalmers.se)  
[https://www.student.chalmers.se/sp/course?course\\_id=23199](https://www.student.chalmers.se/sp/course?course_id=23199)

### **High Frequency Electromagnetic Waves** **Chalmers University of Technology**

#### **Gothenburg**

The aim of this course is to give a basic description and understanding of high frequency electromagnetic wave phenomena as they occur in modern applications as e.g. fibre optics, laser and microwave techniques and microelectronics. The students will learn to apply Maxwell's electromagnetic theory.

**Contact:** *Magnus Karlsson, Vincent Desmaris* – 031 772 15 90 – [magnus.karlsson@chalmers.se](mailto:magnus.karlsson@chalmers.se) – [https://www.student.chalmers.se/sp/course?course\\_id=23128](https://www.student.chalmers.se/sp/course?course_id=23128)

### **Optics and Photonics** **Luleå University of Technology**

#### **Gothenburg**

For 3<sup>rd</sup> year students on Y (Engineering physics and Elec.)

**Contact:** *Mikael Sjö Dahl, Vincent Desmaris* – 0920-491220 – [mikael.sjodahl@ltu.se](mailto:mikael.sjodahl@ltu.se)

**UK**

## UK

### Physics

#### *University of Aberdeen*

##### **Aberdeen, Scotland**

Light Science and Practical Optics & Electronics is a compulsory 2nd year course.

**Contact:** +44 (0) 1224 273504 – [sras@abdn.ac.uk](mailto:sras@abdn.ac.uk)

<http://www.abdn.ac.uk/study/courses/undergraduate/F300/>

### Physical Sciences

#### *University of Aberdeen*

##### **Aberdeen, Scotland**

Light Science and Practical Optics & Electronics is a compulsory 2nd year course.

**Contact:** +44 (0) 1224 273504 – [sras@abdn.ac.uk](mailto:sras@abdn.ac.uk)

<http://www.abdn.ac.uk/study/courses/undergraduate/F302/>

### Physics

#### *Aberystwyth University*

##### **Aberystwyth, Wales**

Optics is a compulsory 2nd year course, while optronics is a compulsory 3rd year course.

**Contact:** Dr. Balazs Pinter – +44 (0) 1970 628624 – [phys-admissions@aber.ac.uk](mailto:phys-admissions@aber.ac.uk)

<https://courses.aber.ac.uk/undergraduate/bsc-physics-degree/>

### Applied Physics

#### *Aston University*

##### **Aston, West Midlands**

A and 2 Bs minimum of maths and Physics. Commercial and industrial applications of Physics.

**Contact:** Dr Sonia Boscolo – +44(0)121 204 3495 – [s.a.boscolo@aston.ac.uk](mailto:s.a.boscolo@aston.ac.uk)

[www.aston.ac.uk/study/undergraduate/courses/school/eas/bsc-applied-Physics/](http://www.aston.ac.uk/study/undergraduate/courses/school/eas/bsc-applied-Physics/)

### Physics

#### *University of Bath*

##### **Bath, Southwest England**

Optics is a compulsory 2nd year course, while optronics is a compulsory 3rd year course.

**Contact:** Dr. Balazs Pinter – +44 (0) 1970 628624 – [phys-admissions@aber.ac.uk](mailto:phys-admissions@aber.ac.uk)

<https://courses.aber.ac.uk/undergraduate/bsc-physics-degree/>



## UK

### Physics

#### **Queen's University Belfast**

##### **Belfast, Ireland**

Optics, Lasers, Quantum Mechanics and Optoelectronics will be covered by the course.

**Contact:** +44 (0) 28 9097 3838 – [admissions@qub.ac.uk](mailto:admissions@qub.ac.uk)

<http://www.qub.ac.uk/home/StudyatQueens/CourseFinder/UG/Physics/F303/>

### Physics

#### **The University of Birmingham**

##### **Birmingham, West Midlands**

Optics, Waves and Quantum Mechanics taught in first year. Optional Optics in 2nd year.

**Contact:** +44(0)121 414 4563 – [Physics-adms@bham.ac.uk](mailto:Physics-adms@bham.ac.uk)

<http://www.birmingham.ac.uk/undergraduate/courses/Physics/Physics-bsc.aspx>

### Applied Physics

#### **The University of Bradford**

##### **Bradford, Yorkshire and the Humber**

One core module is the Optics, Waves and Oscillations module.

**Contact:** +44 (0) 800 073 1225 – [admissions-eng-inf@bradford.ac.uk](mailto:admissions-eng-inf@bradford.ac.uk)

<http://www.bradford.ac.uk/study/courses/view/?c=applied-Physics-bsc-3-years>

### Physics

#### **University of Bristol**

##### **Bristol, Southwest England**

Modern Optics in year 3.

**Contact:** +44 (0)117 394 1639 – [sci-ug-admissions@bristol.ac.uk](mailto:sci-ug-admissions@bristol.ac.uk)

[www.bristol.ac.uk/study/undergraduate/2016/Physics/bsc-Physics/](http://www.bristol.ac.uk/study/undergraduate/2016/Physics/bsc-Physics/)

### Mathematics with Physics

#### **University of Cambridge**

##### **Cambridge, East of England**

Choice of Quantum Mechanics in year 2. No other links to Photonics.

**Contact:** +44(0) 122 376 6879 – [admissions@maths.cam.ac.uk](mailto:admissions@maths.cam.ac.uk)

<http://www.undergraduate.study.cam.ac.uk/courses/mathematics>

## UK

### Natural Sciences

#### University of Cambridge

##### Cambridge, East of England

Optics and Quantum Mechanics is offered in the first year, Quantum Mechanics in 2nd year, In the 3rd and 4th years, Quantum condensed matter Physics and advanced Quantum theory

**Contact:** +44 (0) 122 376 6879 – [admissions@maths.cam.ac.uk](mailto:admissions@maths.cam.ac.uk)

<http://www.undergraduate.study.cam.ac.uk/courses/mathematics>

### Physics

#### Cardiff University

##### Cardiff, Wales

Optics is a compulsory module in the 2nd year, while laser physics and non-linear physics is an optional module in the 3rd year.

**Contact:** Dr Chris North – + 44 (0) 292 087 0537 – [Admissions@astro.cf.ac.uk](mailto:Admissions@astro.cf.ac.uk)

<http://courses.cardiff.ac.uk/undergraduate/course/detail/F300.html>

### Natural Sciences

#### University of Chester

##### Chester, North West England

Quantum Physics in year 1 with Quantum Mechanics in year 2.

**Contact:** +44 (0) 124 451 1000 – [enquiries@chester.ac.uk](mailto:enquiries@chester.ac.uk)

<http://www.chester.ac.uk/undergraduate/natural-sciences>

### Physics with Materials Science

#### University of Chester

##### Chester, North West England

Quantum Physics in year 1 with Quantum Mechanics in year 2.

**Contact:** Graham Smith – +44 (0) 124 451 1000 – [enquiries@chester.ac.uk](mailto:enquiries@chester.ac.uk)

<http://chester.ac.uk/undergraduate/Physics-materials-science>

### Physics

#### University College Cork

##### Cork, Republic of Ireland

Quantum Physics is a module in the 2nd year while Quantum Mechanics is in the 3rd year. Optics is an optional module in the 3rd year

**Contact:** Prof John McInerney – +353 (0)21 490 2468 – [j.mcinerney@ucc.ie](mailto:j.mcinerney@ucc.ie)

<http://www.physics.ucc.ie/>

## UK

### **Applied Physics and Instrumentation** **Cork Institute of Technology**

#### **Cork, Republic of Ireland**

Applied optics is a course in the 2nd year.

**Contact:** Richard Peard – +44(0)021 4335870 – [richard.peard@cit.ie](mailto:richard.peard@cit.ie)

<http://www.cit.ie/course/CR001>

### **Environmental Science & Sustainable Technology** **Cork Institute of Technology**

#### **Cork, Republic of Ireland**

Applied optics is a course in the 2nd year.

**Contact:** Eamonn Butler – +44 (0) 021 433 5870 – [eamonn.butler@cit.ie](mailto:eamonn.butler@cit.ie)

<http://www.cit.ie/course/CR365>

### **Applied Mathematics and Theoretical Science** **Coventry University**

#### **Coventry, West Midlands**

Quantum Physics in the second year.

**Contact:** +44 (0) 24 7765 2222 – [studentenquiries@coventry.ac.uk](mailto:studentenquiries@coventry.ac.uk)

<http://www.coventry.ac.uk/course-structure/2015/faculty-of-engineering-and-computing/undergraduate/applied-mathematics-and-theoretical-Physics-bsc-hons/?theme=main>

### **Mathematics and Physics** **De Monfort University**

#### **Coventry, West Midlands**

Quantum Physics in the second year.

**Contact:** +44 (0) 24 7765 2222 – [studentenquiries@coventry.ac.uk](mailto:studentenquiries@coventry.ac.uk)

<http://www.coventry.ac.uk/course-structure/engineering-and-computing/undergraduate-degree/2016-17/mathematics-and-Physics-bsc-hons/?theme=main>

### **Physics** **The University of Bradford**

#### **Leicester, East Midlands**

Optics and Quantum Physics are course modules.

**Contact:** +44 (0)116 2 50 60 70

<http://www.dmu.ac.uk/study/courses/undergraduate-courses/Physics-bsc-hons.aspx>

## UK

### **Applied Physics** **Dublin City University**

#### **Dublin, Republic of Ireland**

Light and Optics is a 1st year course available, Quantum physics is a 2nd year course, while Quantum mechanics is taught in year 3. There is a wave optics module in year 3.

**Contact:** Dr Tony Cafolla – 353 170 05332 – [tony.cafolla@dcu.ie](mailto:tony.cafolla@dcu.ie)  
<https://www.dcu.ie/prospective/deginfo.php?classname=AP>

### **Physics** **University College Dublin**

#### **Dublin, Republic of Ireland**

Fields, waves and light is a first year module, electromagnetism and optics and introductory quantum mechanics are taught in year 2. Quantum mechanics, Optics and Lasers and applied optics are taught in year 3.

**Contact:** Emma Sokell – 35317167777 – [emma.sokell@ucd.ie](mailto:emma.sokell@ucd.ie)  
<http://www.ucd.ie/physics/undergraduatestudents/dn200physics/>

### **Science with Nanotechnology** **Dublin Institute of Technology**

#### **Dublin, Republic of Ireland**

Optics, Lasers and Quantum physics are taught in the third year.

**Contact:** Dr. Gordon Chambers – 01 402 2856 – [gordon.chambers@dit.ie](mailto:gordon.chambers@dit.ie)  
<http://www.dit.ie/study/undergraduate/programmes/dt227/>

### **Physics with Energy & Environment** **Dublin Institute of Technology**

#### **Dublin, Republic of Ireland**

Optics and Quantum mechanics are taught in the second year, Optics, Electromagnetism and Lasers are offered along with Quantum Physics in the third year.

**Contact:** Dr John Doran – 01 402 4953 – [john.doran@dit.ie](mailto:john.doran@dit.ie)  
<http://www.dit.ie/study/undergraduate/programmes/dt221/>

### **Physics Technology** **Dublin Institute of Technology**

#### **Dublin, Republic of Ireland**

Optics and Quantum Mechanics are courses taught in the second year. Optics, Electromagnetism & Lasers and Quantum Physics are taught in the third year. Lasers & Optical communications, Applied Optical Spectroscopy & Advanced Optics are taught in the fourth year.

**Contact:** Siobhan Daly – 01 402 4927 – [siobhan.daly@dit.ie](mailto:siobhan.daly@dit.ie)  
<http://www.dit.ie/study/undergraduate/programmes/dt222/>

## UK

### Physics

#### University of Dundee

##### Dundee, Scotland

You will study Light, Waves, Optics, Quantum Mechanics and Quantum properties of matter. There are advanced Quantum Mechanics, Photonics and Optics if you take a masters degree.

**Contact:** Graham Smith – +44 (0)1382 38 38 38 – [SSE@dundee.ac.uk](mailto:SSE@dundee.ac.uk)

<http://www.dundee.ac.uk/study/ug/physics/>

### Electronic Engineering and Physics

#### University of Dundee

##### Dundee, Scotland

This course is a variation of the Physics bachelors, which includes the study of Light, Waves, Optics, Quantum Mechanics and Quantum properties of matter along with electronic engineering modules.

**Contact:** Prof John McInerney – +44 (0)1382 38 38 38 – [SSE@dundee.ac.uk](mailto:SSE@dundee.ac.uk)

<http://www.dundee.ac.uk/study/ug/physics/>

### Physics

#### Durham University

##### Durham, North East

Quantum theory is a core module in year 3.

**Contact:** +44 (0)191 334 3726 – [Physics.admissions@durham.ac.uk](mailto:Physics.admissions@durham.ac.uk)

<https://www.dur.ac.uk/courses/info/?id=7002&title=Physics&code=F300&type=BSC&year=2015>

### Chemical Physics

#### University of East Anglia

##### Norwich, East of England

Quantum Mechanics in first year with Modern Chemical Physics, such as Laser Interactions, in the third year.

**Contact:** 01603 591515 – [admissions@uea.ac.uk](mailto:admissions@uea.ac.uk)

[http://www.uea.ac.uk/study/undergraduate/degree/detail/bsc-chemical-Physics?utm\\_campaign=web\\_listing\\_UCAS&utm\\_source=SCI\\_CHE\\_UG&utm\\_medium=listing&utm\\_content=BSc\\_Chemical\\_Physics](http://www.uea.ac.uk/study/undergraduate/degree/detail/bsc-chemical-Physics?utm_campaign=web_listing_UCAS&utm_source=SCI_CHE_UG&utm_medium=listing&utm_content=BSc_Chemical_Physics)

## UK

### Physics

#### University of Edinburgh

##### Edinburgh, Scotland

Quantum Physics is offered in years 2 and 3, with advanced quantum modules available throughout the degree and particularly in years 3 and 4. A Lasers & Optics module is offered in the fourth year.

**Contact:** Caroline Keir – +44 (0) 131 651 7855 – [enquiries@ph.ed.ac.uk](mailto:enquiries@ph.ed.ac.uk)  
[http://www.ed.ac.uk/studying/undergraduate/degrees?id=0,4&cw\\_xml=subject.php](http://www.ed.ac.uk/studying/undergraduate/degrees?id=0,4&cw_xml=subject.php)

### Physics

#### University of Exeter

##### Exeter, South West England

Waves and Optics is a compulsory module in year 1, Quantum Mechanics in year 2, and optional modules in year 3 and 4 include Quantum applications- Lasers and Quantum Optics and Photonics.

**Contact:** +44 (0)1392 725349 – [ug-ad-phys@exeter.ac.uk](mailto:ug-ad-phys@exeter.ac.uk)  
<http://www.exeter.ac.uk/undergraduate/degrees/Physics/physicsbsc>

### Physics and Astronomy

#### University of Glasgow

##### Glasgow, Scotland

Optics and Quantum Mechanics are taught through the degree, while years 3 and 4 offer modules in Laser physics and other modules related to photonics.

**Contact:** Dr Morag Casey – (+44) 141 330 4709 – [phas-ugadmissions@glasgow.ac.uk](mailto:phas-ugadmissions@glasgow.ac.uk)  
<http://www.gla.ac.uk/undergraduate/degrees/Physics/#/programmestructure>

### Engineering Physics

#### Heriot Watt University

##### Edinburgh, Scotland

Photonics is studied in the second year, Optics in the third year along with Optical Processing and Laser Physics in the Fourth year.

**Contact:** Patrik Ohberg – +44 (0)131 451 3025 – [physics@eps.hw.ac.uk](mailto:physics@eps.hw.ac.uk)  
<http://www.undergraduate.hw.ac.uk/programmes/F314/>

### Physics with Energy Science and Technology

#### Heriot-Watt University

##### Edinburgh, Scotland

Photonics is studied in the second year, Optics in the third year along with Optical Processing and Laser Physics in the Fourth year.

**Contact:** Patrik Ohberg – +44 (0)131 451 3025 – [physics@eps.hw.ac.uk](mailto:physics@eps.hw.ac.uk)  
<http://www.undergraduate.hw.ac.uk/programmes/F390/>

## UK

### Nano-science

#### *Heriot-Watt University*

##### **Edinburgh, Scotland**

This degree contains material common to all the physics programs along with relevant biology and chemistry. Photonics, lasers and optics may be studied as options and as part of the course.

**Contact:** Patrik Ohberg – +44 (0)131 451 3025– [physics@eps.hw.ac.uk](mailto:physics@eps.hw.ac.uk)  
<http://www.undergraduate.hw.ac.uk/programmes/CF10/>

### Physics

#### *Heriot-Watt University*

##### **Edinburgh, Scotland**

Photonics is studied in the second year, Optics in the third year along with Optical Processing and Laser Physics in the Fourth year..

**Contact:** Patrik Ohberg – +44 (0)131 451 3025– [physics@eps.hw.ac.uk](mailto:physics@eps.hw.ac.uk)  
<http://www.undergraduate.hw.ac.uk/programmes/F300/>

### Physics

#### *University of Hertfordshire*

##### **Hertfordshire, East of England**

The first year includes Quantum Optics, Quantum Physics, Optical Physics and Contemporary Quantum Physics.

**Contact:** Dr Mark Thompson – [M.A.Thompson@herts.ac.uk](mailto:M.A.Thompson@herts.ac.uk)  
<http://www.herts.ac.uk/courses/Physics>

### Physics

#### *University of Hull*

##### **Hull, Yorkshire and the Humber**

Quantum Physics and Mechanics are studied in years 1, 2 and 3. Optical Communications and Photonic Devices are also available in year 3.

**Contact:** 0300 330 1504 – [admissions@hull.ac.uk](mailto:admissions@hull.ac.uk)  
<http://www2.hull.ac.uk/ug/courses/Physics.aspx>

### Physics

#### *Imperial College*

##### **London, Greater London**

There are many Photonics related courses such as Quantum Physics and Mechanics, Optics, BioPhotonics and Lasers.

**Contact:** Dr Juliet Pickering – +44 (0)20 7594 7513 – [ph.admissions@imperial.ac.uk](mailto:ph.admissions@imperial.ac.uk)  
<http://www.imperial.ac.uk/study/ug/courses/Physics-department/Physics/>

## UK

### **Experimental Physics**

#### ***National University of Ireland, Maynooth***

##### **Maynooth, Republic of Ireland**

This degree covers the topics of Optics, Lasers and Quantum Mechanics.

**Contact:** +353 1 708 3641 – [physics.department@nuim.ie](mailto:physics.department@nuim.ie)

<https://www.maynoothuniversity.ie/experimental-physics/physics>

### **Physics and Applied Physics (GY320)**

#### ***National University of Ireland, Galway***

##### **Galway, Republic of Ireland**

Optics & Quantum mechanics are offered in the third year of this course.

**Contact:** Tess Mahoney – +353 91 492490 – [Tess.Mahoney@nuigalway.ie](mailto:Tess.Mahoney@nuigalway.ie)

[http://www.nuigalway.ie/faculties\\_departments/physics/courses/denominated.html](http://www.nuigalway.ie/faculties_departments/physics/courses/denominated.html)

### **Physics with Environmental Studies**

#### ***Keele University***

##### **Staffordshire, Midlands**

Quantum Mechanics and Optics & Thermodynamics modules are offered in the second year. Advanced Quantum Mechanics modules are offered in the third year.

**Contact:** 01782 734005 – [admissions.ukcu@keele.ac.uk](mailto:admissions.ukcu@keele.ac.uk)

<http://www.keele.ac.uk/ugcourses/physics/#tabs-1>

### **Physics**

#### ***University of Kent***

##### **Canterbury, South East**

This course offers Quantum Physics, Optics, Light and Relativity Optics.

**Contact:** +44 (0)1227 827272 – [information@kent.ac.uk](mailto:information@kent.ac.uk)

<http://www.kent.ac.uk/courses/undergraduate/22/Physics-bsc#!structure>

### **Physics or Physics with Medical Application**

#### ***King's College London***

##### **London, Greater London**

Quantum Physics and Optics are both available to study at the King's College.

**Contact:** 020 7848 7517 – [nms-ugadmissions@kcl.ac.uk](mailto:nms-ugadmissions@kcl.ac.uk)

<http://www.kcl.ac.uk/prospectus/undergraduate/structure/name/physics>



## UK

### Physics

#### *University of Glasgow*

##### **Glasgow, Scotland**

Optics and Quantum Physics are course modules in year 1 and are expanded on in year 2. Laser Physics is studied in year 3.

**Contact:** Dr Morag Casey – (+44) 141 330 5685 – [phas-ugadmissions@glasgow.ac.uk](mailto:phas-ugadmissions@glasgow.ac.uk)  
<http://www.gla.ac.uk/undergraduate/degrees/physics/>

### Applied Physics

#### *University of Central Lancashire*

##### **Central Lancashire, North West England**

Quantum Physics in the second year and Quantum Mechanics in the third year.

**Contact:** 01772 830777 – [uadmissions@uclan.ac.uk](mailto:uadmissions@uclan.ac.uk)  
[http://www.uclan.ac.uk/courses/bsc\\_physics\\_foundation\\_entry.php](http://www.uclan.ac.uk/courses/bsc_physics_foundation_entry.php)

### Physics

#### *Lancaster University*

##### **Lancaster, North West England**

Lasers and Applications, Quantum Mechanics and Quantum Physics and Optics are all included modules.

**Contact:** +44 (0)1524 592261 – [enquiries@chester.ac.uk](mailto:enquiries@chester.ac.uk)  
<http://www.chester.ac.uk/undergraduate/natural-sciences>

### Physics with Materials Science

#### *University of Chester*

##### **Chester, North West England**

Quantum Physics in year 1 with Quantum Mechanics in year 2.

**Contact:** Graham Smith – +44 (0) 124 451 1000 –  
[physics-ugadmissions@lancaster.ac.uk](mailto:physics-ugadmissions@lancaster.ac.uk)  
<http://www.lancaster.ac.uk/study/undergraduate/courses/physics-bsc-hons-f300/>

### Physics

#### *University of Leicester*

##### **Leicester, East Midlands**

Waves and Quanta, Waves and Light and Quantum Mechanics are all studiable.

**Contact:** 0116 252 5281 – [seadmissions@le.ac.uk](mailto:seadmissions@le.ac.uk)  
<http://www2.le.ac.uk/study/ugp/physics/physics>

## UK

### Physics

#### University of Leeds

##### Leeds, North East

Quantum physics is taught in the first two years of this course, while in the third year you may opt to study advanced modules on Quantum optics and Photonics

**Contact:** +44 (0)113 343 3881 – [physics.admissions@leeds.ac.uk](mailto:physics.admissions@leeds.ac.uk)

<http://www.physics.leeds.ac.uk/undergraduate/degree-courses/bsc-physics.html>

### Applied Physics

#### University of Limerick

##### Limerick, Republic of Ireland

Optics is taught in the first two years of this course, and Quantum mechanics and optoelectronics is covered in the third and fourth years of study.

**Contact:** Dr Ian Clancy – 00 353 61 202015 – [admissions@ul.ie](mailto:admissions@ul.ie)

<http://www3.ul.ie/courses/AppliedPhysics.php>

### Mathematics and Physics

#### University of Lincoln

##### Lincoln, East Midlands

Module included in the course are: Geometrical Optics, Quantum Physics and Quantum Mechanics.

**Contact:** 01522 886097 – [admissions@lincoln.ac.uk](mailto:admissions@lincoln.ac.uk)

<http://www.lincoln.ac.uk/home/course/mthphyum/>

### Physics

#### University of Lincoln

##### Lincoln, East Midlands

Module included in the course are: Geometrical Optics, Quantum Physics and Quantum Mechanics.

**Contact:** 01522 886097 – [admissions@lincoln.ac.uk](mailto:admissions@lincoln.ac.uk)

<http://www.lincoln.ac.uk/home/course/mthphyum/>

### Physics

#### University of Liverpool

##### Liverpool, North West England

Quantum Physics is covered in year two, of this course.

**Contact:** +44 (0)151 794 5927 – [irro@liv.ac.uk](mailto:irro@liv.ac.uk)

<http://www.liv.ac.uk/study/undergraduate/courses/physics-bsc-hons/module-details/>

## UK

### **Physics for New Technology** **University of Liverpool**

#### **Liverpool, North West England**

Quantum Physics and Quantum Mechanics are both studied.

**Contact:** +44 (0)151 794 5927 – [irro@liv.ac.uk](mailto:irro@liv.ac.uk)

<https://www.liv.ac.uk/study/undergraduate/courses/physics-for-new-technology-bsc-hons/overview/>

### **Physics** **University College London**

#### **London, Greater London**

Waves, Optics & Acoustics is a module in the first year, Quantum Mechanics is taught in the second and third years while you may opt to study a module on Lasers and modern optics in the third year.

**Contact:** Mrs Joanna Davies – +44 (0)20 7679 7246  
[undergraduate-admissions@ucl.ac.uk](mailto:undergraduate-admissions@ucl.ac.uk)

<http://www.ucl.ac.uk/prospective-students/undergraduate/degrees/physics-bsc/>

### **Physics** **Loughborough University**

#### **Loughborough, Midlands**

Quantum mechanics is taught in the second year, Modern optics is an optional module in the third year.

**Contact:** +44 (0)1509 228409 – [physics.ug@lboro.ac.uk](mailto:physics.ug@lboro.ac.uk)

<http://www.lboro.ac.uk/study/undergraduate/courses/departments/physics/physics/>

### **Physics** **University of Manchester**

#### **Manchester, North West**

Quantum Mechanics is introduced and studied in the first and second years, while topics of study in the third year include electromagnetic radiation and lasers.

**Contact:** +44 (0)161 306 3673 – [ug-physics@manchester.ac.uk](mailto:ug-physics@manchester.ac.uk)

<http://www.physics.manchester.ac.uk/study/undergraduate/undergraduate-courses/physics-bsc/>

### **Applied Physics** **The Manchester Metropolitan University**

#### **Manchester, North West**

Optics is taught in the first year, Quantum effects in the second year. There is the option of studying lasers, optics, and other photonics topics as part of the final year project.

**Contact:** +44 (0)161 247 6969 – [direct@mmu.ac.uk](mailto:direct@mmu.ac.uk)

<http://www2.mmu.ac.uk/study/undergraduate/courses/2016/13252/>

## UK

### Physics

#### *Newcastle University*

##### **Newcastle, North East**

Optics and Quantum Mechanics are both compulsory courses in the second year with advanced quantum mechanics in year three.

**Contact:** +44 (0) 191 208 3333

<http://www.ncl.ac.uk/undergraduate/degrees/f300/courseoverview/#d.en.139167>

### Physics

#### *Northumbria University*

##### **Newcastle, North East**

Optics and Quantum Mechanics are both compulsory courses in the second year with advanced quantum mechanics in year three.

**Contact:** +44 (0) 191 208 3333

<http://www.ncl.ac.uk/undergraduate/degrees/f300/courseoverview/#d.en.139167>

### Mathematical Physics

#### *The University of Nottingham*

##### **Nottingham, East Midlands**

Optics and Electromagnetism is a compulsory module in the second year, while several modules on Quantum Theory are studied in the third year of this course. Light & Matter and Quantum Coherent Phenomena are optional modules, available in the later years of this course.

**Contact:** Mrs Julie Kenney – +44 (0)115 951 5165 – [julie.kenney@nottingham.ac.uk](mailto:julie.kenney@nottingham.ac.uk)

<http://www.nottingham.ac.uk/ugstudy/courses/physicsandastronomy/bsc-mathematical-physics.aspx>

### Physics with Nanoscience

#### *University of Nottingham*

##### **Nottingham, East Midlands**

This course follows the same syllabus as the BSc Physics programme with a focus on nanophysics modules. Optics and Electromagnetism is a compulsory module in the second year, while several modules on Quantum Theory are studied in the third year of this course. Light & Matter and Quantum Coherent Phenomena are optional modules, available in the later years of this course.

**Contact:** Mrs Julie Kenney – +44 (0)115 951 5165 – [julie.kenney@nottingham.ac.uk](mailto:julie.kenney@nottingham.ac.uk)

<http://www.nottingham.ac.uk/ugstudy/courses/physicsandastronomy/bsc-physics-nanoscience.aspx>

## UK

### Physics

#### *University of Nottingham*

##### **Nottingham, East Midlands**

Optics and Electromagnetism is a compulsory module in the second year, while several modules on Quantum Theory are studied in the third year of this course. Light & Matter and Quantum Coherent Phenomena are optional modules, available in the later years of this course.

**Contact:** Mrs Julie Kenney – +44 (0)115 951 5165 – [julie.kenney@nottingham.ac.uk](mailto:julie.kenney@nottingham.ac.uk)  
<http://www.nottingham.ac.uk/ugstudy/courses/physicsandastronomy/bsc-physics.aspx>

### Physics

#### *Nottingham Trent University*

##### **Nottingham, East Midlands**

An Optics and Semiconductors module is taught in year two.

**Contact:** Edward Breeds – +44 (0)115 848 4200 – [applications@ntu.ac.uk](mailto:applications@ntu.ac.uk)  
[http://www.ntu.ac.uk/apps/pss/course\\_finder/118277-1/39/bsc\\_\(hons\)\\_physics.aspx?yoe=6&st=1&s=1&sv=PHYS&sl=1|2#course](http://www.ntu.ac.uk/apps/pss/course_finder/118277-1/39/bsc_(hons)_physics.aspx?yoe=6&st=1&s=1&sv=PHYS&sl=1|2#course)

### Mathematics and Physics

#### *The Open University*

##### **Milton Keynes, South East**

This is a distance learning, mostly online, university for which you study off-campus. You may choose to study Quantum Physics, Quantum Mechanics and Optics.

**Contact:** +44 (0)1908 659253  
<http://www.open.ac.uk/courses/qualifications/q77#course-details>

### Physics

#### *University of Oxford*

##### **Oxford, South East England**

Optics, Quantum Physics and Quantum Mechanics are core modules spread out throughout the course.

**Contact:** +44 (0) 1865 272200 – [enquiries@physics.ox.ac.uk](mailto:enquiries@physics.ox.ac.uk)  
<http://www.ox.ac.uk/admissions/undergraduate/courses-listing/physics#>

### Applied Physics

#### *University of Portsmouth*

##### **Portsmouth, South East England**

Waves and optics is taught in the second year of this course. In the third year, you have the option to choose to study Quantum mechanics with Application in Quantum Information and Nanostructures and Radiofrequency & Microwave physics.

**Contact:** +44 (0)23 9284 5550 – [science.admissions@port.ac.uk](mailto:science.admissions@port.ac.uk)  
<http://www.port.ac.uk/courses/mathematics-and-physics/bsc-hons-applied-physics/>

## UK

### Physics

#### **Queen Mary University of London**

##### **London, Greater London**

Quantum physics is covered in the first year of this course. Quantum Mechanics is covered in the second year, with the option of studying advanced Quantum Mechanics in the third year. There is a compulsory module on Electromagnetic waves and optics in the second year.

**Contact:** +44 (0)20 7882 5511 – [admissions@qmul.ac.uk](mailto:admissions@qmul.ac.uk)

<http://www.qmul.ac.uk/undergraduate/coursefinder/courses/79938.html>

### Applied Mathematics and Physics

#### **Queen's University Belfast**

##### **Belfast, Northern Ireland**

Quantum theory is taught in year 3 of this programme, with advanced Quantum Theory in year 4.

**Contact:** +44 (0) 28 9097 6005 – [mp@qub.ac.uk](mailto:mp@qub.ac.uk)

<http://www.qub.ac.uk/home/StudyatQueens/CourseFinder/UG/MathematicalStudies/GF13/>

### Physics

#### **Queen's University Belfast**

##### **Belfast, Northern Ireland**

Optics & Lasers and Quantum Theory are modules taught in the first year of this programme. In the second and third years, you will study Optics, electricity & Magnetism. You may also opt to study Electromagnetic Radiation & Modern Optics, Optoelectronics and Physical Electronics, and advanced modules in Quantum Mechanics in the third year.

**Contact:** +44 (0) 28 9097 6005 – [mp@qub.ac.uk](mailto:mp@qub.ac.uk)

<http://www.qub.ac.uk/home/StudyatQueens/CourseFinder/UG/Physics/F300/>

### Environmental Physics

#### **University of Reading**

##### **Reading**

This course includes modules common to many physics degrees, with an emphasis on the applications of physics in environmental science. Optional modules include atmospheric spectroscopy in the third year.

**Contact:** +44 (0) 118 378 8372 – [ugadmissions@reading.ac.uk](mailto:ugadmissions@reading.ac.uk)

<http://www.reading.ac.uk/ready-to-study/study/subject-area/environment-ug/bsc-environmental-physics.aspx>

## UK

### Physics

#### *Royal Holloway University of London*

##### **London, Greater London**

Optics and Quantum Mechanics may be studied in the second year of this course, with advanced Optics and Quantum Mechanics available in the third year.

**Contact:** Gill Green – +44 (0) 1784 443506 – [Gill.Green@rhul.ac.uk](mailto:Gill.Green@rhul.ac.uk)  
<https://www.royalholloway.ac.uk/physics/coursefinder/bscphysics.aspx>

### Experimental Physics

#### *Royal Holloway University of London*

##### **London, Greater London**

Optics and Quantum Mechanics may be studied in the second year of this course, with advanced Optics and Quantum Mechanics available in the third year.

**Contact:** Gill Green – +44 (0) 1784 443506 – [Gill.Green@rhul.ac.uk](mailto:Gill.Green@rhul.ac.uk)  
<https://www.royalholloway.ac.uk/physics/coursefinder/bscexperimentalphysics.aspx>

### Pure and Applied Physics

#### *University of Salford*

##### **Manchester, North West**

Electronics and Optoelectronics is a first year course in this programme. Introductory Optics and Quantum Mechanics are modules in the second year. Advanced Quantum Mechanics and Optics are third year modules.

**Contact:** +44 (0) 161 295 4545 – [i.morrison@salford.ac.uk](mailto:i.morrison@salford.ac.uk)  
<http://www.salford.ac.uk/ug-courses/pure-and-applied-physics>

### Physics

#### *University of Salford*

##### **Manchester, North West**

Electronics and Optoelectronics is a first year course in this programme. Introductory Optics and Quantum Mechanics are modules in the second year. Advanced Quantum Mechanics and Optics are third year modules.

**Contact:** +44 (0) 161 295 4545 – [i.morrison@salford.ac.uk](mailto:i.morrison@salford.ac.uk)  
<http://www.salford.ac.uk/ug-courses/physics2>

### Physics

#### *University of the West of Scotland*

##### **Hamilton, Scotland**

Optics and Quantum Mechanics are modules taught in the third and fourth years of this degree.

**Contact:** 0800 027 1000 – [ask@uws.ac.uk](mailto:ask@uws.ac.uk)  
[http://www.uws.ac.uk/special\\_3\\_years/physics/](http://www.uws.ac.uk/special_3_years/physics/)

## UK

### Physics

#### University of Sheffield

##### Sheffield, North East

Waves and Optics are first year modules. Quantum Physics and further Optics are modules in the second year of the degree. Atomic and Laser physics is a compulsory module in the third year.

**Contact:** +44 (0)114 222 4362 – [physics.ucas@sheffield.ac.uk](mailto:physics.ucas@sheffield.ac.uk)  
<https://www.sheffield.ac.uk/prospectus/courseDetails.do?id=F3002015>

### Physics

#### University of Southampton

##### Southampton, South East

Waves, light and Quanta and an introduction to photonics are first year modules. In the second year, photonics modules include several Quantum Physics modules and Practical Photonics. In the third year there are several photonics modules and you may select a photonics orientated BSc project.

**Contact:** +44 (0)23 8059 2969 – [fpse-ugapply@soton.ac.uk](mailto:fpse-ugapply@soton.ac.uk)  
<http://www.phys.soton.ac.uk/programmes/f300-bsc-physics-3-yrs>

### Physics with Quantum Technology

#### University of Surrey

##### Guildford, South East

Atoms and Quanta is a photonics module in the first year of this degree. In the second year, compulsory photonics modules are Electromagnetic waves, From Atoms to Lasers, Quantum Physics and light lab. In year three, you can study Light and Matter, Nanophotonics and a final project.

**Contact:** +44 (0)1483 681 681 – [ug-enquiries@surrey.ac.uk](mailto:ug-enquiries@surrey.ac.uk)  
<http://www.surrey.ac.uk/undergraduate/physics-quantum-technologies>

### Physics

#### University of St Andrews

##### St Andrews, Scotland

Quantum Mechanics modules are available throughout the degree. Optoelectronics and Nonlinear Optics, Laser Physics, Principles of optics are modules available in the second and third years of this degree. Many more photonics modules are available with the MPhys degree.

**Contact:** +44 (0)1334 46 2150 – [physics@st-andrews.ac.uk](mailto:physics@st-andrews.ac.uk)  
<http://www.st-andrews.ac.uk/courses/route/USHFPHYSPHY/year/2014-5>



UK

**Physics**  
**University of Strathclyde**

**Glasgow, Scotland**

Mechanics, Optics & Waves and Quantum Physics are studied in the first year, and built on in the second and third years. You will complete experiments related to photonics. In the fourth year, you may opt for an introduction to laser physics, laser optics and non-linear optics.

**Contact:** +44(0)1415483362 – [study@phys.strath.ac.uk](mailto:study@phys.strath.ac.uk)  
<http://www.strath.ac.uk/courses/undergraduate/physics/>

**Physics**  
**University of Sussex**

**Brighton, South East**

Oscillations, Waves & Optics is studied in the first year. Quantum Mechanics is taught in years two and three. There is the option of choosing a module on Lasers in the third year and advanced Quantum Mechanics.

**Contact:** +44 (0)1273 678557 – [ug.admissions@physics.sussex.ac.uk](mailto:ug.admissions@physics.sussex.ac.uk)  
<http://www.sussex.ac.uk/study/ug/2015/1563/31104>

**Physics with Nanotechnology**  
**Swansea University**

**Swansea, Wales**

Waves and Optics and The Quantum World are modules in the first year of the degree. Quantum Mechanics modules are continued throughout the degree. Many of the nanotechnology modules relate to or apply photonics.

**Contact:** 01792 295720 – [physics-admissions@swansea.ac.uk](mailto:physics-admissions@swansea.ac.uk)  
<http://www.swansea.ac.uk/undergraduate/courses/science/physics/bsc-physics-and-nanotechnology-f390/#accept>

**Physics**  
**Trinity College Dublin**

**Dublin, Republic of Ireland**

This degree covers experimental and theoretical aspects of Quantum Mechanics and Laser & Modern Optics.

**Contact:** +353 1 896 1675 – [physics@tcd.ie](mailto:physics@tcd.ie)  
<https://www.tcd.ie/courses/undergraduate/az/course.php?id=DUBSC-PYSC-1SCI>

UK

### **Physics**

#### ***University of Warwick***

##### **Warwick, Midlands**

Quantum Phenomena is a first year module. Electromagnetic theory and Optics and Quantum Mechanics and experiemntal physics are second year photonics related modules. In the third year, you may opt to choose the Optoelectronics module.

**Contact:** +44 (0)24 7652 3723 – [ugadmissions@warwick.ac.uk](mailto:ugadmissions@warwick.ac.uk)  
<http://www2.warwick.ac.uk/study/undergraduate/courses/f300/>

### **Physics for Modern Technology**

#### ***Waterford Institute of Technology***

##### **Waterford, Republic of Ireland**

Electromagnetism and Physical Optics is a module available in the second year of this degree. In the third year, photonics related modules are Atomic, Quantum and Solid State device Physics, Physical Optics and Photonics. In year 4 there are modules in Advanced optics and Photonics Applications.

**Contact:** Dr. Claire Keary – 051-834087 – [ckeary@wit.ie](mailto:ckeary@wit.ie)

### **Physics**

#### ***University of York***

##### **York, North East**

Quantum Physics is introduced in the first year. In the second year, you may study Application of Optics, Electromagnetism and Optics, and more Quantum Physics. In the third year there are modules on Nanotechnology, Quantum Computing, Optics and further Quantum Physics.

**Contact:** Dr. Charles Barton – +44 (0)1904 322241 – [physics-admissions@york.ac.uk](mailto:physics-admissions@york.ac.uk)



**MASTERS**

**FRANCE**

## FRANCE

### Dpt. 06 ▶ **Master's degree in Optics** *Université de Nice Sophia Antipolis*

#### **Nice Sophia Antipolis**

The Master's degree in Optics offers quality training which gradually leads students who have basic knowledge of physics into cutting-edge fields related to optics and photonics. The aim of this Master's is to train basic science researchers and scientists capable of working at the heart of problems concerning industrial optics.

**Contact:** Pascal BALDI – Tél. +33 (0)4 92 07 67 52 – [pascal.baldi@unice.fr](mailto:pascal.baldi@unice.fr)  
<http://masteroptique.unice.fr>

### Dpt. 10 ▶ **Master's degree in Optics and Nanotechnology (ONT)** *Université de technologie de Troyes (UTT)*

#### **Troyes**

The ONT specialism is based on an «optical» approach to associated nanotechnologies and physics. It provides training on R&D activities using tools and methods that are principally optical in order to manufacture nanostructures and components and characterise their physicochemical properties using scanning probe microscopy in particular..

**Entrée :** Bac +3 ou +4 **Sortie :** Bac +5 – Formation initiale et continue

**Contact:** Gilles LÉRONDEL – Tél. +33 (0)3 25 71 58 74 – [gilles.lerondel@utt.fr](mailto:gilles.lerondel@utt.fr)  
[www.utt.fr/fr/formation/master-en-sciences--technologies--sante/specialite-ont.html](http://www.utt.fr/fr/formation/master-en-sciences--technologies--sante/specialite-ont.html)

### Dpt. 13 ▶ **Master's and Doctorate in Europhotonics** *Aix-Marseille Université*

#### **Marseille, Karlsruhe, Barcelone, Florence**

Erasmus Mundus programme financed by Europe; this international path for the Master's in OPSI is aimed at understanding and testing matter and nanometric optical phenomena, provide images and monitoring tools for complex biological processes and consider creating tools for future optical devices.

**Contact:** Hugues GIOVANNINI – Tél. +33 (0)4 91 28 83 26 – [hugues.giovannini@fresnel.fr](mailto:hugues.giovannini@fresnel.fr)

Sophie BRASSELET – Tél. +33 (0)4 91 28 83 26 – [sophie.brasselet@fresnel.fr](mailto:sophie.brasselet@fresnel.fr)

Nadège GUILLEM – Tél. +33 (0)4 91 28 83 26 – [nadege.guillem@fresnel.fr](mailto:nadege.guillem@fresnel.fr)

[www.europhotonics.org/wordpress](http://www.europhotonics.org/wordpress)

## FRANCE

### Dpt. 13 ▶ Optical Instrumentation and Lasers (specialism of the Master's in Physics and Master's in Instrumentation) *Aix-Marseille Université*

#### **Marseille**

This Master's degree accompanies a national competitiveness cluster ([www.popsud.org](http://www.popsud.org)). This European-wide cluster for competitiveness and innovation, comprising 150 companies, offers opportunities and an environment to train students on the design and use of lasers, complex optical systems and modern testing methods.

**Contact:** *Philippe AMRAM – Tél. +33 (0)4 91 28 83 73 or +33 (0)4 95 04 41 00*  
*philippe.amram@oamp.fr*  
*<http://sites.univ-provence.fr/m2iol/>*

### Dpt. 13 ▶ Radiation, Energy, Spectroscopy (RES) *Aix-Marseille Université*

#### **Campus Saint-Jérôme, Marseille**

This M2 (2nd year) of the Master's degree, which is a specialism of the Master's in Physics, trains high-level scientists capable of identifying the physical causes of a problem and proposing new lines of research. We offer a specialism in the physics of diluted mediums and the interaction of radiation with matter, with an introduction to spectroscopic methods.

**Contact:** *Joël ROSATO – Tél. +33 (0)4 91 28 86 24 – joel.rosato@univ-amu.fr*  
*[www.m2res.piim.up.univ-mrs.fr](http://www.m2res.piim.up.univ-mrs.fr)*

### Dpt. 14 76 ▶ Electronics and Waves (specialism of the Master's in Electronics, Electrotechnics, Waves and Norman Automation) *Université de Caen Basse-Normandie, Université du Havre*

#### **Caen, Le Havre**

The specialism trains managers in electronics, microelectronics, instrumentation with a low sound level and applied acoustic waves to facilitate integration into the professional world or continue with a doctorate. The course comprises two parts: «Sound, sensors, microelectronics» in Caen and «Waves» in Le Havre.

**Contact:** *Jean-Marc ROUTOURE – Tél. +33 (0)2 31 45 27 22*  
*jean-marc.routoure@unicaen.fr*  
*<http://ufrsciences.unicaen.fr/>*

## FRANCE

### Dpt. 13 ▶ **École Centrale Marseille** **IRIS – Photonics and innovative systems**

#### **Marseille**

The objective is to train general engineers capable of understanding all aspects of photonics, learning its concepts in order to use them in the design and implementation of complex systems. The programme shows how to combine various disciplines in order to create systems using waves and photons.

**Contact:** Mireille COMMANDRÉ – Tél. +33 (0)4 91 28 80 69

[mireille.commandre@centrale-marseille.fr](mailto:mireille.commandre@centrale-marseille.fr)

[http://formation.centrale-marseille.fr/option\\_3A/IRIS](http://formation.centrale-marseille.fr/option_3A/IRIS)

### Dpt. 14 ▶ **Advanced Instrumentation** **ENSICAEN (Specialism in Electronics and Applied Physics)**

#### **Caen**

The Advanced instrumentation major at ENSICAEN trains engineers capable of designing an instrument channel (sensor, acquisition, processing and transmission of signals). It offers in-depth teaching (250 hours) in optics and involves a collaboration with a group of partners in industry, of which 50% of members work in the field of optics.

**Contact:** Hervé GILLES (Manager) – Tél. +33 (0)2 31 45 27 50

[herve.gilles@ensicaen.fr](mailto:herve.gilles@ensicaen.fr) – [www.ensicaen.fr](http://www.ensicaen.fr)

### Dpt. 22 ▶ **Optronics engineer** **ENSSAT**

#### **Lannion**

ENSSAT trains engineers capable of designing, developing and integrating optical and optoelectronic systems as well as their electronic and digital environment. Opportunities open to engineers involve all fields of photonics: telecommunication, defence and security, life sciences, environment, industrial processes using optical techniques (imaging, diagnostics, metrology, measurements and instrumentation, etc.).

**Contact:** Thierry CHARTIER – Tél. 02 96 46 90 00 – [responsable.opt@enssat.fr](mailto:responsable.opt@enssat.fr)

[www.enssat.fr](http://www.enssat.fr)

## FRANCE

### Dpt. 33 42 91 ▶ Institut d'optique Graduate School

#### Palaiseau, Saint-Etienne et Bordeaux

Physicists trained in optics. 1st year carried out at Palaiseau (91), then specialisms at Palaiseau, Saint-Etienne (42) and Bordeaux (33). Recruitment: Centrale-Supelec competitive examination and based on qualifications. Internships and international dual degrees. FIE – Innovation-entrepreneurs course: technological innovation and business start-up project.

**Contact général :** François BALEMBOIS – +33 (0)5 40 00 69 36

[francois.balembois@institutoptique.fr](mailto:francois.balembois@institutoptique.fr)

[www.institutoptique.fr](http://www.institutoptique.fr)

### Dpt. 35 ▶ Materials Science and Engineering INSA de Rennes

#### Rennes

The engineer in Materials Science and Engineering is a design engineer, research and development engineer or production engineer. Their skills are suited to instrumentation and to high-technology activities in the fields of advanced materials, micro and optoelectronic components and nanotechnologies in general.

**Contact:** Mathieu PERRIN – Tél. +33 (0)2 23 23 85 75

[mathieu.perrin@insa-rennes.fr](mailto:mathieu.perrin@insa-rennes.fr)

### Dpt. 33 42 91 ▶ Institut d'optique Graduate School

#### Palaiseau, Saint-Etienne et Bordeaux

See description in department 33

**Contact 42 :** Raphaël CLERC – Tél. +33 (0)4 77 91 57 40

[raphaël.clerc@institutoptique.fr](mailto:raphaël.clerc@institutoptique.fr)

### Dpt. 42 ▶ Optics and industrial visions Télécom Saint-Étienne

#### Saint-Étienne

This degree teaches engineers about optics and image processing. In addition to the specialism disciplines, they receive training that guarantees versatility and multidisciplinary able to satisfy professional constraints and to learn complex systems. Experience on an international level is ensured notably by a compulsory month abroad.

**Contact:** Hubert KONIK – Tél. +33 (0)4 77 91 57 13

[hubert.konik@telecom-st-etienne.fr](mailto:hubert.konik@telecom-st-etienne.fr)

[www.telecom-st-etienne.fr](http://www.telecom-st-etienne.fr)



## FRANCE

### Dpt. 21 ▶ Master's degree in Nanotechnology and Nanobioscience *Université de Bourgogne*

#### Dijon

This Master's degree trains R&D managers capable of designing and characterising materials (inorganic/organic) by non-destructive testing and miniaturised systems with specific optical properties for telecommunication applications or sensors. It involves two internships in a company or laboratory (28 weeks in total) split over the two years of training.

**Contact:** *Éric BOURILLOT – Tél. +33 (0)3 80 39 60 21 - eric.bourillot@u-bourgogne.fr*  
*Éric LESNIEWSKA – Tél. +33 (0)3 80 39 60 24 – eric.lesniewska@u-bourgogne.fr*  
*Éric FINOT – Tél. +33 (0)3 80 39 37 74 – eric.finot@u-bourgogne.fr*  
*<http://icb.u-bourgogne.fr/masternano>*

### Dpt. 21 ▶ Master's degree in Physics, Lasers and Materials *Université de Bourgogne*

#### Dijon

The PLM specialism focuses on laser technologies for processing and testing materials, industrial and medical applications, optical communications systems and basic research on laser-molecule interactions. It comprises practical work based on professional equipment, some of which is carried out in a laboratory.

**Contact:** *Olivier MUSSET – olivier.musset@u-bourgogne.fr*  
*<http://icb.u-bourgogne.fr/masterplm/>*

### Dpt. 22 29 35 ▶ Master Photonique *ENSSAT – Université de Rennes 1* *ENIB – INSA – Télécom Bretagne – UBO*

#### Brest, Lannion, Rennes

Training in the field of photonics in order to understand the issues encountered during research and R&D. M1 at the University of Rennes 1 or at the University of Western Brittany (UBO). The photonics specialism (M2) comprises: in semester 3, a scientific base with 3 possible career paths and an introductory grounding (scientific, technological, professional); in semester 4, an internship.

**Contact:** *Pascal BESNARD – Tél. 02 96 46 90 53*  
*[responsable.masterphotonique@enssat.fr](mailto:responsable.masterphotonique@enssat.fr)*  
*[www.enssat.fr/master-photoniques](http://www.enssat.fr/master-photoniques)*

## FRANCE

### Dpt. 25 ▶ **Master's degree in Photonics, Microtechnology and Nanotechnology, and Time-Frequency (PICS)** *Université de Franche-Comté*

#### **Besançon**

The Master's degree in PICS provides students with in-depth knowledge, both theoretical and experimental, related to new technological applications of photonics. It includes a project (100 hours in M1) and a five-month minimum internship in a company or laboratory in M2. Graduates are able to join the R&D department of a company or a laboratory to complete their doctorate degree. Since 2013, the Master's in PICS has been awarded the CMI label (Master's in Engineering Degree Course) by the Figure network ([reseau-figure.fr](http://reseau-figure.fr)).

**Contact:** *Fabrice DEVAUX – Tél. +33 (0)3 81 66 69 78  
fabrice.devaux@univ-fcomte.fr*

### Dpt. 22 29 35 ▶ **Master's degree in Photonics** *ENSSAT – Université de Rennes 1* *ENIB – INSA – Télécom Bretagne – UBO*

See description in department 22

### Dpt. 29 35 44 56 ▶ **Master's degree in CNano (Nanosciences, Nanomaterials, Nanotechnology)** *Universités de Rennes 1, Nantes, Bretagne Sud et Bretagne Occidentale*

#### **Rennes, Nantes, Lorient, Brest**

Objectives: To train physicists, physicochemists and engineers on the manipulation and use of nanomaterials, the concepts of nano-physics and nano-chemistry and the instrumentation specific to nanotechnology. Openings: academic research, R&D nano-composite engineer, thin films, biotechnologies, nanocharacterisation, instrumentation, metallurgy, consultants.

**Contact:** *Rennes : pascal.panizza@univ-rennes1.fr / Nantes : duvail@cnrs-imn.fr / Lorient : mickael.castro@univ-ubs.fr / Brest : david.spenato@univ-brest.fr*

## FRANCE

### Dpt. 33 ▶ **Master's degree in CUCIPhy (Design, use and marketing of physics instrumentation)** *Université Bordeaux 1*

#### **Campus de Bordeaux-Talence**

This course aims to build upon the technical and scientific skills acquired during M1 and to transform them into assets for companies thanks to engineers with great management potential (focus also on creating businesses). It also provides real professional experience through an internship in a laboratory and in a company and a group project.

**Contact:** Denise MONDIEIG – Tél. +33 (0)5 40 00 69 88

[d.mondieig@loma.u-bordeaux1.fr](mailto:d.mondieig@loma.u-bordeaux1.fr) – [www.ufr-physique.u-bordeaux1.fr/](http://www.ufr-physique.u-bordeaux1.fr/)

### Dpt. 33 ▶ **International Master's degree in Lasers, Material Sciences and Interactions (MILMI)** *Université Bordeaux 1*

#### **Talence (F), Jena (DE), Orlando (USA), Clemson (USA)**

Research Master's degree as an international partnership which teaches students about optics, lasers, material sciences and wave-matter interactions. The objective is to develop high-level multi-disciplinary skills in the field of photonics. It offers the possibility of undertaking the second year (M2) in the United States. Openings: thesis/cotutelle (joint supervision).

**Entrée :** Bac +3 **Sortie :** Bac +5 – *Formation initiale*

**Contact:** Bruno BOUSQUET – Tél. Tel : +33 (0)5 40 00 28 70

[bruno.bousquet@u-bordeaux1.fr](mailto:bruno.bousquet@u-bordeaux1.fr)

[www.atlantis-milmi.org](http://www.atlantis-milmi.org)

### Dpt. 33 ▶ **2nd year of Research Master's degree (M2) in Physics - Lasers, matter and nanoscience specialism** *Université Bordeaux 1*

#### **Talence (Bordeaux)**

This training course focuses on laser physics and their applications, the physics of nanosystems, biophysics and the properties of dense media. It trains students for research programs in the Aquitaine region of Nano-Bio-Sciences centres of excellence and the Route des lasers competitiveness cluster.

**Contact:** Brahim LOUNIS – Tél. +33 (0)5 40 00 83 55 – [blounis@u-bordeaux1.fr](mailto:blounis@u-bordeaux1.fr)

## FRANCE

### **Dpt. 34 ▶ Master's degree in Optoelectronics and Ultra high Université Montpellier 2**

#### **Montpellier**

The optoelectronics and ultra high frequencies specialism of the EEA Master's degree enables a real dual competency to be developed in the study and design of optoelectronic and ultra high frequency components and systems with particular attention to telecommunication applications. This specialism also forms part of the Master's in Engineering degree course (CMI).

**Contact:** Luca VARANI – Tél. +33 (0)4 67 14 32 21 – [lvarani@um2.fr](mailto:lvarani@um2.fr)  
[www.eea.univ-montp2.fr](http://www.eea.univ-montp2.fr)

### **Dpt. 35 ▶ Master's degree in Telecommunications Systems Université de Rennes 1**

#### **Rennes**

The objective of this Master's degree is to provide the skills necessary for the design and creation of electronic and optoelectronic systems: lasers, propagation along fibres, optical detection, telecommunication systems, radio propagation, ultra high frequency and radio-frequency circuits, aerials, radar systems and radar remote sensing.

**Contact:** Jocelyn NEVEU – Tél. +33 (0)2 23 23 39 50 – [sfc-istic@univ-rennes1.fr](mailto:sfc-istic@univ-rennes1.fr)  
[http://sfc.univ-rennes1.fr/technologie/master\\_systemes-telecommunication.htm](http://sfc.univ-rennes1.fr/technologie/master_systemes-telecommunication.htm)

### **Dpt. 38 ▶ Research Master's degree (M2R) with specialism in Optics and Radio frequencies (OR) of EEATS (Electronics, electrotechnics, automation and signal processing) Grenoble-INP – Joint accreditation by UJF and Université de Savoie**

#### **Grenoble**

The second year of the Research Master's (M2) in OR trains future doctors and engineers in the fields of RF components and systems, optronics and lasers. The Master's degree comprises a core curriculum and two specialisms (optics and optoelectronics or radio-frequencies and microwaves). It provides a broad spectrum of knowledge combining fundamental physics with engineering sciences.

**Contact:** Béatrice CABON – Tél. +33 (0)4 56 52 95 56  
[respm2OR@phelma.grenoble-inp.fr](mailto:respm2OR@phelma.grenoble-inp.fr)  
<http://phelma.grenoble-inp.fr/master-or>

## FRANCE

- Dpt. 42 ▶ Master's degree in Optics, Image and Vision**  
**Université Jean Monnet Saint-Étienne**  
**Joint accreditation by École nationale supérieure des Mines de Saint-Étienne, Institut d'optique Graduate School (antenne Rhône-Alpes), École des Mines de Paris – Mines ParisTech**

### **Saint-Étienne**

The Master's degree in OIV trains professionals on optics, image and colour processing , for R&D in photonics, optical materials, telecommunications, instrumentation, non-destructive industrial testing, 2D and 3D multimedia vision and technologies. It includes an Erasmus Mundus programme: French- Spanish and French-Norwegian.

**Contact:** *Secretary of Master's programme – Tél. +33 (0)4 77 91 57 25*

*master.oiv@univ-st-etienne.fr*

*www.univ-st-etienne.fr/mastoiv*

- Dpt. 49 ▶ Master's degree in Photonics, Signals and Imaging (PSI)**  
**Université d'Angers**

### **Angers**

The main objective of the course is to teach engineer-level managers in the interconnected fields of optoelectronics, signals and imaging, from the physical components up to high-level processing. It also allows the potential for further doctoral study.

**Contact:** *Stéphane CHAUSSEMENT – Tél. +33 (0)2 41 73 54 29*

*stephane.chaussement@univ-angers.fr*

*www.univ-angers.fr/fr/formation/offre-de-formation/MLMD/0004/mphy-850.html*

- Dpt. 49 ▶ Master's degree course in Photonic engineering, Signals, Imaging (CMI-PSI)**  
**Université d'Angers**

### **Angers**

The objective of this 5-year selective degree course approved by the Figure network is to train engineers whose skills cover the entire optical information channel. This course involves working with recognised laboratories and offers exposure on a societal, economic and cultural level, particularly through specific lessons and a large proportion of time spent on real-life activities.

**Contact:** *Stéphane CHAUSSEMENT – Tél. +33 (0)2 41 73 54 29*

*stephane.chaussement@univ-angers.fr*

*www.univ-angers.fr/fr/acces-directs/facultes-et-instituts/faculte-sciences/offre-de-formation/cmi.html*

## FRANCE

### Dpt. 57 ▶ Master's degree with a specialism in Photonics and Optics for the materials part of the Master's degree in Physical & Materials Sciences (SP&M) *Université de Lorraine*

#### Metz

The «Photonics and optics for materials» specialism takes place at the University of Lorraine in Metz as well as at the Supélec Metz campus. It provides preparation for both direct integration into the professional world or further doctoral study. A 5-month internship in a research laboratory or in industry is planned in the 10th semester.

**Contact:** Nicolas FRESSENGEAS – Tél. +33 (0)3 87 37 85 61

[nicolas.fressengeas@univ-lorraine.fr](mailto:nicolas.fressengeas@univ-lorraine.fr)

[www.masterphysique-ul.fr](http://www.masterphysique-ul.fr)

### Dpt. 59 ▶ Master's degree in Physics specialising in Light and Matter *Université de Lille 1*

#### Lille, Villeneuve d'Ascq

The Master's degree (Research and Professional) in Physics at Lille offers a wide range of career paths with numerous openings. The first year provides solid training in the physics of interfaces. Then five specialisms, including «Light and matter», offer career opportunities in Optics and Photonics, Lasers and applications or Atmospheric optics.

**Contact:** Dominique DÉROZIER – Tél. +33 (0)3 20 43 47 88

[dominique.derozier@univ-lille1.fr](mailto:dominique.derozier@univ-lille1.fr)

<http://master-physique.univ-lille1.fr>

### Dpt. 38 ▶ Master's degree in Micro-nanotechnologies *Université Lille 1 – Co-habilitation École Centrale de Lille*

#### Villeneuve d'Ascq

The MNT specialism trains professionals and researchers with good knowledge of industrial applications of microsystems and nanosciences. Internship in 2nd year, from 3 to 6 months in a laboratory or company. Possibility of obtaining a double Master's degree with Georgia Tech Institute or the University of California, Irvine (USA).

**Contact:** Sylvain BOLLAERT – Tél. +33 (0)3 20 19 78 58

[sylvain.bollaert@iemn.univ-lille1.fr](mailto:sylvain.bollaert@iemn.univ-lille1.fr)

<http://master-mint.univ-lille1.fr/>

## FRANCE

### Dpt. 63 ▶ **Master's degree in Nanostructures and Nanophotonics** *Université Blaise Pascal*

#### **Clermont-Ferrand**

The Master's degree in Nanostructures and Nanophotonics offers high-level general training in the field of materials and in the analysis of their physical properties both on a macroscopic scale as well as a nanometric scale. The degree course covers the formation and electronic and optical properties of nano-objects and nanostructures as well as their interactions with photons and charged particles.

**Contact:** Joël LEYMARIE – Tél. +33 (0)4 73 40 70 26

[joel.leymarie@lasmea.univ-bpclermont.fr](mailto:joel.leymarie@lasmea.univ-bpclermont.fr)

[www.univ-bpclermont.fr/formation/formation/UBP-PROG19738.html](http://www.univ-bpclermont.fr/formation/formation/UBP-PROG19738.html)

### Dpt. 67 ▶ **Master's degree in Nanophotonics (specialism of the Master's degree in Imaging, Robotics, Engineering for the living)** *Université de Strasbourg*

#### **Strasbourg, Télécom Physique**

This Master's degree is aimed at students who wish to gain skills in nanotechnologies, phototonics, lasers, biophotonics, microoptics, optical metrology, nonlinear optics and imaging. They are thus prepared for undertaking research in phototonics: interaction between light and matter in biological media, micro and nanostructured materials, optical systems.

**Contact:** Pierre PFEIFFER – Tél. +33 (0)3 68 85 46 30 – [ppfeiffer@unistra.fr](mailto:ppfeiffer@unistra.fr)

[http://master-iriv.u-strasbg.fr/index.php?page=prc\\_nano](http://master-iriv.u-strasbg.fr/index.php?page=prc_nano)

### Dpt. 69 ▶ **Master's degree in DIMN (Instrumental development for micro and nanotechnologies (professional specialism of the Master's degree in Physics))** *Université Claude Bernard Lyon 1*

#### **Villeurbanne**

This 2nd year of the Master's degree (M2) trains managers for industry, capable of developing scientific measuring systems. Sensors and thin films form an important part of the training. The management of an innovative project (first-degree course) leads to a technical achievement. This training course is meant to be generalist in the field of instrumentation.

**Contact:** Brigitte PREVEL – Tél. +33 (0)4 72 44 81 89 – [brigitte.prevel@univ-lyon1.fr](mailto:brigitte.prevel@univ-lyon1.fr)

<http://master-dimn.univ-lyon1.fr>

## FRANCE

### Dpt. 72 ▶ **Master's degree in Physics and Optical Engineering (PIO)** **(Professional M2 of the Master's** **Université du Maine**

#### **Le Mans**

Design and implementation of optical instrumentation for process control. Internship in a laboratory or company for 16 weeks in M2 (2nd year of Master's). Possibility of an internship at Kiev Polytechnic Institute (KPI; Ukraine) in the Optical Engineering department.

**Contact:** Jean-Marc BRETEAU – [jean-marc.breteau@univ-lemans.fr](mailto:jean-marc.breteau@univ-lemans.fr)  
<http://sciences.univ-lemans.fr/Master-Physique-Physique-des>

### Dpt. 75 ▶ **Master's degree in Science and Technology** **Industrial Imaging path** **Université Pierre et Marie Curie**

#### **Paris**

This 2nd year of the Master's degree (M2) provides the skills to master imaging, which is a relatively recent sector of activity with great potential. Examples of work performed in companies as part of the apprenticeship include: colorimetry calibration, computer vision, development of applications for virtual reality, characterisation of nuclear imaging sensors.

**Contact:** Parfaite PANTOU – Tél. +33 (0)6 21 05 43 41 – [parfaite.pantou@upmc.fr](mailto:parfaite.pantou@upmc.fr)  
Gilles CORDURIÉ – Tél. +33 (0)1 44 27 71 40 – [gilles.cordurie@upmc.fr](mailto:gilles.cordurie@upmc.fr)  
[www.cfa.upmc.fr](http://www.cfa.upmc.fr)

### Dpt. 75 ▶ **Master's degree in Physics and Nanotechnologies** **Specialism of the Master's in Physics** **Université Paris 13 – Sorbonne Paris Cité – Joint accreditation** **by CNAM (National Conservatory of Arts and Crafts)**

#### **Paris**

The training course provides the skills to master the scientific and technical aspects at the root of photonic/nanophotonic applications by relying on solid basic training. Emphasis is placed on the interaction between radiation and matter, laser -based instrumentation and experimental techniques in nanosciences (practical work and projects in a clean room). The Master's is as much directed towards research through the preparation of a doctoral thesis as towards R&D activity in a company.

**Contact:** Frédéric DU BURCK – Tél. 33 (0)1 49 40 33 41  
[frederic.du-burck@univ-paris13.fr](mailto:frederic.du-burck@univ-paris13.fr) – [physappl.master.galilee@univ-paris13.fr](mailto:physappl.master.galilee@univ-paris13.fr)  
[www-galilee.univ-paris13.fr/etu\\_masters1\\_physique\\_nano.htm](http://www-galilee.univ-paris13.fr/etu_masters1_physique_nano.htm)



## FRANCE

- Dpt. 75 91 ▶ Master's degree in Optics, Matter and Plasma (OMP). Specialism comprising four research programs (Lasers, optics and matter; Light and matter: extreme measurements; Optics: from science to technology; Plasma: from space to the laboratory) and professional training (Lasers, materials, biological media)**  
*Université Pierre et Marie Curie – Université Paris Sud – Institut d'optique – École polytechnique – Université de Versailles Saint-Quentin-en-Yvelines*

### **Île-de-France (Paris, Palaiseau, Orsay)**

Scientific and technical training which qualifies students for a doctoral thesis in a laboratory setting, or enables them to work in a company in the fields of optics, plasma and the interaction of radiation with matter. Internship: 6 months in a company (Professional Master's) or at least 4 months in a laboratory (Research Master's).

**Contact:** Agnès MAÎTRE – Tél. +33 (0)1 44 27 42 17 – [agnes.maitre@insp.upmc.fr](mailto:agnes.maitre@insp.upmc.fr)  
[www.master-omp.fr](http://www.master-omp.fr)

- Dpt. 76 ▶ Master's degree in DIODE (Development of scientific, optical and detection instruments), branch of the specialism in Energy, Fluid and Optics (EFO)**  
*Université de Rouen*

### **Rouen, Technopole du Madrillet, Saint-Etienne du Rouvray**

The objective of the Master's degree in DIODE is to train specialists in the fields of optics and sensors with a view to quickly enter the sector of industry concerned. This Master's degree also provides preparation for a doctoral thesis within a research laboratory.

**Contact:** Valérie THIEURY – Tél. +33 (0)2 32 95 36 01 – [master-diode@univ-rouen.fr](mailto:master-diode@univ-rouen.fr)  
[www.coria.fr/spip.php?rubrique15](http://www.coria.fr/spip.php?rubrique15)

- Dpt. 87 ▶ Master's degree in ARTICC (Architecture of networks and resulting technologies of communication circuits)**  
*Université de Limoges*

### **Open and distance education (ODL) – campus-based in Limoges for practical work**

ARTICC trains experts in the sectors of telecommunication, space and health instruments. This degree course meets the expectations of students who, through ODL, wish to build up professional expertise in the high-technologies industry sector or focus the doctorate on research and higher education

**Contact:** Denis BARATAUD – Tél. +33 (0)5 55 45 77 53 – [denis.barataud@unilim.fr](mailto:denis.barataud@unilim.fr)  
[www.cvtic.unilim.fr](http://www.cvtic.unilim.fr) – [www.ixeo.unilim.fr](http://www.ixeo.unilim.fr)

## FRANCE

### Dpt. 87 ▶ Master's degree in iXeo *Université de Limoges*

#### **Limoges**

The Master's degree in iXeo trains experts in the sectors of telecommunication, space and health instruments. This degree course meets the expectations of students who wish to build up professional expertise in the high-technologies industry sector or focus the doctorate on research and high education.

**Contact:** Serge VERDEYME – Tél. +33 (0)6 08 34 27 81 – [serge.verdeyme@unilim.fr](mailto:serge.verdeyme@unilim.fr)  
[www.ixeo.unilim.fr](http://www.ixeo.unilim.fr)

### Dpt. 91 ▶ Master's degree in Electronics, Electrical Energy and Automation (E3A) *Université Paris-Saclay*

#### **Paris-Saclay**

With research support at the highest international level, the Master's gives a solid foundation in electronics, energy, automation, industrial computing, signals and imaging. The 2nd year of the Master's (M2) course offers specialist training in optoelectronics, telecommunication and optical, nanophotonic, ultra high frequency electronic and THz networks. The course notably benefits from the support of the «Optoelectronic and photonic» chair of the Université Paris-Sud and PSA Peugeot Citroën.

**Contact:** Arnaud BOURNEL – [arnaud.bournel@u-psud.fr](mailto:arnaud.bournel@u-psud.fr)  
[www.universite-paris-saclay.fr](http://www.universite-paris-saclay.fr)

### Dpt. 91 ▶ 2nd Year of the Master's degree (M2) in Nanosciences *Université Paris-Saclay*

#### **Paris-Saclay**

The degree course aims to offer high-quality training in the field of nanosciences. It uses the skills found in the laboratories of research structures at Paris-Saclay as well existing technological platforms: fundamental physics, applied physics, information science and technology, nanobioscience.

**Contact:** Arnaud BOURNEL – [arnaud.bournel@u-psud.fr](mailto:arnaud.bournel@u-psud.fr)  
[www.master-nanosciences-saclay.fr](http://www.master-nanosciences-saclay.fr)

## FRANCE

### Dpt. 91 ▶ 2nd Year of the Master's degree (M2) in Components and antennas for telecoms (CAT) *Université Paris-Saclay*

#### Paris-Saclay

We will train future researchers and engineers in the fields of ultra high frequencies and optoelectronics and also in cutting-edge fields such as, for example, terahertz waves, metamaterial antennas or silicon photonics. The purpose of CAT offers a relatively basic approach by incorporating physical analysis and modelling without neglecting the more practical aspects of the design of devices for telecommunication.

**Contact:** Xavier CHECOURY – [master2rec-cat.sciences@u-psud.fr](mailto:master2rec-cat.sciences@u-psud.fr)  
<http://master2cat.ief.u-psud.fr/>

### Dpt. 45 ▶ Eco-technologies, electronics and optics *Polytech Orléans – Université d'Orléans*

#### Orléans

The Eco-technologies specialism at Polytech Orleans teaches engineers about innovative eco-designed technologies. Optics, photonics, embedded computing, micro-nanotechnologies and programming all form part of the course. A quarter of the course is dedicated to projects which start during the first semester of the engineering program.

**Contact:** Rémi DUSSART – Tél. +33 (0)2 38 49 48 72  
[secretariat.eo.polytech@univ-orleans.fr](mailto:secretariat.eo.polytech@univ-orleans.fr)  
[www.univ-orleans.fr/polytech](http://www.univ-orleans.fr/polytech)

### Dpt. 67 ▶ Photonics option *Télécom Physique Strasbourg*

#### Strasbourg

Lasers, optical fibres and CCD are recognised as being part of photonics. With micro and nanotechnologies, the training prepares students in the fields of telecommunications, metrology, biophotonics and structuring of matter, to become players in industrial, medical and scientific innovation.

**Contact:** Pierre PFEIFFER – Tél. 03 65 85 46 30 – [ppfeiffer@unistra.fr](mailto:ppfeiffer@unistra.fr)

### Dpt. 69 ▶ Optics, Vision and Image Engineering *IFAI Rhône Alpes – ITII Loire*

#### Lyon

Engineering training in optics, vision, imaging, management of automated production, lasers, photonics.

**Contact:** Laurent MARI – Tél. +33 (0)4 77 92 89 80 - [lmari@citedesentreprises.org](mailto:lmari@citedesentreprises.org)

## FRANCE

**Dpt. 72 ▶ Specialism in systems and processes for measuring and instrumentation**  
**École nationale supérieure d'ingénieurs du Mans – Université du Maine**

### Le Mans

The ENSIM, via the SPMI option (Systems and processes for measuring and instrumentation), delivers expertise to master optical engineering design, sensors, micro-sensors and non-intrusive photonic analysis techniques. State-of-the-art equipment such as clean rooms, lasers and optical metrology, enable high-level practical training to be given and offer an introduction to research.

**Contact:** Stéphane DURAND – Tél. +33 (0)2 43 83 39 54  
[stephane.durand@univ-lemans.fr](mailto:stephane.durand@univ-lemans.fr) – <http://ensim.univ-lemans.fr>

**Dpt. 75 ▶ École d'Ingénieur Denis Diderot (EIDD)**  
**Physical Systems Architecture**  
**Université Paris-Diderot**

### Paris 7

The EIDD offers an engineering degree accredited by the CTI in three specialisms. The specialism «Physical Systems Architecture» provides training to engineers about instrumentation in the electromagnetic field, and more specifically, concerning optics and infrared. The skills to be developed focus on the implementation of system and project approaches to develop new instruments and on acquiring the skills necessary to transmit, propagate, detect and process signals.

**Contact:** Gérard ROUSSET – Tél. : +33 (0)1 45 07 75 49 - [gerard.rousset@obspm.fr](mailto:gerard.rousset@obspm.fr)  
<http://eidd.univ-paris-diderot.fr>

**Dpt. 91 ▶ / Department of Photonics and optronic systems (PSO)**  
**Polytech Paris-Sud - Université Paris-Sud**

### Orsay – Plateau de Saclay

The PSO department of Polytech Paris-Sud teaches engineers with dual competency in optics and electronics, who work in the following sectors of industry: environment, aviation, transport, biomedical, optical telecommunication, defence, scientific instrumentation. The training comprises 36 weeks as an intern and 12 weeks abroad.

**Contact:** Tél. +33 (0)1 69 33 86 00 – [contact.pso@polytech.u-psud.fr](mailto:contact.pso@polytech.u-psud.fr)  
[www.polytech.u-psud.fr](http://www.polytech.u-psud.fr)

**GERMANY**

## GERMANY

### Physics

#### Universität Freiburg

##### Freiburg, Baden-Württemberg

In the field of Optical Technologies following major fields of study can be set: Opto-Electronics, Laser Physics, Quantum Optics, Astronomy, Optical Physics, Optics, Biotechnology and Nanophotonics.

**Contact:** *Zentrale Universitätsverwaltung / Rektorat Fahnenbergplatz, 79085 Freiburg*  
+49 761 203-0 – [info@verwaltung.uni-freiburg.de](mailto:info@verwaltung.uni-freiburg.de)  
<http://www.uni-freiburg.de/>

### Microsystems Technology

#### Universität Freiburg

##### Freiburg, Baden-Württemberg

In the field of Optical Technologies following major fields of study can be set: Microoptics, Optitital MEMS and Bio- and Nanophotonics

**Contact:** *Zentrale Universitätsverwaltung / Rektorat Fahnenbergplatz, 79085 Freiburg*  
+49 761 203-0 – [info@verwaltung.uni-freiburg.de](mailto:info@verwaltung.uni-freiburg.de)  
<http://www.uni-freiburg.de/>

### Physics

#### University of Heidelberg

##### Heidelberg, Baden-Württemberg

In Master's degree program focuses in Experimental Physics as well as Theoretical Physics can be selected in the fields of Photonics, Optoelectronics, Quantum Optics and Systems, Atomic, Molecular and Optical Physics and Solid-State, Astronomy and Astrophysics, Environmental Physics, Bio- and Medical Physics.

**Contact:** +49 6221 54-19648 – [dekanat@physik.uni-heidelberg.de](mailto:dekanat@physik.uni-heidelberg.de)  
<http://www.physik.uni-heidelberg.de/>

### Technical Computer Science

#### University of Heidelberg

##### Heidelberg, Baden-Württemberg

In the Master program in Computer Science with a minor in Physics focusses in the field of Photonics and Virtual Data / Image Processing as well as Electrical and Optical Communications can be selected.

**Contact:** +49 6221 54-19648 – [dekanat@physik.uni-heidelberg.de](mailto:dekanat@physik.uni-heidelberg.de)  
<http://www.physik.uni-heidelberg.de/>

## GERMANY

### Optics & Photonics

#### *Karlsruher Institut für Technologie (KIT)*

##### **Karlsruhe, Baden-Württemberg**

English speaking university education in the field of Optics and Photonics by participation of professors of four Faculties of Physics, Electrical Engineering and Information Technology, Life Sciences as well as Engineering and Chemistry.

**Contact:** +49 721 608-0 – [dekanat@physik.uni-heidelberg.de](mailto:dekanat@physik.uni-heidelberg.de)

[www.kit.edu](http://www.kit.edu)

[www.ksop.de](http://www.ksop.de)

### Physics

#### *Karlsruher Institut für Technologie (KIT)*

##### **Karlsruhe, Baden-Württemberg**

In addition to the classic fields of Physics you can specialize on the study model 10: Optical Technologies. This includes Optoelectronics, Photonics, Optical Metrology and Optical Systems, Nano-Optics, Semiconductor Physics, Optical Materials, Solid State Physics, Physics of Single Photons and Innovation and Business Development in Optics & Photonics.

**Contact:** +49 721 608-0 – [dekanat@physik.uni-heidelberg.de](mailto:dekanat@physik.uni-heidelberg.de)

[www.kit.edu](http://www.kit.edu)

[www.ksop.de](http://www.ksop.de)

### Optics & Photonics

#### *Universität Konstanz*

##### **Konstanz, Baden-Württemberg**

Englischsprachiger Masterstudiengang mit den Schwerpunkten der Photonik in Grundlagenforschung wie auch der Anwendung: Nanotechnologie, Femtosekunden-Technologie, Biophotonik und Quantenphysik.

**Contact:** +49 7531 88-2415 – [achbereich.physik@uni-konstanz.de](mailto:achbereich.physik@uni-konstanz.de)

[www.uni-konstanz.de](http://www.uni-konstanz.de)

### Physics

#### *Universität Konstanz*

##### **Konstanz, Baden-Württemberg**

In the field of Optical Technologies possible major fields of study include Quantum Optics, Quantum Information, Semiconductor Physics, Nonlinear Optics and Optics of Disordered and Organic Media, Polymer Physics, Technical Optics, etc.

**Contact:** +49 7531 88-2415 – [achbereich.physik@uni-konstanz.de](mailto:achbereich.physik@uni-konstanz.de)

[www.uni-konstanz.de](http://www.uni-konstanz.de)

## GERMANY

### Photonic Engineering Universität Stuttgart

#### Stuttgart, Baden-Württemberg

In addition to the classical Master degree in Physics and numerous priorities in Photonics this interdisciplinary degree program was created. Specialization modules are i.a. Classical Optics, Quantum Optics, Light and Matter, Light Sources, Optoelectronics, Signal Processing and Applied Optics.

**Contact:** +49 711 121-3605 – +49 711 685-69893 – [scope@uni-stuttgart.de](mailto:scope@uni-stuttgart.de)

[www.uni-stuttgart.de](http://www.uni-stuttgart.de)

[www.scope.uni-stuttgart.de](http://www.scope.uni-stuttgart.de)

### Physics Universität Stuttgart

#### Stuttgart, Baden-Württemberg

You can focus your study on subjects like Classical Optics, Quantum Optics, Solid State Optics, Optoelectronics, Atom Optics, Modern Optical Methods of Biophysics, Biophotonics, Metamaterials and Signal Processing, Photogrammetry and Image Processing.

**Contact:** Prof. Dr. Martin Dressel – +49 711 6856-4947 – [scope@uni-stuttgart.de](mailto:scope@uni-stuttgart.de)

[www.pi1.physik.uni-stuttgart.de](http://www.pi1.physik.uni-stuttgart.de)

### Physics Eberhard Karls Universität Tübingen

#### Tübingen, Baden-Württemberg

In Master's program priorities can be chosen from the fields of Nano Biophysics, Medical Physics, Quantum Field Theory, Astrophysics, Space Science and Quantum Optics.

**Contact:** +49 7071 29-72514 – [scope@uni-stuttgart.de](mailto:scope@uni-stuttgart.de)

[www.physik.uni-tuebingen.de](http://www.physik.uni-tuebingen.de)

### Physics Universität Ulm

#### Baden-Württemberg

In addition to the physical basic training, in Ulm the focus is mainly on Quantum Optics, Quantum Information Processing and Quantum Matter, but also in the field of Optics in Medical Technology, Optoelectronics and Biophotonics.

**Contact:** Albert-Einstein-Allee 5, 89081 Ulm – +49 731 50-22053

[www.uni-ulm.de/physik/](http://www.uni-ulm.de/physik/)



## GERMANY

### Electrical Engineering *Universität Ulm*

#### **Ulm, Baden-Württemberg**

As part of the electrical engineering studies optoelectronics is taught.

**Contact:** *Albert-Einstein-Allee 5, 89081 Ulm – +49 731 50-22053*

*<http://www.uni-ulm.de/studium/studienberatung.html>*

### Communication Technology *Universität Ulm*

#### **Ulm, Baden-Württemberg**

As part of this study optoelectronics and optical communications will be taught.

**Contact:** *Albert-Einstein-Allee 5, 89081 Ulm – +49 731 50-22053*

*[ctech.e-technik.uni-ulm.de/](http://ctech.e-technik.uni-ulm.de/)*

### Photonics *Hochschule Aalen*

#### **Aalen, Baden-Württemberg**

This degree program combines the disciplines Optics / Photonics with Electronics and Information Technology. Priorities are placed in Optical Fiber Systems and Communication Networks, Laser and Light Sources, Image Processing, Nonlinear Optics and Optical Design.

**Contact:** *Beethovenstrasse 1, 73430 Aalen – +49 731 50-22053*

*<https://www.hs-aalen.de/>*

### Vision Science and Business *Hochschule Aalen*

#### **Aalen, Baden-Württemberg**

It is a training, which presupposes a completed undergraduate optometry / ophthalmic optics.

**Contact:** *Beethovenstrasse 1, 73430 Aalen – +49 731 50-22053*

*<https://www.hs-aalen.de/>*

### Mechatronics *Hochschule Esslingen*

#### **Esslingen/Göppingen, Baden-Württemberg**

In the field of Optical Technologies of the Master program you can focus on Industrial Image Processing and Detection.

**Contact:** *Robert-Bosch-Strasse 1, 73037 Göppingen – +49 7161 679-0*

*[www.hs-esslingen.de](http://www.hs-esslingen.de)*

## GERMANY

### Information and Automation Systems *Hochschule Esslingen*

#### **Esslingen/Göppingen, Baden-Württemberg**

In the field of Optical Technologies you can specialize on Industrial Image Processing and Detection, Laser Material Processing, Optical Systems and Sensors.

**Contact:** Robert-Bosch-Strasse 1, 73037 Göppingen – +49 7161 679-0  
[www.hs-esslingen.de](http://www.hs-esslingen.de)

### Smart Systems *Hochschule Furtwangen*

#### **Furtwangen, Baden-Württemberg**

In this Master's program you can specialize in the fields of Microsystems Technology (Non-Silicon based Microtechnology, Advanced Micromachining) and Theory and Modelling (Physical Modelling and Simulation).

**Contact:** Robert-Gerwig-Platz 1, 78120 Furtwangen – +49 7723 920-0  
[info@hs-furtwangen.de](mailto:info@hs-furtwangen.de)  
[www.hs-furtwangen.de](http://www.hs-furtwangen.de)

### Biomedical Engineering *Hochschule Furtwangen*

#### **Furtwangen, Baden-Württemberg**

In addition to Biomedical Process Engineering and Plant Development, Optical Measuring and Sensor Technology are taught.

**Contact:** Robert-Gerwig-Platz 1, 78120 Furtwangen – +49 7723 920-0  
[info@hs-furtwangen.de](mailto:info@hs-furtwangen.de)  
[www.hs-furtwangen.de](http://www.hs-furtwangen.de)

### Mechatronics *Hochschule Heilbronn*

#### **Heilbronn, Baden-Württemberg**

In this degree program you can choose lectures on Technical Optics, Optical Waveguides and Integrated Optics, Laser Technology / Photonics, Optical Systems, Optical Simulation, Optofluidics, Biosensors, Bioanalytic.

**Contact:** Prof. Dr.-Ing. Peter Ott – Max-Planck-Strasse 39, 74081 Heilbronn  
+49 7131 504-325 – [peter.ottl@hs-heilbronn.de](mailto:peter.ottl@hs-heilbronn.de)  
[www.hs-heilbronn.de/labor.technische.optik](http://www.hs-heilbronn.de/labor.technische.optik)

## GERMANY

### Electrical Engineering / Computer Science *Hochschule für Technik*

#### **Konstanz, Baden-Württemberg**

In addition to basics of Electrical and Communications Engineering knowledge of Wave Optics, Optoelectronics, Laser Optics and Optical Data Transmission are mediated.

**Contact:** *Brauneggerstrasse 55, 78462 Konstanz – +49 7531 206-0*  
*http://www.htwg-konstanz.de/*

### Automotive Systems Engineering *Hochschule für Technik*

#### **Konstanz, Baden-Württemberg**

In this program i.a. Physical Measurement Techniques, Sensor and Image Processing are taught.

**Contact:** *Brauneggerstrasse 55, 78462 Konstanz – +49 7531 206-0*  
*http://www.htwg-konstanz.de/*

### Communication and Media Engineering *Hochschule für Technik*

#### **Offenburg, Baden-Württemberg**

You can chose lectures like Lighting Technology and Image Processing can.

**Contact:** *Badstrasse 24, 77652 Offenburg – +49 781 205-0 – info@hs-offenburg.de*  
*www.hs-offenburg.de*

### Electrical Engineering / Computer Science *Hochschule für Technik*

#### **Offenburg, Baden-Württemberg**

Lectures like Spectroscopy, Optical Sensors and Image Processing, Optical Communication Equipment can be selected.

**Contact:** *Badstrasse 24, 77652 Offenburg – +49 781 205-0 – info@hs-offenburg.de*  
*www.hs-offenburg.de*

### Process and Environmental Engineering *Hochschule Ravensburg-Weingarten*

#### **Ravensburg-Weingarten, Baden-Württemberg**

There are basics for Engineering Sciences Work with subsequent focusses on Energy and Process Engineering and Mechatronics / Optics.

**Contact:** *Doggenriedstraße, 88250 Weingarten – info@hs-weingarten.de*  
*www.hs-weingarten.de*

## GERMANY

### Optical System Technology *Hochschule Ravensburg-Weingarten*

#### **Ravensburg-Weingarten, Baden-Wurttemberg**

i.a. knowledge of Optical Instruments, Optoelectrical Systems, Lighting and Optical Metrology are mediated.

**Contact:** *Doggenriedstraße, 88250 Weingarten – info@hs-weingarten.de  
www.hs-weingarten.de*

### Mechatronics *Hochschule Ravensburg-Weingarten*

#### **Ravensburg-Weingarten, Baden-Wurttemberg**

i.a. knowledge of Construction of Optical Systems, Lighting Technology, Optic-Design, Micro- and Integrated Optics are mediated.

**Contact:** *Doggenriedstraße, 88250 Weingarten – info@hs-weingarten.de  
www.hs-weingarten.de*

### Process Analysis & Technology-Management *Reutlingen University*

#### **Reutlingen, Baden-Wurttemberg**

The focus of this Master's program are in Process Analytics and Technologies and Process Management. For this purpose i.a. Data Management, Analytical Instrumentation, Sensors and Business Management are treated.

**Contact:** *Alteburgstrasse 150, 72762 Reutlingen – +49 7121 271-2038  
karsten.rebner@reutlingen-university.de  
www.reutlingen-university.de*

### Laser- and Optotechnologies *Reutlingen University*

#### **Jena, Thuringia**

Considerable parts of the programme are delivered or supported by research institutes and companies working in the laser and optical field. Contents are laser technique, optical technology, optical design, development of optical instruments and opto-electronics. The regular course duration is 4 semesters.

**Contact:** *Yvonne Guddei – +49 (0)3641 205-400 – scitec@fh-jena.de  
http://www.eah-jena.de/fhj/scitec/studium/laser-und-Optotechnologien-m-eng-/Seiten/default.aspx*

## GERMANY

### Optometry/ Vision Science Reutlingen University

#### Jena, Thuringia

The programme lasts a total of three semesters. The first two semesters include complexes of optometry and ophthalmic technologies, as well as the interdisciplinary modules. Taught are skills such as clinical optometry, low-vision rehabilitation, complicated contact lens care, neurophysiology of vision, and ocular pharmacology.

**Contact:** Yvonne Guddei – +49 (0)3641 205-400 – [scitec@fh-jena.de](mailto:scitec@fh-jena.de)

<http://www.eah-jena.de/fhj/scitec/studium/optometrie-vision-science-m-sc-/Seiten/default.aspx>

### Photonics Reutlingen University

#### Jena, Thuringia

The goal of this programme is to prepare students for research-oriented and science-based careers in optics and optical technologies. Students will gain profound knowledge of experimental and theoretical optics as well as specialized training in various subfields of optics.

**Contact:** Ricarda Knetsch – 0049 (0) 3641 47960 – [master-asp@uni-jena.de](mailto:master-asp@uni-jena.de)

[http://www.uni-jena.de/Studium/Studienangebot/MSc\\_Photonics.html](http://www.uni-jena.de/Studium/Studienangebot/MSc_Photonics.html)

### Physics Reutlingen University

#### Jena, Thuringia

During the Master's Course, students achieve specialised knowledge on experimental and theoretical physics, as well as special training in selected areas. They are enabled to implement research concepts, solve complex physical problems and analyze interdisciplinary solutions.

**Contact:** Prof. Dr. Karl-Heinz Lotze – 0049 (0) 3641 - 947010 – [kh.lotze@uni-jena.de](mailto:kh.lotze@uni-jena.de)

[http://www.uni-jena.de/Studium/Studienangebot/MSc\\_Physik.html](http://www.uni-jena.de/Studium/Studienangebot/MSc_Physik.html)

### Optronics Reutlingen University

#### Ilmenau, Thuringia

The Master in Optronics is trained interdisciplinary and gains comprehensive knowledge of physical basics and electromagnetic waves. The course is designed application-oriented with a regular course duration of 3 semesters.

**Contact:** Prof. Dr. Gunther Notni – +49 3677 69 3820 – [gunther.notni@tu-ilmenau.de](mailto:gunther.notni@tu-ilmenau.de)

<https://www.tu-ilmenau.de/studierende/studium/studienangebot/master/master-optische-systemtechnikoptronik/#c168116>

## GERMANY

### Master of Science in Electrical Engineering and Information Technology *Hochschule Darmstadt*

#### Darmstadt, South Hessen

The program offers an advanced training in key areas of modern Electrical Engineering. He taught, among others Scientific. Knowledge and the ability to analyze and development of complex systems in electrical engineering.

**Contact:** Prof. Dr.-Ing. Manfred Loch – 06151/16-8301 – loch@eit.h-da.de  
www.eit.h-da.de

### Optotechnik und Bildverarbeitung *Hochschule Darmstadt*

#### Darmstadt, South Hessen

The study program consists of a bachelor's degree program and a building upon Master program Optotechnik und Bildverarbeitung. Bei this Master's degree program cooperates with the University of Darmstadt Technical University of Central Hesse.

**Contact:** Prof. Dr. Christoph Heckenkamp – 06151/16-8651 – heckenkamp@h-da.de  
www.fbmn.h-da.de

### Information Technology *Hochschule Frankfurt*

#### Frankfurt, Rhein-Main

The study qualifies for acquisition of project and management responsibility as an engineer in Information Technology as well as for doctoral studies. Typical applications: research and development of technical systems, line of corresponding projects.

**Contact:** Prof. Dr.-Ing. Sven Kuhn – 069/1533-2728 – svenkuhn@fb2.fh-frankfurt.de  
www.fh-frankfurt.de/

### Information and Communications Engineering (ICE) *Technische Hochschule Mittelhessen*

#### Gießen, Mittelhessen

The degree program builds on a Bachelor program information and communication technology. The aim is, inter alia, the acquisition of skills for independent research and development, and technology transfer into products and processes.

**Contact:** Prof. Dr.-Ing. Ubbo Ricklefs, Prof. Dr.-Ing. Karl-Friedrich Klein, Frau Sylviane Anton – 06031/604-251 – info-master@ice.thm.de  
www.ice.iem.thm.de

## GERMANY

### Mechanical Engineering Technische Hochschule Mittelhessen

#### Gießen, Mittelhessen

The master's degree program teaches mathematical and physical principles and their practical application and qualified for an occupation with project and management responsibility in the field of optical technologies and for doctoral studies.

**Contact:** Prof. Dr. Thomas Sure – 0641/309-2223 – [thomas.sure@me.thm.de](mailto:thomas.sure@me.thm.de)  
[www.me.thm.de](http://www.me.thm.de)

### Applied Physics Hochschule Rhein-Main

#### Wiesbaden, Rhein-Main

Focuses on micro- and nanotechnology, photonics, surface physics and their application in the life sciences; research-based Master's program, supported by dedicated professors, the faculty Institute for Microtechnologies and reg. research institutes.

**Contact:** Prof. Dr. Hans-Dieter Bauer – 06142/898-4521, -4514  
[hans-dieter.bauer@hs-rm.de](mailto:hans-dieter.bauer@hs-rm.de)  
[www.hs-rm.de/physik](http://www.hs-rm.de/physik)

### Electrical- and Information Technologies TU Darmstadt

#### Darmstadt, South Hessen

The master's degree enables independent electrical and information technology components and systems to plan and implement. Among others will spec. Acquired knowledge in automation technology, Computational Electrodynamics, Integrated micro and nano technologies.

**Contact:** Dr.-Ing. Andreas Haun – 06151/16-2801 – [haun@etit.tu-darmstadt.de](mailto:haun@etit.tu-darmstadt.de)  
[www.etit.tu-darmstadt.de](http://www.etit.tu-darmstadt.de)

### Information and Communication Engineering TU Darmstadt

#### Darmstadt, South Hessen

The study program focuses on theory, models and applications in the field of information transmission and processing. This includes, inter alia, Communication techniques and algorithms, the microelectronic implementation in hardware and software solutions with applications.

**Contact:** Dr.-Ing. Andreas Haun – 06151/16-2801 – [haun@etit.tu-darmstadt.de](mailto:haun@etit.tu-darmstadt.de)  
[www.etit.tu-darmstadt.de](http://www.etit.tu-darmstadt.de)

## GERMANY

### Physics

#### Universität Frankfurt

##### Frankfurt, Rhein-Main

Through the course of studies with the degree Master the ability is acquired to be professionally involved in the field of physics independent and responsible. The completion of the Master's degree qualifies to receive a doctorate.

**Contact:** Prof. Dr. Reinhard Dörner – 069/798-47003 – [doerner@atom.uni-frankfurt.de](mailto:doerner@atom.uni-frankfurt.de)  
[www.unifrankfurt.de](http://www.unifrankfurt.de)

### Material Science

#### Universität Gießen

##### Gießen, Mittelhessen

The Master's program provides an detailed study of sustainable research and application areas e.g. semiconductor physics, new sensor application, catalysts, materials for innovative energy technologies, nanoscal materials etc.

**Contact:** Dr. Jörg Schörmann – 0641/99-33122  
[joerg.schoermann@exp1.physik.uni-giessen.de](mailto:joerg.schoermann@exp1.physik.uni-giessen.de)  
[www.uni-giessen.de/materialwissenschaften](http://www.uni-giessen.de/materialwissenschaften)

### Electrical Engineering

#### Universität Kassel

##### Kassel, Northern Hesse

The Master's program provides an in-depth study of promising research and application areas: semiconductor physics, optical materials, sensor materials, catalysts, materials for innovative energy technologies, nano-scale materials, etc.

**Contact:** Prof. Dr. Hartmut Hillmer – 0561/804-4485 – [hillmer@ina.uni-kassel.de](mailto:hillmer@ina.uni-kassel.de)  
[www.uni-kassel.de/fb16](http://www.uni-kassel.de/fb16)

### Electrical Communication Engineering

#### Universität Kassel

##### Kassel, Northern Hesse

The master's degree program is research-oriented. The course contents cover different aspects of the Open Systems Interconnection reference model on how digital communications, electromagnetics, microwaves, mobile internet, Optoelectronics and Others.

**Contact:** Prof. Dr. Hartmut Hillmer – 0561/804-4485 – [hillmer@ina.uni-kassel.de](mailto:hillmer@ina.uni-kassel.de)  
[www.uni-kassel.de/fb16](http://www.uni-kassel.de/fb16)



## GERMANY

### Optical Nano Technologies Engineering (ONTE) *Universität Kassel*

#### **Kassel, Northern Hesse**

The ONTE's degree program is research-oriented. The study content addressed nanotechnological systems and optical technologies from engineering point of view. One focus is the practical training in the clean room.

**Contact:** Prof. Dr. Hartmut Hillmer – 0561/804-4485 – [hillmer@ina.uni-kassel.de](mailto:hillmer@ina.uni-kassel.de)  
[www.uni-kassel.de/fb16](http://www.uni-kassel.de/fb16)

### Electrical Engineering *Universität Kassel*

#### **Kassel, Northern Hesse**

The StiP is a scientific study in combination with a business-oriented vocational training. The University of Kassel maintains several collaborations with leading industrial companies in the North Hesse region.

**Contact:** Studienservice Elektrotechnik/Informatik – 0561/804-6438, -6322  
[studieren@uni-kassel.de](mailto:studieren@uni-kassel.de)  
[www.uni-kassel.de/fb16](http://www.uni-kassel.de/fb16)

### Nano Structure Science *Universität Kassel*

#### **Kassel, Northern Hesse**

This course leads approach the independent scientific papers. Graduates / have -tinnen their nanostructure relevant Naturwissenschaftl. Knowledge deepens, expands the overview of interdisciplinary relationships and so specialized.

**Contact:** Prof. Dr. R. Matzdorf – 0561/804-4772 – [matzdorf@physik.uni-kassel.de](mailto:matzdorf@physik.uni-kassel.de)  
[www.uni-kassel.de/fb10/](http://www.uni-kassel.de/fb10/)

### Physics *Universität Kassel*

#### **Kassel, Northern Hesse**

This course leads to connect with the independent scientific work. Graduates have their Mathematics and Natural Sciences. Knowledge deepens, an overview of intra-physical relationships and specializes in a specialized field of physics.

**Contact:** Prof. Dr. R. Matzdorf – 0561/804-4772 – [matzdorf@physik.uni-kassel.de](mailto:matzdorf@physik.uni-kassel.de)  
[www.uni-kassel.de/fb10/](http://www.uni-kassel.de/fb10/)

## GERMANY

### Physics

#### Universität Marburg

##### Marburg, Mittelhessen

In this research-oriented degree program, knowledge is deepened in a general physics and acquired more knowledge in a focus of its own choice. The priorities are based on the research of the working groups of the department.

**Contact:** PD Dr. Andreas Schrimpf – 06421/28-21338 – [andreas.schrimpf@physik.uni-marburg.de](mailto:andreas.schrimpf@physik.uni-marburg.de) – [www.physik.uni-marburg.de](http://www.physik.uni-marburg.de)

### Optical Engineering/Photonics

#### Universität Göttingen

##### Göttingen, Lower-Saxony

This Master's study program provides students with an opportunity to attain scientific training in the main fields of modern optics, laser and plasma technology.

**Contact:** Prof. Dr. Bernd Stock (Dean of Study) – +49(0)551/3705-14  
[stock@hawk-hhg.de](mailto:stock@hawk-hhg.de) – [http://www.hawk-hhg.de/en/sciences/media/N\\_11\\_05\\_05\\_BROS\\_ENG\\_WEB\\_END.pdf](http://www.hawk-hhg.de/en/sciences/media/N_11_05_05_BROS_ENG_WEB_END.pdf)

### Electrical Engineering / Information Technology

#### Universität Göttingen

##### Göttingen, Lower-Saxony

To meet the requirements of the profile for the Master's program in Electrical Engineering/Information Technology, the modules common for both majors focus on such topics as system theory, simulation, high-frequency technology, software engineering and imageprocessing.

**Contact:** Prof. Dr. Bernd Stock (Dean of Study) – +49(0)551/3705-14  
[stock@hawk-hhg.de](mailto:stock@hawk-hhg.de) – [http://www.hawk-hhg.de/en/sciences/media/N\\_11\\_05\\_05\\_BROS\\_ENG\\_WEB\\_END.pdf](http://www.hawk-hhg.de/en/sciences/media/N_11_05_05_BROS_ENG_WEB_END.pdf)

### Mechanical Engineering / Precision Machining

#### Universität Göttingen

##### Göttingen, Lower-Saxony

In addition to the skills and knowledge described in the Bachelor's program, the industrial environment expects graduates from the Master's program in Precision Machining to have more in-depth knowledge in this field and a significant expansion of specialized knowledge.

**Contact:** Prof. Dr. Bernd Stock (Dean of Study) – +49(0)551/3705-14  
[stock@hawk-hhg.de](mailto:stock@hawk-hhg.de) – [http://www.hawk-hhg.de/en/sciences/media/N\\_11\\_05\\_05\\_BROS\\_ENG\\_WEB\\_END.pdf](http://www.hawk-hhg.de/en/sciences/media/N_11_05_05_BROS_ENG_WEB_END.pdf)

## GERMANY

### Mechanical Engineering/Mechatronics/Engineering Physics *Universität Göttingen*

#### **Merseburg, Saxony-Anhalt**

The study program will provide you with the tools of an engineer and physicist. You will acquire invaluable experience in the application and development of technical production processes. This will ensure that you will not have any difficulty in managing technical and academic projects and processes, or in taking charge of complex developments later on in your career.

**Contact:** Prof. Dr. rer. nat. Klaus-Vitold Jenderka – 03461 46-2185

<http://www.hs-merseburg.de/inw/studiengnge/maschinenbau-mechatronik-physiktechnik-meng/>

### Electrical Engineering *Technische Universität Braunschweig*

#### **Braunschweig, Lower-Saxony**

The master courses take 4 semesters.

**Contact:** Dr. Silke Wollers – 0531 391-7798 – [s.wollers@tu-braunschweig.de](mailto:s.wollers@tu-braunschweig.de)

<https://www.tu-braunschweig.de/studieninteressierte/studienangebot/elektrotechnik>

### Physics *Technische Universität Braunschweig*

#### **Braunschweig, Lower-Saxony**

**Contact:** <https://www.tu-braunschweig.de/eitp/studieninteressierte/physik/msc>

### Physics *Universität Göttingen*

#### **Göttingen, Lower-Saxony**

Im Masterstudiengang Physik werden vier Studienschwerpunkte angeboten. Zu Beginn Ihres Studiums müssen Sie sich für einen der Studienschwerpunkte entscheiden. Astro- und Geophysik, Biophysik und Physik komplexer Systeme, Festkörper- und Materialphysik, Kern- und Teilchenphysik.

**Contact:** Prof. Dr. Wolfram Kollatschny – +49 551 39 5065

[wkollat@astro.physik.uni-goettingen.de](mailto:wkollat@astro.physik.uni-goettingen.de)

## GERMANY

### Material Sciences *Universität Göttingen*

#### **Göttingen, Lower-Saxony**

Extensive knowledge of the scientific and technical principles of the production, characterization, development and application of functional materials is imparted to the students.

**Contact:** Dr. Carsten Nowak – 49 (0)551 39-33893  
[materialwissenschaften@uni-goettingen.de](mailto:materialwissenschaften@uni-goettingen.de)  
<http://www.uni-goettingen.de/de/324964.html>

### Physics *Universität Hannover*

#### **Hannover, Lower-Saxony**

In the research-oriented master's in physics, students gain in-depth knowledge from the fundamental research areas: solid-state physics, quantum optics, gravitation and theoretical physics. Later on in your studies you can specialise in one of these fields and gain insights at the cutting edge of modern fundamental research. In a one-year research phase, you are introduced to independent scientific methods of working.

**Contact:** <http://www.uni-hannover.de/en/studium/studienfuehrer/physik-msc/>

### Optical technologies *Universität Hannover*

#### **Hannover, Lower-Saxony**

Optical technologies are one of the most important sunrise industries of the 21st century, contributing significantly to technological progress. From scanners at check-out counters to the use of lasers in the automobile industry, communication technology and medicine – the technical use of light has become part of our everyday life, often linked to electronics.

**Contact:** Christian Kelb – 511 762 17943 – [lehre@hot.uni-hannover.de](mailto:lehre@hot.uni-hannover.de)  
<http://www.uni-hannover.de/de/studium/studienfuehrer/optische-tech/>

### Management & Engineering *Leuphana Universität Lüneburg*

#### **Lüneburg, Lower-Saxony**

Strategic design options and operational optimization tasks almost always include interconnections overarching technology, business and management. The in-depth understanding of engineering is seen in varying degrees as a key success factor for the management of industrial enterprises.

**Contact:** Prof. Dr.-Ing. Hans-Heinrich Schleich – +49.4131.677-5426  
[schleich@uni.leuphana.de](mailto:schleich@uni.leuphana.de)  
<http://www.leuphana.de/master-management-engineering.html>

## GERMANY

### Engineering Physics *Universität Oldenburg*

#### **Oldenburg, Lower-Saxony**

This master's programme is offered jointly by the University of Oldenburg and the University of Applied Sciences (Fachhochschule) Emden/Leer, and is intended to fill the gap between traditional physics and engineering.

**Contact:** *Martin Reck M. Sc – 0441 - 798 3560 – [m.reck@uni-oldenburg.de](mailto:m.reck@uni-oldenburg.de)  
<http://www.ep.uni-oldenburg.de>*

### Physics *Universität Oldenburg*

#### **Oldenburg, Lower-Saxony**

This research oriented programme teaches comprehensive and specialised skills and knowledge within the greater discipline of physics.

**Contact:** *PD Dr. Rainer Reuter – 0441 - 798 3522 – [rainer.reuter@uni-oldenburg.de](mailto:rainer.reuter@uni-oldenburg.de)  
[http://www.uni-oldenburg.de/studium/studiengang/?id\\_studg=135](http://www.uni-oldenburg.de/studium/studiengang/?id_studg=135)*

### Physics *Universität Osnabrück*

#### **Osnabrück, Lower-Saxony**

Der Fachbereich Physik bietet eine umfangreiche Auswahl an Studiengängen im Fach Physik an - dreijährige Bachelor-Studiengänge mit fachlicher oder lehramtsspezifischer Orientierung und daran anschließende zweijährige Masterstudiengänge.

**Contact:** *Prof. Dr. J. Wollschläger – [joachim.wollschlaeger@uni-osnabrueck.de](mailto:joachim.wollschlaeger@uni-osnabrueck.de)  
<http://www.physik.uni-osnabrueck.de/startseite.html>*

### Electrical Engineering / Information Technology *TU Berlin*

#### **Berlin, Brandenburg**

Based on the bachelor's degree to qualify as an engineer / electrical engineering on. Given erwitern your knowledge of the scientific basis, deepen your studies and deal with scientific issues.

**Contact:** *Dr.-Ing. Stephan Völker – +49 30 314 79170 – [sekretariat@li.tu-berlin.de](mailto:sekretariat@li.tu-berlin.de)  
<https://www.eecs.tu-berlin.de>*

## GERMANY

### Mechanical Engineering TU Berlin

#### Berlin, Brandenburg

The master's degree program in Mechanical Engineering offers with its core areas and the possibility of emphasis on choice options a broad engineering degree. A deepening of technical and methodological expertise is carried out in projects and the master's thesis within various priorities.

**Contact:** Prof. Dr.-Ing. Henning Meyer – +49 30 314 78516  
[henning.meyer@tu-berlin.de](mailto:henning.meyer@tu-berlin.de) – <https://www.vm.tu-berlin.de/maschinenbau>

### Physics TU Berlin

#### Berlin, Brandenburg

Based on the bachelor of physics is the Master of consolidation and specialization of physical knowledge and skills and training for independent scientific work. Within the Master's program in a more basic research and a more application-oriented study offered.

**Contact:** Prof. Dr. Harald Engel – +49 30 314 79462 – [h.engel@physik.tu-berlin.de](mailto:h.engel@physik.tu-berlin.de)  
<http://www.physik.tu-berlin.de>

### Physical Engineering TU Berlin

#### Berlin, Brandenburg

The Master's program prepares graduates for a career in research and development by the theoretical methods are applied practically in projects. Through the strong emphasis on mathematical and physical principles and the application of analytical, numerical and experimental methods to concrete, practice-oriented engineering tasks, the graduates are able to adapt flexibly to new problems and to take a holistic approach.

**Contact:** Prof. Dr. rer. nat Valentin Popov – +49 30 314 23454 – [v.popov@tu-berlin.de](mailto:v.popov@tu-berlin.de)  
<https://www.vm.tu-berlin.de/pi>

### Biomedical Engineering TU Berlin

#### Berlin, Brandenburg

Master's degree in biomedical engineering, the thematic areas of medical technology and rehabilitation technology can be selected, be imparted knowledge of the function of the structure, the development and the use of medical equipment and instruments for prevention, diagnosis, therapy and rehabilitation. In addition to the physical principles whose equipment technical implementation is in compliance with the special safety aspects of the interaction of technical systems with the human body in the foreground.

**Contact:** Prof. Dr.-Ing. Marc Kraft – +49 30 314 23388 – [marc.kraft@tu-berlin.de](mailto:marc.kraft@tu-berlin.de)  
<http://www.medtech.tu-berlin.de>

## GERMANY

### Physics HU Berlin

#### Berlin, Brandenburg

A critical component of the Master program are increasingly independent scientific studies to acquire the ability of methodically reflected assessment also new problems. Students acquire in classroom teaching, virtual teaching and a high proportion of self-study and in intensive research seminars and projects individually and together with others the skills for a professional career in business or in research.

**Contact:** PD Dr. Andreas Opitz – +49 30 2093 7545 – [andreas.opitz@hu-berlin.de](mailto:andreas.opitz@hu-berlin.de)  
<http://www.physik.hu-berlin.de>

### Optical Sciences HU Berlin

#### Berlin, Brandenburg

The master's degree Optical Sciences prepares students to challenge in the optics and photonics industry. Studying the basics of optical sciences tablets, offers the possibility of their specialization and practical work, as well as insights into interdisciplinary projects by working closely with the Chair Pertner in industry and science.

**Contact:** Prof. Dr. Kurt Busch – +49 30 6392 7892 – [kbusch@physik.hu-berlin.de](mailto:kbusch@physik.hu-berlin.de)  
<http://opticalsciences.physik.hu-berlin.de>

### Physics FU Berlin

#### Berlin, Brandenburg

Building on the Bachelor of Physics provides the consecutive, research-oriented master's degree program deeper knowledge and scientific methods of physics and chosen by the student and related fields. Study objectives are the consolidation and specialization of physical knowledge and skills as well as training for independent scientific work.

**Contact:** Prof. Dr. Holger Dau – +49 30 838 53581  
[masterstudium@physik.fu-berlin.de](mailto:masterstudium@physik.fu-berlin.de) – [www.physik.fu-berlin.de](http://www.physik.fu-berlin.de)

### Mechanical Engineering Hochschule für Technik und Wirtschaft Berlin

#### Berlin, Brandenburg

Expanded The four-semester master course in mechanical engineering and deepens the acquired in the same or comparable bachelor's degree programs knowledge, skills and abilities. In the two areas of specialization «Constructive lightweight» and «Dynamic machine systems» and elective modules, students have many opportunities to put yourself technical priorities in a mathematically theoretical and applied engineering work.

**Contact:** Prof. Dr.-Ing. Dieter Joensson – +49 30 5019 4319  
[dieter.joensson@htw-berlin.de](mailto:dieter.joensson@htw-berlin.de)  
<http://mb-bachelor.htw-berlin.de/>

## GERMANY

### Microsystem Engineering *Hochschule für Technik und Wirtschaft Berlin*

#### **Berlin, Brandenburg**

The Master's program is designed as Mikrosystemtechnik consecutive program for graduates of the Bachelor program microsystems technology. He also offers graduates of similar programs, the possibility of further qualification.

**Contact:** Prof. Dr. Bernd Hagen – +49 30 5019 3386 – [bernd.hagen@htw-berlin.de](mailto:bernd.hagen@htw-berlin.de)  
<http://mst.htw-berlin.de>

### Communication- und information Technologies *Hochschule für Technik und Wirtschaft Berlin*

#### **Berlin, Brandenburg**

One aim of the Master program is to familiarize the students with tasks of project management. In industrial practice, the graduates can then in the design, planning and management of information and communication networks, automation systems and technical hardware and software used for computer systems. The Master's program is designed to present basic knowledge and skills with regard to the latest developments in telecommunications, automation technology and computer science to deepen.

**Contact:** Prof. Dr. Wilhelm Heyer – +49 30 5019 3364 – [wilhelm.heyer@htw-berlin.de](mailto:wilhelm.heyer@htw-berlin.de)  
<http://www.f1.htw-berlin.de/>

### Physical Engineering *Beuth Hochschule für Technik Berlin*

#### **Berlin, Brandenburg**

Based on the acquired in undergraduate study knowledge, specific skills in applying relevant subjects to acquire. In the third semester the students are introduced through project work on issues of medical physics to work independently. In the final thesis in the fourth semester first independent scientific works is expected.

**Contact:** Prof. Dr. Kay-Uwe Kasch – +49 30 4504 2446 – [kasch@beuth-hochschule.de](mailto:kasch@beuth-hochschule.de)  
[www.beuth-hochschule.de](http://www.beuth-hochschule.de)

### Mechatronics *Beuth Hochschule für Technik Berlin*

#### **Berlin, Brandenburg**

Mechatronics is an interdisciplinary field that is caused by integration of mechanics and precision engineering, optics, electrical engineering / electronics and information technology. Applications can be found wherever on the basis of basic mechanical systems intelligent by integrating electronic and IT components and often high-precision products and systems are in demand.

**Contact:** Prof. Dr.-Ing. Wolfram Runge – +49 30 4504 5121  
[wrunge@beuth-hochschule.de](mailto:wrunge@beuth-hochschule.de) – [www.beuth-hochschule.de](http://www.beuth-hochschule.de)



## GERMANY

### Communication- and information Technologies *Beuth Hochschule für Technik Berlin*

#### **Berlin, Brandenburg**

The Master's program communication and information technology opens up new possibilities and applications through the fusion of computing and communications technologies. The modern communication system is now a network of computers and computer networks with local units for human-machine communication - no matter whether text, images, videos, music or speech are received.

**Contact:** Prof. Dr.-Ing. Marcus Purat – +49 30 4504 2380  
*marcus.purat@beuth-hochschule.de*  
*www.beuth-hochschule.de*

### Ophthalmic Optics *Beuth Hochschule für Technik Berlin*

#### **Berlin, Brandenburg**

The Beuth University offers ranging Ophthalmic optics / Optometry at two Masters courses. This is due in a very different international professional expression.

**Contact:** Prof. Dr.-Ing. Peter Moest – +49 30 4504 4710  
*peter.moest@beuth-hochschule.de*  
*www.beuth-hochschule.de*

### Clinical Optometry *Beuth Hochschule für Technik Berlin*

#### **Berlin, Brandenburg**

This degree program is MCO «Beuth University of Applied Sciences Berlin» hosted by the collaboration with the Pennsylvania College of Optometry of Salus University (SU-PCO) in Elkins Park / Philadelphia (USA). The content of the Masters Course MCO close the gap between the German Fachhochschule eyeglass training and English training optometrists so that MCO Graduates master the complete contents of the European Diploma of Optometry.

**Contact:** Prof. Dr.-Ing. Peter Moest – +49 30 4504 4710  
*peter.moest@beuth-hochschule.de*  
*www.beuth-hochschule.de*

## GERMANY

### Chemistry *Universität Potsdam*

#### **Potsdam, Brandenburg**

The Master Studies in Chemistry at the University of Potsdam is research-oriented. The aim of the Master Program is to provide students with an indentation in the next represented at the Institute sub- jects a specialization and the ability to carry out independent scientific work. Thus, graduates are able to analyze problems in basic or applied research and sen to delete. The master's program is designed so that students can extend the acquired bachelor chemical and multidisciplinary scientific knowledge with regard to the current state of research and deepening.

**Contact:** Dr. Andreas Koch – +49 331 977 5198 – [andreas.koch@uni-potsdam.de](mailto:andreas.koch@uni-potsdam.de)  
<http://www.chem.uni-potsdam.de>

### Physics *Universität Potsdam*

#### **Potsdam, Brandenburg**

The University of Potsdam offers since the winter semester 2011/2012 at a two-year Master's degree program Physics. It builds on the bachelor's program and expanded the training of higher in experimental physics and theoretical physics in two compulsory modules, which accounts for a total of a quarter of the coursework. Thereafter, the students choose Spezialisierungsund Vertiefungsfächer, is where taught as close to the current research.

**Contact:** Dr. Horst Gebert – +49 331 977 1354 – [gebert@uni-potsdam.de](mailto:gebert@uni-potsdam.de)  
<http://www.physik.uni-potsdam.de>

### Electrical Engineering / Information Technology *Brandenburgische Technische Universität*

#### **Cottbus, Brandenburg**

The work of the engineer is shifting from pure development of new technical components and equipment to the planning, implementing and integrating complex systems of hardware and software and their configuration and operation. The trend to combine technical components and devices via comprehensive guidance and control systems with one another is in the field of information and automation technology to determine exactly just as in energy technology.

**Contact:** Dr.-Ing. Uwe Rau – +49 355 69 28 92 – [rau@tu-cottbus.de](mailto:rau@tu-cottbus.de)  
[www.b-tu.de](http://www.b-tu.de)

## GERMANY

### **Mechanical Engineering/Mechatronics/Engineering Physics** **Brandenburgische Technische Universität**

#### **Cottbus, Brandenburg**

The Master program teaches students to build on a first vocational qualification and any professional experience, the ability to use tools and methods of the discipline in the academic work, to critically assess scientific results and to independently developing their own scientific contributions. The master's degree is a formal requirement for promotion.

**Contact:** Dipl.-Ing. Sebastian Bolz – +49 355 69 5105 – [sebastian.bolz@tu-cottbus.de](mailto:sebastian.bolz@tu-cottbus.de)  
[www.b-tu.de](http://www.b-tu.de)

### **Biosystem Engineering** **Technische Hochschule Wildau**

#### **Wildau, Brandenburg**

The accredited Master degree program provides interdisciplinary expertise in the fields of biosensors, molecular biology and cellular regulation, but also in the fields of bioinformatics, micro and surface technology. The aim is to provide students with current knowledge and to empower them, Master of Science to apply them to existing and new problems in the production, research and development. Through the combination of biology, engineering and computer science, you are in demand as beginners in research institutions and businesses throughout the life science area. The degree gives access to higher civil service and in principle also be entitled to promotion.

**Contact:** Prof. Dr. Heike Pospisil – +49 3375 508949 – [heike.pospisil@th-wildau.de](mailto:heike.pospisil@th-wildau.de)  
[www.th-wildau.de](http://www.th-wildau.de)

### **Photonics** **Technische Hochschule Wildau**

#### **Wildau, Brandenburg**

The master's degree photonics has been offered by the UAS Wildau TH and FH Brandenburg as a joint study program and carried out. Both universities are both centrally and can be reached by a well-developed transport network with the semester ticket.

**Contact:** Prof. Dr. Sigurd Schrader – +49 3375 508293  
[sigurd.schrader@th-wildau.de](mailto:sigurd.schrader@th-wildau.de) – [www.th-wildau.de](http://www.th-wildau.de)

## GERMANY

### Physical Engineering *Technische Hochschule Wildau*

#### **Wildau, Brandenburg**

The need for innovative processes, methods and products in industry and research is increasing. Physical Engineering is an interdisciplinary field of study, provides the necessary skills for a successful career in technology-oriented occupations at the highest scientific and technical level. It connects physically embossed research and development with applied engineering sciences - oriented to key technologies - for a variety of career opportunities. Study objectives are the acquisition of basic theoretical and practical knowledge and developing skills in planning, analysis, design and handling physically technical equipment for the industrial, research and environment.

**Contact:** Prof. Dr. rer. nat. Siegfried Rolle – +49 3375 508126  
[ssiegfried.rolle@th-wildau.de](mailto:ssiegfried.rolle@th-wildau.de)  
[www.th-wildau.de](http://www.th-wildau.de)

### Innovation Focused Engineering *Ostbayerische Technische Hochschule Amberg-Weiden*

#### **Amberg-Weiden, Bavaria**

As a technical recess is offered in addition to simulation and laser technology. In addition to general principles of physics, the Technical optics and beam-material interaction, and the latest technologies in the fields of laser technology, laser metrology and -materialbearbeitung contained.

**Contact:** Uwe Stiegler – 09621/ 482-3132 – [u.stiegler@oth-aw.de](mailto:u.stiegler@oth-aw.de)  
<http://www.oth-aw.de/>

### Electrical and Computer Engineering, Industrial Engineering *Hochschule Aschaffenburg*

#### **Aschaffenburg, Bavaria**

As part of a project-oriented, three-semester master's program «Master of Engineering (M.Eng.)» Can be content and skills in the fields of optical technologies deepened and sharpened the profile.

**Contact:** Melissa Sommer – 06021/ 4206-7621 – [studienbuero.iw@h-ab.de](mailto:studienbuero.iw@h-ab.de)  
[www.h-ab.de](http://www.h-ab.de)

### Mechatronics - Optical Engineering *Technische Hochschule Deggendorf*

#### **Deggendorf, Bavaria**

The consecutive Master's degree Mechatronics complements the bachelor degree program in its breadth and depth, allowing the graduates use in new fields of activity. In focus Optical Technologies is deepened in applied and theoretical optics.

**Contact:** Prof. Dr.-Ing. Peter Fröhlich – 0991/ 3615-300 – [peter.froehlich@th-deg.de](mailto:peter.froehlich@th-deg.de)  
[www.th-deg.de](http://www.th-deg.de)

## GERMANY

### **Mechatronics, precision engineering, medical device technology** **Hochschule München**

#### **München, Bavaria**

The University of Munich offers a consecutive Master's degree program Mechatronics / precision engineering, a professionally tuned continuation of studies with higher basis depressions z. B. in the fields of optical communications technology or optoelectronic equipment manufacturing.

**Contact:** Pia Hetzel – 089/1265-1250 – [pia.hetzel@hm.edu](mailto:pia.hetzel@hm.edu)  
[www.hm.edu](http://www.hm.edu)

### **Mechatronics, Precision Mechanics** **Hochschule München**

#### **München, Bavaria**

Proposed at the University of Munich consecutive Master's degree program Mechatronics / FEINWERKTECHNIK offers a professionally coordinated continuation of studies with strong. The internationality is consciously promoted in the Master's program, because there are modules of visiting professors from foreign universities cooperating offered.

**Contact:** Pia Hetzel – 089/1265-1250 – [pia.hetzel@hm.edu](mailto:pia.hetzel@hm.edu)  
[www.hm.edu](http://www.hm.edu)

### **Micro- and Nanotechnology** **Hochschule München**

#### **München, Bavaria**

The master's degree micro- and nanotechnology can be completed either in full-time study in three semesters, or part-time in a correspondingly longer period. In addition to the quantum physics of micro- and nano-technology students with a wide range is transferred to technical issues.

**Contact:** Pia Hetzel – 089/1265-1250 – [pia.hetzel@hm.edu](mailto:pia.hetzel@hm.edu)  
[www.hm.edu](http://www.hm.edu)

### **Photonics** **Hochschule München**

#### **München, Bavaria**

Photonics is located in the core competencies of the faculty, including the optics, laser technology and metrology. When selecting the teaching modules of the bill also was subsequently incorporated into that photonics is a cross-sectional technology that extends into many industries.

**Contact:** Pia Hetzel – 089/1265-1250 – [pia.hetzel@hm.edu](mailto:pia.hetzel@hm.edu)  
[www.hm.edu](http://www.hm.edu)

## GERMANY

### Physical Engineering *Hochschule München*

#### **München, Bavaria**

It offered the non-consecutive Master degree courses photonics, in which a significant advance in the field of cross-cutting technology is acquired, and micro and nanotechnology, in which the skills of the smallest structures and systems are taught, as well as the consecutive Master's program Mechatronics / FEINWERKTECHNIK.

**Contact:** Pia Hetzel – 089/1265-1250 – [pia.hetzel@hm.edu](mailto:pia.hetzel@hm.edu)  
[www.hm.edu](http://www.hm.edu)

### Master Electronic and Mechatronic Systems depression: Communication Technology *Technische Hochschule Nürnberg*

#### **Nürnberg, Bavaria**

In the specialization Communication Technology numerous modules in the field of circuit design, high-frequency technology and optical communications technology offered. Moreover, there is laser technology, optoelectronics, fiber optics and applications, data transmission, sensors and fiber optic lighting and a practicum.

**Contact:** Prof. Dr. Bernhard Wagner – 0911/5880-1400  
[bernhard.wagner@th-nuernberg.de](mailto:bernhard.wagner@th-nuernberg.de)  
<http://www.th-nuernberg.de/>

### Master Electronic and Mechatronic Systems Specialisation: Photonics *Technische Hochschule Nürnberg*

#### **Nürnberg, Bavaria**

In the specialization photonics an extensive curriculum is offered on topics of photonics in many modules. Based on a scientific supplement the basic subjects in the first semester modules are offered in two additional semesters, covering a wide field of photonics.

**Contact:** Prof. Dr. Bernhard Wagner – 0911/5880-1400  
[bernhard.wagner@th-nuernberg.de](mailto:bernhard.wagner@th-nuernberg.de)  
<http://www.th-nuernberg.de/>

### Electrical and Microsystems Engineering *Ostbayerische Technische Hochschule Regensburg*

#### **Regensburg, Bavaria**

The subjects offered for postgraduate studies for Master of Engineering extends from the sensor technology and optoelectronics to areas such as digital image processing, communication systems, spectroscopy and laser technology.

**Contact:** Prof. Dr. rer.nat. Rupert Schreiner – 0941/ 943- 1277  
[rupert.schreiner@oth-regensburg.de](mailto:rupert.schreiner@oth-regensburg.de)  
<https://www.oth-regensburg.de/>

## GERMANY

### Electrical and Computer Engineering *Hochschule für angewandte Wissenschaften*

#### **Würzburg-Schweinfurt, Bavaria**

In consecutive and accredited master's degree program especially a three-semester project work is carried out (including the Master's Thesis 18 + 18 + 28 CP), in which the students will be integrated into the research work of the Faculty of Electrical Engineering.

**Contact:** Prof. Dr. Andreas Kuchler – 0931 / 3511 - 6180 – [andreas.kuechler@fhws.de](mailto:andreas.kuechler@fhws.de)  
[www.fhws.de](http://www.fhws.de)

### Materials Science *Universität Augsburg*

#### **Augsburg, Bavaria**

Based on the bachelor's program joins the English-language Master's program «Materials Science». A master's degree program «Advanced Materials Science» is offered in cooperation with the Technical University and the University of Munich.

**Contact:** Dr. Thomas Bodenmüller – 0821/ 598 - 5146  
[thomas.bodenmueller@zsb.uni-augsburg.de](mailto:thomas.bodenmueller@zsb.uni-augsburg.de)  
[www.uni-augsburg.de](http://www.uni-augsburg.de)

### Materials Science *Universität Augsburg*

#### **Augsburg, Bavaria**

A European study program «Advanced Functional Materials» was set up, in which a portion of the two-year study will be completed at one of the European partner universities.

**Contact:** Dr. Thomas Bodenmüller – 0821/ 598 - 5146  
[thomas.bodenmueller@zsb.uni-augsburg.de](mailto:thomas.bodenmueller@zsb.uni-augsburg.de)  
[www.uni-augsburg.de](http://www.uni-augsburg.de)

### Physics *Universität Augsburg*

#### **Augsburg, Bavaria**

Focus Solid State Physics. Specific issues covered include: broadband electrical and optical spectroscopy; nonlinear optics; Short time physics; laser ablation; Thin film techniques; X-ray and neutron spectroscopy; Scanning tunneling and atomic force microscopy; Photons from nanostructured systems.

**Contact:** Dr. Thomas Bodenmüller – 0821/ 598 - 5146  
[thomas.bodenmueller@zsb.uni-augsburg.de](mailto:thomas.bodenmueller@zsb.uni-augsburg.de)  
[www.uni-augsburg.de](http://www.uni-augsburg.de)

## GERMANY

### Physics

#### *Universität Bayreuth*

##### **Bayreuth, Bavaria**

The Master Programme in Physics (M.Sc.) offers a variety of choices, with sample curriculum for a specialization in Biological Physics, Solid State Physics, Nonlinear physics and soft matter physics facilitate the module selection.

**Contact:** Dr. Gisela Gerstberger – 0921 / 55 52 46 – [studienberatung@uni-bayreuth.de](mailto:studienberatung@uni-bayreuth.de)  
<http://www.uni-bayreuth.de/de/index.html>

### Chemical and Biological Engineering

#### *Fakultätsverwaltung Technische Fakultät*

##### **Erlangen-Nürnberg, Bavaria**

The master's program allows for individual specialization eg in the areas of reaction engineering, separation technology, Technical Thermodynamics, Biochemical Engineering, Medical Biotechnology, Particle Technology and Mechanical Process Engineering, Process Technology and Machinery, and fluid mechanics.

**Contact:** Martin Kriesten – 09131/85-67402 – [martin.kriesten@fau.de](mailto:martin.kriesten@fau.de)  
[www.tf.fau.de](http://www.tf.fau.de)

### Electrical, Electronic and Information Technologies

#### *Fakultätsverwaltung Technische Fakultät*

##### **Erlangen-Nürnberg, Bavaria**

In the subsequent Master program EEI, which can be started in the summer or winter semester, you can deepen the chosen field of study further or opt for a different field of study.

**Contact:** Anja Damli – 09131/85-28776 – [anja.damli@fau.de](mailto:anja.damli@fau.de)  
[www.tf.fau.de](http://www.tf.fau.de)

### Computer science, computational engineering

#### *Fakultätsverwaltung Technische Fakultät*

##### **Erlangen-Nürnberg, Bavaria**

The master's program consists of freely chosen elective modules, a minor, a project, a seminar and thesis.

**Contact:** Dr. Christian Götz – 09131/85-27007 – [christian.goetz@fau.de](mailto:christian.goetz@fau.de)  
[www.tf.fau.de](http://www.tf.fau.de)



## GERMANY

### Engineering *Universität Erlangen-Nürnberg*

#### **Erlangen-Nürnberg, Bavaria**

Students are able to perceive from the subjects of mechanical engineering through materials science, fluid mechanics and thermodynamics to computer science, mathematics, electrical engineering and business administration, the supply of courses.

**Contact:** Patrick Schmitt – 09131 85-28769 – [patrick.schmitt@mb.uni-erlangen.de](mailto:patrick.schmitt@mb.uni-erlangen.de)  
[www.mb.studium.fau.de](http://www.mb.studium.fau.de)

### Master Programme in Advanced Optical Technologies (MAOT) *Fakultätsverwaltung Technische Fakultät*

#### **Erlangen-Nürnberg, Bavaria**

Interdisciplinary Master's program with an international focus. After the introduction to the basics of engineering, physics and medicine depression occurs in the application subjects: Optical Metrology, Materials and Systems, Material Processing, Computational Optics, Optics in Medicine, Optics in IT.

**Contact:** Dr. Jürgen Großmann – 09131/85-25850  
[juergen.grossmann@aot.uni-erlangen.de](mailto:juergen.grossmann@aot.uni-erlangen.de)  
[www.tf.fau.de](http://www.tf.fau.de)

### Mechatronics *Universität Erlangen-Nürnberg*

#### **Erlangen-Nürnberg, Bavaria**

The master's program deepens basic knowledge and research results in the field of mechatronics and causes independently apply and further develop scientific methods and knowledge. In addition to the compulsory modules is an extensive catalog of elective and specialization modules.

**Contact:** Patrick Schmitt – 09131/85-20707 – [patrick.schmitt@mb.uni-erlangen.de](mailto:patrick.schmitt@mb.uni-erlangen.de)  
[www.mb.studium.fau.de](http://www.mb.studium.fau.de)

### Physics *Universität Erlangen-Nürnberg*

#### **Erlangen-Nürnberg, Bavaria**

Master's degree in the major field of study can be chosen «Physics in Medicine». There is also the possibility of a degree in the postgraduate course «Master in Applied Optical Technologies (MAOT)» to acquire.

**Contact:** Prof. Dr. Gisela Anton – 09131/85-27151  
[gisela.anton@physik.uni-erlangen.de](mailto:gisela.anton@physik.uni-erlangen.de)  
[www.fau.de](http://www.fau.de)

## GERMANY

### Industrial Engineering *Universität Erlangen-Nürnberg*

#### **Erlangen-Nürnberg, Bavaria**

You acquire in-depth knowledge of the fundamentals and essential research results in the field of industrial engineering and scientific methods and knowledge can evolve independently.

**Contact:** *Patrick Schmitt – 09131/85-20707 – [patrick.schmitt@mb.uni-erlangen.de](mailto:patrick.schmitt@mb.uni-erlangen.de)  
[www.tf.fau.de](http://www.tf.fau.de)*

### Physics *Ludwig-Maximilians-Universität München*

#### **München, Bavaria**

The consecutive Master's degree program includes extensive studies in each one of the following priorities: nuclear, particle and astrophysics; Condensed Matter; Biophysics and Applied and Engineering Physics.

**Contact:** *Prof. Dr. R. Girwidz – 089 / 2180 - 5803 – [info@stuve.uni-muenchen.de](mailto:info@stuve.uni-muenchen.de)  
[www.physik.lmu.de/](http://www.physik.lmu.de/)*

### Physics *Universität Regensburg*

#### **Regensburg, Bavaria**

The master's degree program can be carried out in subjects such as surface, infrared, laser or semiconductor physics. There are also numerous other complementary subjects, which include for example the «Physics in Medicine» counts.

**Contact:** *Prof. Dr. Josef Zweck – 0941 /943-2590 – [josef.zweck@physik.uni-r.de](mailto:josef.zweck@physik.uni-r.de)  
[www.uni-regensburg.de](http://www.uni-regensburg.de)*

### Nanostructure Technology *Universität Würzburg*

#### **Würzburg, Bavaria**

In the master study to focus elective subjects must be taken. In the field of optical technologies translucent thermal insulation systems, photovoltaic, micro / nano- and optoelectronic devices and biophysical analysis systems and methods are offered.

**Contact:** *Dr. Tobias Kießling – 0931/ 31 81465  
[studienberatung@physik.uni-wuerzburg.de](mailto:studienberatung@physik.uni-wuerzburg.de)  
[www.physik.uni-wuerzburg.de](http://www.physik.uni-wuerzburg.de)*

## GERMANY

### Physics *Universität Würzburg*

#### **Würzburg , Bavaria**

In the master study elective subjects must be taken to ensure that every students further deepen this knowledge and can be set accordingly to his inclinations priorities. The optical technologies find their way, especially in the special lectures of elective area.

**Contact:** *Dr. Tobias Kießling – 0931/ 31 81465*

*studienberatung@physik.uni-wuerzburg.de*

*www.physik.uni-wuerzburg.de*

**GREECE**

## GREECE

### **MSc in Nanosciences & Nanotechnologies** *Aristotle University of Thessaloniki, Department of Physics*

#### **Thessaloniki**

The main research areas are Thin Films and Nanotechnology, Nanomechanics & Nanomaterials, Nanotechnology and Nanomedicine

**Contact:** +30 2310 998952 – [nninfo@physics.auth.gr](mailto:nninfo@physics.auth.gr)

<http://nn.physics.auth.gr/>

### **MSc in Microsystems and Nanotechnology** *National Technical University of Athens, Faculty of Applied Mathematical and Physical Sciences (Interdepartmental)*

#### **Athens**

The purpose of this postgraduate program is to educate new scientists in the subject area of microsystems and nanotechnology that find application in health, medicine, environment, energy systems, and telecommunications.

**Contact:** +30 210 7723032 – [e\\_phys@mail.ntua.gr](mailto:e_phys@mail.ntua.gr)

<http://www.physics.ntua.gr/gr/micronano/Introduction.htm>

### **MSc in Optometric Control** *Technological Educational Institute of Athens, Department of Optics and Optometry*

#### **Athens**

Main aim of the course is to provide quality theoretical and practical training for students, in the field of Optical Technology & Advanced Optometry and to conduct original and high quality research in the field of ophthalmic lenses, contact lenses and in optometry, optometric examination techniques and diagnostic tests.

**Contact:** +30 210 5385621 – [mscito@teiath.gr](mailto:mscito@teiath.gr)

[http://www.teiath.gr/seyp/new\\_optics/?lang=en](http://www.teiath.gr/seyp/new_optics/?lang=en)

### **MSc in Plasma Physics & Applications** *Technological Educational Institute of Crete, Department of Electronic Engineering*

#### **Chania /Rethymno**

The main objective of this MSc degree is the training of new scientists in the field of inertial confinement fusion for energy production. This module foresees to interlink the pure science and the technology on the field of green energy production.

**Contact:** +30 2810 23000 – [m.tatarakis@chania.teicrete.gr](mailto:m.tatarakis@chania.teicrete.gr)

[http://plapa.chania.teicrete.gr/Erasmus\\_Curriculum\\_Development/Welcome.html](http://plapa.chania.teicrete.gr/Erasmus_Curriculum_Development/Welcome.html)

## GREECE

### **MSc in Optics and Vision**

***University of Crete, Department of Materials Science and Technology  
(Interdepartmental)***

#### **Heraklion**

Advance studies on physiological optics, optical instruments technology, optometry, ophthalmology,

**Contact:** +30 2810 394868 – [opticsvision@med.uoc.gr](mailto:opticsvision@med.uoc.gr)

<http://www.optics-vision.gr/optics/greeting-tsilimbaris>

### **MSc in Photonics - Nanoelectronics**

***University of Crete, Department of Physics***

#### **Heraklion**

Provides scientists and engineers with a solid background and research training in advanced electronic and photonic applications. The courses cover topics in quantum physics, lasers and optics, microelectronic devices, materials science and system design

**Contact:** +30 2810 394004 – [pgrad@physics.uoc.gr](mailto:pgrad@physics.uoc.gr)

[http://gradstudy.physics.uoc.gr/2/en/index\\_en.html](http://gradstudy.physics.uoc.gr/2/en/index_en.html)

### **MSc in Photonics**

***University of Patras, Department of Physics***

#### **Patra**

**Contact:** +30 2610 996077

<http://www.physics.upatras.gr/index.php?page=default>

**IRELAND**

## IRELAND

### Structured Masters in Key Enabling Technologies *NUI Galway*

#### **Galway**

Students can participate in the following areas of interest: Photonics (Optical design, imaging, instrumentation, spectroscopy, laser matter interactions, laser tissue interactions), Nanotechnologies (Thin nano-films, bio-nanointeractions, nanomaterials), Advanced materials (Biomaterials, thin films, polymers, composites, chemical synthesis, biomechanics, soft condensed matter, aerosols), Industrial Biotechnology (Process analytical technologies, biodiagnostics, medical devices, pharmaceuticals, infectious diseases), Nano-/ Micro Electronics (Large area electronics, material properties, processes & applications, sensor / equipment development), Advanced Manufacturing (Medical Device Manufacturing, Automated inspection, Roll to roll manufacturing, Stem Cell Manufacturing, Occupational Health & Safety).

**Contact:** *Dr. Gerard O'Connor – 353 91 492513 – Gerard.oconnor@nuigalway.ie*

### NanoBioScience *University College Dublin*

#### **Dublin**

Research work can be carried out on a number of themes including the following: Atomic-Force Microscopy (AFM), Cellular imaging, probing, and spectroscopy, Metamaterials, Molecular simulation, Multiphoton microscopy, Nano-toxicity, Nanotube simulation and experiment, Organic solar cells, Scanning Near-Field Optical Microscopy (SNOM), Spectroscopy of nanoscale structures.

### MSc in Photonics *University College Cork*

#### **Cork**

To understand the physics and engineering of photonic materials, devices, systems and applications, and to develop the necessary professional skills for an entry level career in photonics research or industry.

**Contact:** *Dr. Frank Peters – (0)21 4902381 – F.Peters@ucc.ie – <http://www.physics.ucc.ie/mscphotonics/mscphotonics/>*



## IRELAND

### MSC (BIOMEDICAL SCIENCE)

#### NUI Galway

##### Galway

An interdisciplinary approach to research, using technologies and skills from a range of scientific, engineering and clinical disciplines to address fundamental questions originating in biology and medicine.

**Contact:** Dr Mary Ní Fhlathartaigh – 353 91 495 323 – [mary.nifhlathartaigh@nuigalway.ie](mailto:mary.nifhlathartaigh@nuigalway.ie) – [http://www.nuigalway.ie/courses/taught-postgraduate-courses/biomedical-science.html#course\\_overview](http://www.nuigalway.ie/courses/taught-postgraduate-courses/biomedical-science.html#course_overview)

### MASTER OF SCIENCE (BIOMEDICAL ENGINEERING)

#### NUI Galway

##### Galway

Biomechanics/medical devices, biomaterials and bioelectronics

**Contact:** Jane Bowman – 353 91 492723 – [jane.bowman@nuigalway.ie](mailto:jane.bowman@nuigalway.ie)  
[http://www.nuigalway.ie/courses/taught-postgraduate-courses/biomedical-engineering.html#course\\_overview](http://www.nuigalway.ie/courses/taught-postgraduate-courses/biomedical-engineering.html#course_overview)

### MSC (MEDICAL PHYSICS)

#### NUI Galway

##### Galway

Training for physicists in the application of radiation physics in medicine

**Contact:** Dr Mark J. Foley – 353 91 495 383 – [mark.foley@nuigalway.ie](mailto:mark.foley@nuigalway.ie) – [http://www.nuigalway.ie/courses/taught-postgraduate-courses/medical-physics.html#course\\_overview](http://www.nuigalway.ie/courses/taught-postgraduate-courses/medical-physics.html#course_overview)

### MSC (BIOTECHNOLOGY)

#### NUI Galway

##### Galway

Focuses on the development and application of biological processes in research, commercial and industrial settings

**Contact:** Dr Mary Ní Fhlathartaigh – 353 91 495 323 – [mary.nifhlathartaigh@nuigalway.ie](mailto:mary.nifhlathartaigh@nuigalway.ie) – [http://www.nuigalway.ie/courses/taught-postgraduate-courses/biotechnology.html#course\\_overview](http://www.nuigalway.ie/courses/taught-postgraduate-courses/biotechnology.html#course_overview)

## IRELAND

### Experimental Physics - Research NUI Galway

#### Galway

The NCLA research group has a broad portfolio of fundamental and applied research on laser material interactions and works closely with industry in technology transfer and training. The Applied Optics group focuses on the development and application of adaptive optics and optical design. Imaging and applied optics are enabling technologies that underpin many key developments in biotechnology, healthcare, and communication, as well as a wide variety of consumer products. The NCLA and Applied Optics groups have joined forces to form the Centre for Applied Photonics, LightHOUSE.

**Contact:** Dr. Gerard O'Connor – 353 91 492 51 – [gerard.oconnor@nuigalway.ie](mailto:gerard.oconnor@nuigalway.ie)  
<http://www.nuigalway.ie/courses/research-postgraduate-programmes/physics.html>

### Photonic Integration & Advanced Data Storage - Research Queens University Belfast

#### Antrim

Ultra-reliable semiconductor lasers operating in hostile environments, Low cost planar lightwave circuit platforms, suitable for volume manufacture, Novel nanoplasmonic devices capable of operating in extreme environments, Advanced materials for magnetic recording, Atomic scale analysis techniques.

**Contact:** Professor Robert Bowman – 9097 6005 – [b.morris@qub.ac.uk](mailto:b.morris@qub.ac.uk)  
<http://postgradireland.com/course/15282>

### Theoretical Atomic Molecular & Optical Physics - Research Queens University Belfast

#### Antrim

Strong field laser interactions with atoms and molecules, especially attosecond and free-electron-laser sources, Quantum information processing, quantum optics, and quantum thermodynamics, Antimatter interactions with atoms and molecules, especially the role of vibrational Feshbach resonances, Electron scattering by very complex targets such as the iron peak elements, of considerable importance in astrophysics and by Rydberg atoms, Quantum many-body physics, ultracold atomic systems and simulation of their features, Foundations of quantum mechanics

**Contact:** Professor Mauro Paternostro – 9097 1907 – [applied.maths@qub.ac.uk](mailto:applied.maths@qub.ac.uk)  
<http://www.qub.ac.uk/home/StudyatQueens/CourseFinder/PCF1617/PRCF1617/Course/TheoreticalAtomicMolecularandOpticalPhysics.html>

## IRELAND

### Photonics - Research *Cork Institute of Technology*

#### **Cork**

Photonics research includes the CAPP Research Centre which focuses on generating and harnessing light, impacting a wide range of areas, such as telecommunications, gas sensing, food and medical imaging. CAPP works closely with industry. The Astronomy and Instrumentation Group (AIG) develops and uses instruments for astronomy, some of which have been used for other applications such as trace contaminant detection and air quality monitoring.

**Contact:** *Dr. Guillaume Huyet – 353-21-4335595 – guillaume.huyet@cit.ie*  
*<http://postgradireland.com/course/15887>*

### Physics - Research *Trinity College Dublin*

#### **Dublin**

The main research areas are Nanotechnology, Scientific Computing and Photonics with activities ranging from spin-electronics, to carbon nanotubes and semiconductor lasers. There are also research groups working on soft-condensed matter and astrophysics with a new section on bio-nano Physics

**Contact:** *Professor James Lunney – 353-1-896 1675 – physics@tcd.ie*  
*<http://www.tcd.ie/courses/postgraduate/research/schools/physics.php>*

### Physics - Research *Trinity College Dublin*

#### **Dublin**

Advanced optical imaging and biophysical applications

**Contact:** *Brian Vohnsen – (0)1 716 2361 – brian.vohnsen@ucd.ie*  
*<http://www.ucd.ie/physics/staff/opportunities/#d.en.55543>*

## IRELAND

### Physics - Applied *University of Limerick*

#### **Limerick**

To meet the needs of graduates who wish to augment their existing skills with an understanding of the methodology of physics and a knowledge of the physical principles underlying the operation of industrial processes and equipment. Including Optical Fibre and Optoelectronic Systems

**Contact:** *Dr Fernando Rhen – 061-202290 – [Fernando.Rhen@ul.ie](mailto:Fernando.Rhen@ul.ie)  
<http://www.ul.ie/graduateschool/course/applied-physics-msc>*

### Physics - Experimental - Research *NUI Maynooth*

#### **Kildare**

Research specialisms include terahertz space optics, cosmic microwave background astronomy, cluster physics, upper atmospheric physics, submillimetre astronomy, experimental fluid dynamics.

**Contact:** *Dr Michael F Cawley – 353 1 708 3641 – [physics.department@nuim.ie](mailto:physics.department@nuim.ie)*

### Physical Sciences - Research *Dublin City University*

#### **Dublin**

Research Based in the following groups: Astrophysics Group, Centre for Laser Plasma Research (CLPR), Microsystems Group, Optical Sensors Laboratory (OSL), Plasma Research Laboratory (PRL), Semiconductor Spectroscopy Laboratory (SSL), Surfaces and Interfaces Research Laboratory (SIRL)

**Contact:** *Ms Lisa Peyton – 354 1 7005306 – [lisa.peyton@dcu.ie](mailto:lisa.peyton@dcu.ie)  
<http://www4.dcu.ie/physics/physics-research-activities.shtml>*

**ITALY**

## ITALY

### **Laurea Magistrale in Nano-ottica e Fotonica** **Politecnico di Milano**

#### **Milano, Lombardia**

The Master focuses on applications of optics and photonics to environment, electrooptic microtechnologies, nanobiotechnologies and nanomedicine, mechanics and telecommunications.

**Contact:** *Gianluca Valentini – +390223996071 – gianluca.valentini@polimi.it*  
*[https://www.fisi.polimi.it/it/didattica/offerta\\_formativa/laurea\\_magistrale](https://www.fisi.polimi.it/it/didattica/offerta_formativa/laurea_magistrale)*

### **Master Optics and quantum information** **Sapienza Università di Roma**

#### **Roma, Lazio**

The Master aims at the creation of a training program designed to train students in the field of «quantum information» (optical communication and quantum computing) .The objective of the course is to provide real technical skills to the participants.

**Contact:** *Concetta Sibilìa – +390649766541 – concita.sibilìa@uniroma1.it*  
*<http://www.uniroma1.it/didattica/master/2015/optics-and-quantum-information-interfaccoltà>*

### **Master Color Design & Technology - POLI.design** **Consorzio del Politecnico di Milano**

#### **Milano, Lombardia**

The master aims at forming professionals able to manage technology and project issues related to the use of color in a wide set of application fields, like e.g. industrial products design, interior design, communication, fashion, entertainment, indoor and outdoor lighting.

**Contact:** *Andrea Siniscalco – +390223995864 – iscrizioni@polidesign.net*  
*<http://www.polidesign.net/it/colordesign>*

**LITHUANIA**

## LITHUANIA

### MA-level course : Kinetic and Laser Spectroscopy

#### Vilnius, Lithuania

Subject deals with a very rapid molecular electronic excited states of relaxation processes, leading to many natural and technical energy exchange mechanisms. Educated experimental work skills in laser spectroscopy area.

Contact: Gintaras Dikčius – +370 5 236 6086 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt)

<http://www.ff.vu.lt/en/studies/information>

### MA-level course : Optical Information Processing Methods

#### Vilnius, Lithuania

This course provides an overview and examines the optical information creation, transmission, management, detection, storage methods; optical fields characterization and analysis of mathematical and physical methods; optical systems; modern information optics problems and trends.

Contact: Gintaras Dikčius – +370 5 236 6087 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt)

<http://www.ff.vu.lt/en/studies/information>

### MA-level course : Solid State Lasers

#### Vilnius, Lithuania

An overview of the solid state laser operating principles and a solid body laser material. Examination of electronic transitions and electronic vibration transition solid-state lasers, laser amplifiers, frequency modulated extended pulse amplification and etc.

Contact: Gintaras Dikčius – +370 5 236 6088 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt)

<http://www.ff.vu.lt/en/studies/information>

### MA-level course : Ultrashort Pulse Optics

#### Vilnius, Lithuania

The aim of the course - to provide students basic knowledge about modulated amplitude and phase of light waves propagation through transparent dielectric media.

Contact: Gintaras Dikčius – +370 5 236 6089 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt)

<http://www.ff.vu.lt/en/studies/information>



## LITHUANIA

### MA-level course : Optical Connection

#### Vilnius, Lithuania

Engineering principles of optical communications systems and main components. Passive optical network structure, operating principles and improvement perspective and etc. After hearing the course, students will be familiar with the telecommunications and optical communication bases.

**Contact:** *Gintaras Dikčius – +370 5 236 6090 – gintaras.dikcius@ff.vu.lt*  
*<http://www.ff.vu.lt/en/studies/information>*

### MA-level course : Modern Optics

#### Vilnius, Lithuania

This course presents the most recent light pulses reconstruction of three-dimensional technique, ultra- short light pulse shaping and analysis techniques, exotic terawatt pulse optics and problems.

**Contact:** *Gintaras Dikčius – +370 5 236 6091 – gintaras.dikcius@ff.vu.lt*  
*<http://www.ff.vu.lt/en/studies/information>*

### MA-level course : Optical Fiber Technology and Physics

#### Vilnius, Lithuania

After this course, students will be able to explain the principles of light propagation of a different type optical fiber, provide the main characteristics of optical fiber, to name the main optical fiber use area, specify a different type of fiber lasers and amplifiers, their adaptations and etc.

**Contact:** *Gintaras Dikčius – +370 5 236 6092 – gintaras.dikcius@ff.vu.lt*  
*<http://www.ff.vu.lt/en/studies/information>*

### MA-level course : Nonlinear Optics

#### Vilnius, Lithuania

After this course, students will be able to understand, explain, and identify the practical application of basic nonlinear optical phenomena, generate laser harmonics and measure ultrashort pulse duration of the autocorrelation method, understand contemporary problems of nonlinear optics.

**Contact:** *Gintaras Dikčius – +370 5 236 6093 – gintaras.dikcius@ff.vu.lt*  
*<http://www.ff.vu.lt/en/studies/information>*

## LITHUANIA

### MA-level course : Physics and Technology of the Light Sources and Detectors

#### Vilnius, Lithuania

Non-coherent light sources and light metrology. Color vision. The imaging equipment and imaging techniques.

Physics of light detection devices, radiation registration, data analysis.

Contact: Gintaras Dikčius – +370 5 236 6094 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt)

<http://www.ff.vu.lt/en/studies/information>

### MA-level course : Quantum Optics

#### Vilnius, Lithuania

Introducing the quantum description of the radiation and the fundamental laser radiation, and non-coherent

light sources in quantum optics phenomena.

Contact: Gintaras Dikčius – +370 5 236 6095 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt)

<http://www.ff.vu.lt/en/studies/information>

### MA-level course : Laser Material Processing

#### Vilnius, Lithuania

After this course, students will understand, explain and identify the practical application of basic laser materials processing principles, understand and explain the most important laser technology equipment operating principle, will be able to work in educational and scientific laboratories.

Contact: Gintaras Dikčius – +370 5 236 6096 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt)

<http://www.ff.vu.lt/en/studies/information>

### MA-level course : Ultrashort Pulse Optics

#### Vilnius, Lithuania

After completing this course, students will be able to understand, explain, and identify the practical application of basic ultrashort pulse optical phenomena; perform calculations, allowing to model ultrashort light pulse propagation through optical media.

Contact: Gintaras Dikčius – +370 5 236 6097 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt)

<http://www.ff.vu.lt/en/studies/information>

## LITHUANIA

### MA-level course : Laser Technologies

#### Vilnius, Lithuania

Learning about laser light and matter interaction. An overview of specific industrial laser materials processing processes, micromachining, laser ablation and laser treatment. Analyze transparent materials labeling and safety when working with lasers.

**Contact:** Gintaras Dikčius – +370 5 236 6098 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt)  
<http://www.ff.vu.lt/en/studies/information>

### MA-level course : Electronics and Photonics Market

#### Vilnius, Lithuania

The aim is to provide knowledge by linking Master academic education and production, market issues, to clarify how scientific ideas turn into products.

**Contact:** Gintaras Dikčius – +370 5 236 6099 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt)  
<http://www.ff.vu.lt/en/studies/information>

### MA-level course : Technologies of Optical and Laser Elements

#### Vilnius, Lithuania

The main aim - to provide practical and theoretical knowledge of the optical elements' properties, the manufacture, treatment and coating technology, and optimization, characterization methods.

**Contact:** Gintaras Dikčius – +370 5 236 6100 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt)  
<http://www.ff.vu.lt/en/studies/information>

### MA-level course : Interaction of Laser Radiation with Matter

#### Vilnius, Lithuania

This course examines intense laser radiation and matter interaction physics, describes the interaction of light and matter models, discusses the electromagnetic radiation absorption processes, materials behavior in presence of light.

**Contact:** Gintaras Dikčius – +370 5 236 6101 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt)  
<http://www.ff.vu.lt/en/studies/information>

## LITHUANIA

### MA-level course : Optical Systems

#### Vilnius, Lithuania

After completing this course, the student will be able to independently analyze various complexity optical systems, assess their performance characteristics, adapt digital simulation programs (OSLO, ZEMAX) for projected systems development, optimization and testing.

**Contact:** Gintaras Dikčius – +370 5 236 6102 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt)  
<http://www.ff.vu.lt/en/studies/information>

### MA-level course : Laser processing technology equipment

#### Vilnius, Lithuania

After this course, students will be able to understand, explain and identify the components used in laser materials processing equipment, understanding laser technology equipment operation principles, work with laser technological equipment in educational and scientific laboratories.

**Contact:** Gintaras Dikčius – +370 5 236 6103 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt)  
<http://www.ff.vu.lt/en/studies/information>

### MA-level course : Adaptive Optics and Photonics

#### Vilnius, Lithuania

Presented information about modern science of photonics industries. Introducing the localization of light manifestation. Compare and summarize the one-dimensional, two-dimensional and three-dimensional photonic crystal properties manifestation and etc.

**Contact:** Gintaras Dikčius – +370 5 236 6104 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt)  
<http://www.ff.vu.lt/en/studies/information>

### MA-level course : Modern Semiconductor Devices - Physics and Technology

#### Vilnius, Lithuania

Students will gain knowledge about modern materials, customized for microelectronic device manufacturing, learn the basic physical principles of operation of devices, will be able to apply this knowledge in electronic circuits with semiconductor elements creation.

**Contact:** Gintaras Dikčius – +370 5 236 6105 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt)  
<http://www.ff.vu.lt/en/studies/information>

## LITHUANIA

### MA-level course : Inorganic Optoelectronic Device Physics and Technology

#### Vilnius, Lithuania

After this course, students will be able to understand and explain the modern optoelectronic devices physical principles of operation, device manufacturing techniques and experimental methods to investigate them, explain the modern electronic devices and optoelectronic design principles.

**Contact:** *Gintaras Dikčius* – +370 5 236 6106 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt) – <http://www.ffi.vu.lt/en/studies/information>

### MA-level course : Light, Colour and Measurements of their Made Sense

#### Vilnius, Lithuania

Students will know more about light and color and caused sensations, know about the physical stimulus presentation, light and color sensation and perception measurement, data collection and analysis, be able to determine the relationship between light and color physical stimulus.

**Contact:** *Gintaras Dikčius* – +370 5 236 6107 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt) – <http://www.ffi.vu.lt/en/studies/information>

### MA-level course : Energy-Saving Semiconductor Technology

#### Vilnius, Lithuania

Aim - to introduce to the energetics problems and development trends and opportunities for semiconductor technology achievements used in energy production, paying particular attention to the solid-state non-coherent light sources, photovoltaic cells and high power semiconductor electronics.

**Contact:** *Gintaras Dikčius* – +370 5 236 6108 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt) – <http://www.ffi.vu.lt/en/studies/information>

### MA-level course : Organic Optoelectronics Technology

#### Vilnius, Lithuania

Aim – to gain knowledge about the basic optoelectronics materials and their properties, organic optoelectronics technical descriptions.

**Contact:** *Gintaras Dikčius* – +370 5 236 6109 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt) – <http://www.ffi.vu.lt/en/studies/information>

## LITHUANIA

### MA-level course : Solid-state Lighting Technology

#### Vilnius, Lithuania

After hearing the course, students will understand the principles of operation of light-emitting diodes, know the basic materials of LED systems, structure and characteristics, know basic solid-state lighting application areas and etc.

**Contact:** Gintaras Dikčius – +370 5 236 6110 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt) – <http://www.ffi.vu.lt/en/studies/information>

### MA-level course : Chaotic Matter Physics and Technologies

#### Vilnius, Lithuania

The goal - to gain knowledge about the chaotic material physics, their production technologies, characteristics, research methods.

**Contact:** Gintaras Dikčius – +370 5 236 6111 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt) – <http://www.ffi.vu.lt/en/studies/information>

### MA-level course : Silicon Photovoltaic Cell Manufacturing Technology

#### Vilnius, Lithuania

After this course students will be able to explain the crystalline silicon solar cell physics and technology, summarize and compare solar cells made in laboratory conditions and in mass production, evaluate research trends and factors of technological development.

**Contact:** Gintaras Dikčius – +370 5 236 6112 – [gintaras.dikcius@ff.vu.lt](mailto:gintaras.dikcius@ff.vu.lt) – <http://www.ffi.vu.lt/en/studies/information>

### MA-level course : Applied Optics and Photonics

#### Kaunas, Lithuania

The students are able to master the properties of the light (waves and photons) in interaction with materials. The principal laws of physical and geometrical optics are taught to use in practice. The knowledge about physical principles of modern optical devices operation is given. The students are introduced about application of optical control and measurement methods in physical experiments, technology and materials science

**Contact:** Giedrius Laukaitis – +370 686 96355 – [giedrius.laukaitis@ktu.lt](mailto:giedrius.laukaitis@ktu.lt) – <http://ktu.edu/en/studies>

**NETHERLANDS**

## NETHERLANDS

### Physics Master: specialisation: Research in Physics, Quantum Matter and Optics

#### Leiden, South Holland

It offers comprehensive coverage of major current research themes, such as scanning probe techniques based on atomic force and scanning tunneling microscopy, molecular electronics, oxide electronics, superconductivity, quantum optics and quantum information, and strong photon-matter interaction.

**Contact:** 00 31 (0)71 527 80 11 – <http://en.mastersinleiden.nl/programmes/research-in-physics-quantum-matter-and-optics/en/introduction>

### Applied Physics Master

#### Groningen, Groningen

The Master's degree programme in Applied Physics offers an excellent combination of fundamental research on the one hand, and an open eye to possible industrial applications on the other.

**Contact:** [prospectivesl@rug.nl](mailto:prospectivesl@rug.nl) – [www.rug.nl/howtoapply](http://www.rug.nl/howtoapply)

### Master Physics and Astronomy

#### Nijmegen, Gelderland

Applying the laws of physics in real-life situations, ranging from measuring brain activity to designing new materials and investigating space objects .

**Contact:** Emily van Mierlo – 00 31 (0)24 365 30 13 – [physicsandastronomy@ru.nl](mailto:physicsandastronomy@ru.nl)  
<http://www.ru.nl/english/education/masters/physics-astronomy/>

### Master Applied Physics: Imaging Physics Track

#### Delft, South Holland

Applied Physics covers phenomena ranging from the infinitesimally small – subatomic particles – to the unimaginably large – the universe. Applied physics is about translating a deep understanding of the theoretical underpinnings of physics into concrete results to benefit society.

**Contact:** Tamara Bacsik – 00 31 (0)15 278 8180 – [msc-trw@tudelft.nl](mailto:msc-trw@tudelft.nl)  
<http://www.tudelft.nl/en/study/master-of-science/master-programmes/applied-physics/>



## NETHERLANDS

### Applied Physics Master

#### Eindhoven, North Brabant

The Master's degree program in Applied Physics gives you the opportunity to get involved in physical phenomena, new technologies and measurement methods. These are based on technical applications of physical principles in the most diverse disciplines.

**Contact:** 00 31 (0)40 247 4415 – [phys.studie.info@tue.nl](mailto:phys.studie.info@tue.nl)

<https://www.tue.nl/en/education/tue-graduate-school/masters-programs/applied-physics/>

### Applied Physics Master, specialisation Optics and Biophysics

#### Enschede, Overijssel

The specialization in Optics and Biophysics of the MSc in Applied Physics focuses on research into the properties of light and laser technologies and life processes.

**Contact:** 00 31 (0)53 4895489 – [master@utwente.nl](mailto:master@utwente.nl)

<https://www.utwente.nl/en/education/master/programmes/applied-physics/specialization/optics-and-biophysics/>

**SLOVAKIA**

## SLOVAKIA

### Electronics and Photonics

#### Bratislava, Western Slovakia

Integrated photonics, lasers and laser systems, optical communication systems.

**Contact:** Prof. Frantisek Uherek – 421905630144 – [frantisek.uherek@stuba.sk](mailto:frantisek.uherek@stuba.sk)  
[www.stuba.sk](http://www.stuba.sk)

### Electro-energetics

#### Bratislava, Western Slovakia

Electrical engineering, generation of electricity, applied electrotechnics including lightning technology.

**Contact:** Prof. Ing. František Janíček, PhD – +421-2-602 91 298  
[frantisek.janicek@stuba.sk](mailto:frantisek.janicek@stuba.sk) – <http://www.stuba.sk/>

### Applied chemistry and biochemistry

#### Trnava, Western Slovakia

Optics and spectroscopy in general chemistry and the study of metabolites.

**Contact:** Prof. Ing. František Janíček, PhD – +421-2-602 91 298  
[frantisek.janicek@stuba.sk](mailto:frantisek.janicek@stuba.sk) – <http://www.stuba.sk/>

### Biochemistry

#### Kosice, Eastern Slovakia

Optical methods in chemical analysis of metabolites with precise knowledge of undergoing mechanisms.

**Contact:** 00421 55 62 221 24 – [pfsekret@upjs.sk](mailto:pfsekret@upjs.sk)  
<http://www.upjs.sk/prirodovedecka-fakulta/>

### Organic, anorganic, analytical chemistry

#### Kosice, Eastern Slovakia

Advanced use of spectroscopical methods in chemical analyses in anorganic, organic and analytical chemistry.

**Contact:** 00421 55 62 221 24 – [pfsekret@upjs.sk](mailto:pfsekret@upjs.sk)  
<http://www.upjs.sk/prirodovedecka-fakulta/>

### Biophysics

#### Kosice, Eastern Slovakia

Optics and spectroscopy in research in different fields-from research to therapy.

**Contact:** Prof. RNDr. Pavol Miškovský, CSc. – 00421 55 2342206  
[pavol.miskovsky@upjs.sk](mailto:pavol.miskovsky@upjs.sk) – [www.biophysics.sk](http://www.biophysics.sk)

## SLOVAKIA

### Physics

#### **Kosice, Eastern Slovakia**

Course of physics including more practical subjects on optics, photonics and spectroscopy.

**Contact:** 00421 55 62 221 24 – [pfsekret@upjs.sk](mailto:pfsekret@upjs.sk) - [www.upjs.sk/prirodovedecka-fakulta/](http://www.upjs.sk/prirodovedecka-fakulta/)

### Teaching of academic subjects-physics in combination

#### **Kosice, Eastern Slovakia**

General physics course with deeper insight into not only optics, photonics and spectroscopy and possibilities of their use.

**Contact:** 00421 55 62 221 24 – [pfsekret@upjs.sk](mailto:pfsekret@upjs.sk)  
[www.upjs.sk/prirodovedecka-fakulta/](http://www.upjs.sk/prirodovedecka-fakulta/)

### Teaching of academic subjects-chemistry in combination

#### **Kosice, Eastern Slovakia**

Spectroscopical methods in chemical analyses in anorganic and organic chemistry with pedagogical background.

**Contact:** 00421 55 62 221 24 – [pfsekret@upjs.sk](mailto:pfsekret@upjs.sk) - [www.upjs.sk/prirodovedecka-fakulta/](http://www.upjs.sk/prirodovedecka-fakulta/)

### Teaching of academic subjects-physics in combination

#### **Bratislava, Western Slovakia**

Further development of bachelors study with deeper physical background not only in optics and photonics.

**Contact:** Ing. Iveta Gašparová – 00421 (0)2 602 95 – [so\(at\)fmph.uniba.sk](mailto:so(at)fmph.uniba.sk)  
[www.fmph.uniba.sk](http://www.fmph.uniba.sk)

### Biomedical physics

#### **Bratislava, Western Slovakia**

Course with more practical background in optics and photonics in multiple areas of research.

**Contact:** Ing. Iveta Gašparová – 00421 (0)2 602 95 – [so\(at\)fmph.uniba.sk](mailto:so(at)fmph.uniba.sk)  
[www.fmph.uniba.sk](http://www.fmph.uniba.sk)

### Biomedical physics

#### **Bratislava, Western Slovakia**

Course with more practical background in optics and photonics in multiple areas of research.

**Contact:** Ing. Iveta Gašparová – 00421 (0)2 602 95 – [so\(at\)fmph.uniba.sk](mailto:so(at)fmph.uniba.sk)  
[www.fmph.uniba.sk](http://www.fmph.uniba.sk)

## SLOVAKIA

### Biophysics and chemical physics

#### Bratislava, Western Slovakia

Lasers, optics and physics in biomedical research.

**Contact:** Ing. Iveta Gašparová – 00421 (0)2 602 95 – [so\(at\)fmph.uniba.sk](mailto:so(at)fmph.uniba.sk)  
[www.fmph.uniba.sk](http://www.fmph.uniba.sk)

### Lasers and optics

#### Bratislava, Western Slovakia

Using of lasers and optics in research with precise understanding of associated phenomena.

**Contact:** Ing. Iveta Gašparová – 00421 (0)2 602 95 – [so\(at\)fmph.uniba.sk](mailto:so(at)fmph.uniba.sk)  
[www.fmph.uniba.sk](http://www.fmph.uniba.sk)

### Plasma physics

#### Bratislava, Western Slovakia

Advanced spectroscopy of plasma generated by different mechanisms.

**Contact:** Ing. Iveta Gašparová – 00421 (0)2 602 95 – [so\(at\)fmph.uniba.sk](mailto:so(at)fmph.uniba.sk)  
[www.fmph.uniba.sk](http://www.fmph.uniba.sk)

### Analytical Chemistry

#### Bratislava, Western Slovakia

Optical methods in chemical analysis with deeper physico-chemical background.

**Contact:** 00421(02)602-96-11 – [so@fns.uniba.sk](mailto:so@fns.uniba.sk) - [www.fns.uniba.sk](http://www.fns.uniba.sk)

### Teaching of academic subjects-chemistry in combination

#### Bratislava, Western Slovakia

Spectroscopical methods in chemical analyses in anorganic and organic chemistry.

**Contact:** 00421(02)602-96-11 – [so@fns.uniba.sk](mailto:so@fns.uniba.sk) - [www.fns.uniba.sk](http://www.fns.uniba.sk)

### Biomedical engineering

#### Zilina, Northern Slovakia

Lasers, optics and spectroscopy in biomedical engineering.

**Contact:** [sekrdek@fel.uniza.sk](mailto:sekrdek@fel.uniza.sk)  
<http://fel.uniza.sk/>

**SPAIN**

## SPAIN

### Master's Degree in Advanced Optometry and Vision Sciences

#### Valencia

With these Master's studies a high training will be obtained for the professional specialisation in different areas of the optometry, such as the geriatric optometry, visual therapies or the optometric aspects of the refractive surgery, among others. The studies will prepare in addition for taking on research tasks both in the area of Vision Sciences and the applied clinic research.

**Contact:** Antonio López Alemany (+34)963543199 [Antonio.Lopez-Alemany@uv.es](mailto:Antonio.Lopez-Alemany@uv.es)  
[www.uv.es](http://www.uv.es)

### Erasmus Mundus Master's Degree in Photonics Engineering, Nanophotonics and Biophotonics (Europhotonics)

#### Europe

The EUROPHOTONICS-POESII Erasmus Mundus Joint Master Degree (EMJMD) started in 2010 is a two years Master program focusing on advanced research and applied topics that will constitute the near and extended future scientific goals in the field of Photonics Engineering, Nanophotonics, Biophotonics, with interdisciplinary applications.

**Contact:** Crina Maria Cojocar ( +34)937398571 [crina.maria.cojocar@upc.edu](mailto:crina.maria.cojocar@upc.edu)  
[www.europhotonics.org](http://www.europhotonics.org)

### Master's Degree in Computer Vision

#### Barcelona

This master comprises computer vision in multiple systems, such as assisting medical diagnosis and surgery, car driving, quality control and surveillance applications, or improving interfaces for multimedia data access.

**Contact:** Maria Vanrell Martorell (+34)935812415 [m.computer.vision@uab.cat](mailto:m.computer.vision@uab.cat)  
[pazines.uab.cat/mcv/](http://pazines.uab.cat/mcv/)

### Master's Degree in Photonics

#### Barcelona

The goal of the master's degree in Photonics is to provide students with a solid grounding in the various areas of photonics and with the tools they need to become researchers or entrepreneurs in this field.

**Contact:** Crina Maria Cojocar (+34)937398571 [crina.maria.cojocar@upc.edu](mailto:crina.maria.cojocar@upc.edu)  
[photonics.masters.upc.edu/en](http://photonics.masters.upc.edu/en)

## SPAIN

### Master's Degree in Biomedical Engineering

#### Barcelona

The master's degree in Biomedical Engineering provides advanced training in various aspects of the discipline. It provides the foundations for academic or professional specialization and an introduction to applied research among which photonics is found in instrumentation, sensors or image treatment.

**Contact:** *Montserrat Vallverdu Ferrer (+34)934017160 montserrat.vallverdu@upc.edu*  
*www.upc.edu/estudis/en/mastersuniversitaris/engbiomedica/introduction*

### Master's Degree in Optometry and Vision Sciences

#### Barcelona

Master's degree in Optometry and Vision Sciences allows you to specialise professionally in areas of optics and optometry such as the cornea and contact lenses, paediatric optometry, geriatric optometry, visual therapies, low vision and optometric aspects of refractive surgery.

**Contact:** *Aurora Torrents (+34)937398336 aurora.torrents@upc.edu*  
*muocv.masters.upc.edu/en/general-information*

### Master's Degree in Quantum Science and Technology

#### Donostia, San Sebastián

This Master's program squarely recognizes this fact by providing a solid foundation in several facets of quantum science and technology. It includes relevant photonic areas in the fields of quantum optics and quantum dots.

**Contact:** *Iñigo Luis Egusquiza Egusquiza (+34)881811000 quantummaster@ehu.es*  
*www.ehu.es/en/web/cienciaytecnologiacuanticas/aurkezpena*

### Master's Degree in Nanoscience and Nanotechnology

#### Barcelona

Nanoscience and Nanotechnology aim to provide knowledge of the matter structure to control its behaviour at the nanoscale, and to exploit it for the design and development of new products and systems. It includes nanophotonics, nanosensors, imaging and spectroscopies.

**Contact:** *Sergio Hernandez Marquez (+34)934029069 nanotec@ub.edu*  
*www.ub.edu/nanotec/structure.html*



## SPAIN

### Master's Degree in Communications

#### **Pamplona**

The main objective of the Master's in Communications is for students to understand how the different parts that make up a complete communication system work until they are capable of coming up with original ideas. Photonics are found here in optical communications branch.

**Contact:** *Carlos del Rio Bocio (+34)948169326 carlos@unavarra.es  
www.unavarra.es*

### Master's Degree in Physics

#### **Santiago de Compostela, Santiago**

This Master's in Physics is essentially research oriented, but at the same time it provides cutting edge and up-to-date training in Physics that gives graduates the opportunity to access jobs in the different productivity sectors. It allows the specialization in Light and Radiation Physics.

**Contact:** *Luis Miguel Varela Cabo (+34)881811000 uismiguel.varela@usc.es  
www.usc.es/masteres/en/masters/science/physics*

### Master's Degree in Photonics and Laser Technology

#### **Santiago de Compostela, Santiago**

The master's degree trains students to work in any field that requires a general knowledge of lasers, their foundations and applications.

**Contact:** *Maria Teresa Flores Arias (+34)881811000 maite.flores@usc.es  
www.usc.es/masteres/en/masters/engineering-architecture/photonics-laser-technology*

### Master's Degree in Vision Science Research

#### **Santiago de Compostela, Santiago**

The aim of this master's degree is offering comprehensive training in vision science, combining biomedical, physical-optical and neurophysiological aspects, as well as providing the essential previous preparation for future researchers, scientists and university professors.

**Contact:** *Maria Teresa Rodriguez Ares (+34)881811000 mariateresa.rodriguez@usc.es  
www.usc.es/masteres/en/masters/health-science/vision-science-research*

**SWEDEN**

## SWEDEN

### Materials optics Linköping University

#### Linköping

The course objective is to give a physical background to linear optical properties of materials, to describe how they can be measured and analyzed with modern techniques and to give examples of how they can be utilized in devices and for understanding of advanced optical structures.

**Contact:** Hans Arwin – [hans.arwin@liu.se](mailto:hans.arwin@liu.se)

[http://kdb-5.liu.se/liu/lith/studiehandboken/svkursplan.lasso?&k\\_kurskod=TFYA04&k\\_budget\\_year=2015](http://kdb-5.liu.se/liu/lith/studiehandboken/svkursplan.lasso?&k_kurskod=TFYA04&k_budget_year=2015)

### Biomedical Optics Linköping University

#### Linköping

The course should provide a possibility for the student to acquire knowledge about the physical properties of light and its impact and interaction with biological tissue.

**Contact:** Göran Salerud – [goran.salerud@liu.se](mailto:goran.salerud@liu.se)

[http://kdb-5.liu.se/liu/lith/studiehandboken/svkursplan.lasso?&k\\_kurskod=TBMT36&k\\_budget\\_year=2015](http://kdb-5.liu.se/liu/lith/studiehandboken/svkursplan.lasso?&k_kurskod=TBMT36&k_budget_year=2015)

### Optoelectronics Linköping University

#### Linköping

The overall aim of this course is to give fundamental knowledge of optoelectronic devices and fiber optics in order to be able to understand present and future technologies for applications in optical communications, sensor/imaging techniques, as well as energy conversion that has found renewed interest recently due to world-wide demands of energy saving and new energy production.

**Contact:** Wei-Xin Ni – [wei-xin.ni@liu.se](mailto:wei-xin.ni@liu.se)

[http://kdb-5.liu.se/liu/lith/studiehandboken/svkursplan.lasso?&k\\_kurskod=TFYA38&k\\_budget\\_year=2015](http://kdb-5.liu.se/liu/lith/studiehandboken/svkursplan.lasso?&k_kurskod=TFYA38&k_budget_year=2015)

### Optoelectronics Linköping University

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**Contact:** Wei-Xin Ni – [wei-xin.ni@liu.se](mailto:wei-xin.ni@liu.se)

[http://kdb-5.liu.se/liu/lith/studiehandboken/svkursplan.lasso?&k\\_kurskod=TFYA38&k\\_budget\\_year=2015](http://kdb-5.liu.se/liu/lith/studiehandboken/svkursplan.lasso?&k_kurskod=TFYA38&k_budget_year=2015)

## SWEDEN

### Optical Physics (SK2300) Royal Institute of Technology

#### Stockholm

- The course has two main aims : To give deepened and widened insight into optical physics seen both as science and as technology. To create a fundament for the more specialized courses in optics.
- Course main content : Electromagnetic fields, propagation in vacuum and matter. Polarization, interference, thin film optics, optical metrology. Diffraction, Fourier optics, coherence.

**Contact:** U Göran Manneberg – +46 8 553 781 27 – [mabego@kth.se](mailto:mabego@kth.se)  
<http://www.kth.se/student/kurser/kurs/SK2300?l=en>

### Laser Physics (SK2411) Royal Institute of Technology

#### Stockholm

- Essentials of quantum-mechanical description of the interaction between photons and electrons in optical gain media.
- Basic properties of lasers and photon amplifiers.
- Physical principles of laser action.
- Essential knowledge of laser building blocks.
- Overview of the most important laser types.

**Contact:** Valdas Pasiskevicius – +46 8 553 781 55 – [vp@kth.se](mailto:vp@kth.se)  
<http://www.kth.se/student/kurser/kurs/SK2411?l=en>

### Solid State Physics (IM2660) Royal Institute of Technology

#### Stockholm

- This course gives an introduction to solid state physics with emphasis on properties of electro-technically important crystalline materials. The primary theme is to study the basic theory of structure, composition and physical properties of crystalline materials.

**Contact:** Anand Srinivasan – +46 8 790 43 82 – [anand@kth.se](mailto:anand@kth.se)  
<https://www.kth.se/student/kurser/kurs/IM2660?l=en>

### Optical Physics (SK2301) Royal Institute of Technology

#### Stockholm

- Course main content: Chromatic and monochromatic aberrations and their implications. Methods to minimize aberration effects. Managing an optical design program.

**Contact:** U Göran Manneberg – +46 8 553 781 27 – [mabego@kth.se](mailto:mabego@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK2301?l=en>

## SWEDEN

### **Problem Solving in Optics (SK2320)** *Royal Institute of Technology*

#### **Stockholm**

The student will, after the course, be able to solve the type of optics related problems that can occur in a professional work situation.

**Contact:** U Göran Manneberg – +46 8 553 781 27 – [mabego@kth.se](mailto:mabego@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK2320?l=en>

### **Optical Systems Design (SK2330)** *Royal Institute of Technology*

#### **Stockholm**

Geometrical optics, aberration theory, evaluation of optical systems, ray-tracing using commercial software, methods of optical design.

**Contact:** Anna Burvall – +46 8 553 788 51 – [anna.burvall@biox.kth.se](mailto:anna.burvall@biox.kth.se)  
<https://www.kth.se/student/kurser/kurs/SK2330?l=en>

### **Fourier optics (SK2340)** *Royal Institute of Technology*

#### **Stockholm**

The overall aim of the course is that you should be able to analyze optical problems with the help of the approximations made in Fourier optics.

**Contact:** Ulrich Vogt – +46 8 553 788 89 – [uvogt@kth.se](mailto:uvogt@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK2340?l=en>

### **Optical Measurement Techniques(SK2350)** *Royal Institute of Technology*

#### **Stockholm**

With the previous courses in optics and waves as a background, the goal in this course is to specialize within chosen parts in modern optical physics, with consideration of the special aspects in metrological applications within industry and research.

**Contact:** U Göran Manneberg – +46 8 553 781 27 – [mabego@kth.se](mailto:mabego@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK2350?l=en>

## SWEDEN

### Quantum Electronics with Electro Optics (SK2400) *Royal Institute of Technology*

#### Stockholm

Course main content: Quantum mechanics directed towards quantization of the electromagnetic field, coherent states. Gaussian beams, optical resonators and rate equations. Types of lasers. Electro-optic and acousto-optic modulation. Non-linear optical formalism and parametric processes. Higher order nonlinearities and phase conjugation.

Q-switching and mode-locking. Waveguiding.

**Contact:** Katia Gallo – 08 553 786 95 – [gallo@kth.se](mailto:gallo@kth.se)

<https://www.kth.se/student/kurser/kurs/SK2400?l=en>

### Physics of Biomedical Microscopy (SK2500) *Royal Institute of Technology*

#### Stockholm

Course main content: Basic optical layout of the light microscope. Aberrations. Microscope objectives. Magnification. Numerical aperture. Microscope photometry. Detectors. Noise. Contrast methods (fluorescence, phase contrast, DIC). Resolution. Fourier methods. Optical transfer functions. Three-dimensional imaging in microscopy. Sampling and reconstruction of image data. Confocal microscopy. A brief introduction to tunnel and atomic force microscopy, electron microscopy, scanning near-field optical microscopy and X-ray microscopy.

**Contact:** Kjell S Carlsson – +46 8 553 781 32 – [kjellc@kth.se](mailto:kjellc@kth.se)

<https://www.kth.se/student/kurser/kurs/SK2500?l=en>

### X-ray Physics and Applications (SK2550) *Royal Institute of Technology*

#### Stockholm

Part 1: X-ray basics

X-ray interaction with matter, X-ray sources, X-ray optics, X-ray detectors

Part 2: Application examples and special topics

**Contact:** Ulrich Vogt – +46 8 553 788 89 – [uvogt@kth.se](mailto:uvogt@kth.se)

<https://www.kth.se/student/kurser/kurs/SK2550?l=en>

## SWEDEN

### **Nanophotonics and Bionanophotonics (SK2560)** *Royal Institute of Technology*

#### **Stockholm**

This course has been developed in parallel with the fast-advancing multidisciplinary research and technological developments in the field of nanophotonics and bionanophotonics, and addresses three main areas:

1. Quantum mechanical description of light-matter interaction in nanostructure
2. Nanophotonics
3. Nanobiophotonics: Nanotechnology for Biophotonics

**Contact:** *Ying Fu* – +46 8 524 848 89 – [fu@kth.se](mailto:fu@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK2560?l=en>

### **Laser Metrology and Optical Metrology (SK2360)** *Royal Institute of Technology*

#### **Stockholm**

Optics repetition. Laser and laser radiation, optical fibers. Distance and velocity measurements. Measurement illustrations. Holographic methods.

**Contact:** *U Göran Manneberg* – +46 8 553 781 27 – [mabego@kth.se](mailto:mabego@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK2360?l=en>

### **Optics, Supplementary Course for the Media Programme (SK2375)** *Royal Institute of Technology*

#### **Stockholm**

Refresh of basic optics, camera optics, zoom, aberrations, depth of field and depth of focus, photometry, light transport in camera optics, projector optics and light transport in projectors, alternative projector and display types, optics of the human eye, 3D vision, color vision.

**Contact:** *U Göran Manneberg* – +46 8 553 781 27 – [mabego@kth.se](mailto:mabego@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK2375?l=en>

### **Problem Solving in Optics, Continuation Course 1 (SK2321)** *Royal Institute of Technology*

#### **Stockholm**

The student will, after the course, be able to solve the type of optics related problems that can occur in a professional work situation. The course is a “problem solving course”, without ordinary lectures. The main content is therefore depending on the choice of problems.

**Contact:** *U Göran Manneberg* – +46 8 553 781 27 – [mabego@kth.se](mailto:mabego@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK2321?l=en>

## SWEDEN

### **Problem Solving in Optics, Continuation Course 2 (SK2322)** *Royal Institute of Technology*

#### **Stockholm**

The student will, after the course, be able to solve the type of optics related problems that can occur in a professional work situation. The course is a “problem solving course”, without ordinary lectures. The main content is therefore depending on the choice of problems.

**Contact:** U Göran Manneberg – +46 8 553 781 27 – [mabego@kth.se](mailto:mabego@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK2321?l=en>

### **Physics of Biomedical Microscopy, Extended Course (SK2501)** *Royal Institute of Technology*

#### **Stockholm**

Basic optical layout of the light microscope. Aberrations. Microscope objectives. Magnification. Numerical aperture. Microscope photometry. Detectors. Noise. Contrast methods (fluorescence, phase contrast, DIC). Resolution. Fourier methods. Optical transfer functions. Three-dimensional imaging in microscopy. Sampling and reconstruction of image data. Confocal microscopy. A brief introduction to tunnel and atomic force microscopy, electron microscopy, scanning near-field optical microscopy and X-ray microscopy.

**Contact:** Kjell S Carlsson – +46 8 553 781 32 – [kjellc@kth.se](mailto:kjellc@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK2501?l=en>

### **Physics of Visual Impressions (SK2370)** *Royal Institute of Technology*

#### **Stockholm**

The main goal with the course is to extend the basic course in physics to develop an understanding of vision related physics.

**Contact:** U Göran Manneberg – +46 8 553 781 27 – [mabego@kth.se](mailto:mabego@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK2370?l=en>

### **Physics of Visual Impressions, Larger Course (SK2371)** *Royal Institute of Technology*

#### **Stockholm**

The main goal with the course is to develop an understanding of vision related physics. Basic geometrical and physical optics. Optics of the human eye, accommodation, adaptation and convergence. Different methods for 3D-illusion. Wavelength and colour, colour spaces and colorimetry. Colour in dyes and pigments. Additive and subtractive colour mixing. Photometry and illumination. Cameras and imaging. Quality in camera imaging. Aliasing.

**Contact:** U Göran Manneberg – +46 8 553 781 27 – [mabego@kth.se](mailto:mabego@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK2371?l=en>



## SWEDEN

### Technical Photography (SK2380) Royal Institute of Technology

#### Stockholm

Optical imaging. Photographic lenses. Photometry. The camera. Photographic film. Digital cameras. Electronic imaging sensors. Tone reproduction. Color photography. Photographic prints. X-ray, ultraviolet and infrared photography. High speed photography. Imaging quality.

**Contact:** Kjell S Carlsson – +46 8 553 781 32 – [kjellc@kth.se](mailto:kjellc@kth.se)  
<https://www.kth.se/student/kurser/kurs/SK2380?l=en>

### Photovoltaics (5cr) Dalarna University

#### Borlänge

The course deals with principles of solar cells and their physics including various semiconductor materials and their suitability for solar cell manufacturing and absorption of solar radiation. The second part of the courses deals with PV system components, system principle and basic sizing.

**Contact:** Frank Fiedler – 46778711 – [ffi@du.se](mailto:ffi@du.se)  
<http://www.du.se/en/solar>

### Design of PV and PV hybrid systems (5cr) Dalarna University

#### Borlänge

The course deals with detailed sizing and designing of components and complete PV and PV hybrid systems. The course includes computer simulation with PVsyst and Homer, system analysis as well as performance and economical evaluations.

**Contact:** Frank Fiedler – 46778711 – [ffi@du.se](mailto:ffi@du.se)  
<http://www.du.se/en/solar>

### Wireless, Photonics and Space Engineering (MPWPS) Chalmers University of Technology

#### Gothenburg

2-year master program (12 courses and a thesis) including 6 photonics-related courses specified below (4 pure photonics and 2 blended).

**Contact:** Hans Hjelmgren – 031 772 17 37 – [hans.hjelmgren@chalmers.se](mailto:hans.hjelmgren@chalmers.se)  
<http://www.chalmers.se/en/education/programmes/masters-info/Pages/Wireless-Photonics-and-Space-Engineering.aspx>

## SWEDEN

### Electromagnetic waves and components Chalmers University of Technology

#### Gothenburg

The aim of the course is to enhance the student's insight into the physical concepts and principles used to describe the generation and detection of electromagnetic waves, and their propagation through different types of media.

**Contact:** Sheila Galt, Jörgen Bengtsson – 031 772 18 89 – [sheila.galt@chalmers.se](mailto:sheila.galt@chalmers.se)  
[https://www.student.chalmers.se/sp/course?course\\_id=23140](https://www.student.chalmers.se/sp/course?course_id=23140)

### Wireless and photonics system engineering Chalmers University of Technology

#### Gothenburg

The aim of the course is to treat the main ideas, methods, circuits, and components of microwave and photonic engineering from a system perspective, and thus give the overview system understanding required for a hardware engineer.

**Contact:** Magnus Karlsson, Christian Fager, Hans Hjelmgren – 031 772 15 90  
[magnus.karlsson@chalmers.se](mailto:magnus.karlsson@chalmers.se)  
[https://www.student.chalmers.se/sp/course?course\\_id=23323](https://www.student.chalmers.se/sp/course?course_id=23323)

### Fundamentals of photonics Chalmers University of Technology

#### Gothenburg

The aim of the course is to provide the student with an up to date knowledge of concepts and techniques used in modern photonics. Different physical models for light propagation are discussed, and they are implemented using modern numerical methods.

**Contact:** Sheila Galt, Magnus Karlsson – [https://www.student.chalmers.se/sp/course?course\\_id=23540](https://www.student.chalmers.se/sp/course?course_id=23540)

### Laser engineering Chalmers University of Technology

#### Gothenburg

This course aims to efficiently introduce the main principles of laser physics and laser technology and to give a basic knowledge of the most commonly used laser types and their applications.

**Contact:** Victor Torres-Company – 031 772 19 04 – [torresv@chalmers.se](mailto:torresv@chalmers.se)  
[https://www.student.chalmers.se/sp/course?course\\_id=23758](https://www.student.chalmers.se/sp/course?course_id=23758)

## SWEDEN

### Optoelectronics Chalmers University of Technology

#### Gothenburg

This course aims to provide good understanding of semiconductor materials used in optoelectronics with a special emphasis on optical properties and processes, as well as components for generation, modulation and detection of light in the ultraviolet, visible and infrared.

**Contact:** Anders Larsson, Johan Gustavsson – 031 772 15 93  
[anders.larsson@chalmers.se](mailto:anders.larsson@chalmers.se)  
[https://www.student.chalmers.se/sp/course?course\\_id=23327](https://www.student.chalmers.se/sp/course?course_id=23327)

### Fiber optical communication Chalmers University of Technology

#### Gothenburg

The aim of the course is to describe the components and concepts of fiber optical communication systems, combining theoretical descriptions with system aspects.

**Contact:** Pontus Johannisson – 031 772 16 26 – [pontus.johannisson@chalmers.se](mailto:pontus.johannisson@chalmers.se)  
[https://www.student.chalmers.se/sp/course?course\\_id=23300](https://www.student.chalmers.se/sp/course?course_id=23300)

### Nanotechnology (MPNAT) Chalmers University of Technology

#### Gothenburg

2-year master program (12 courses and a thesis) including 2 photonics-related courses specified below (as well as optional courses in MPWPS).

**Contact:** Elsebeth Schröder – 031 772 84 24 – [elsebeth.schroder@chalmers.se](mailto:elsebeth.schroder@chalmers.se)  
<http://www.chalmers.se/en/education/programmes/masters-info/Pages/Nanotechnology.aspx>

### Semiconductor Materials Physics Chalmers University of Technology

#### Gothenburg

The aim of the course is both to give a broad overview of the semiconductor materials field, and an understanding of the physics of semiconductor materials as well as the properties of different types of hetero- and quantum-structures, their fabrication and characterization.

**Contact:** Tommy Ive – 031 772 33 79 – [tommy.ive@chalmers.se](mailto:tommy.ive@chalmers.se)  
[https://www.student.chalmers.se/sp/course?course\\_id=23856](https://www.student.chalmers.se/sp/course?course_id=23856)

## SWEDEN

### **Modelling and Fabrication of Micro/Nano Devices** *Chalmers University of Technology*

#### **Gothenburg**

We aim to give the students an introduction to research and device fabrication in clean-room environment, important for further activities both in research and industry related to micro- and nano-technology.

**Contact:** Avgust Yurgens – 031 772 33 19 – [avgust.yurgens@chalmers.se](mailto:avgust.yurgens@chalmers.se)  
[https://www.student.chalmers.se/sp/course?course\\_id=23925](https://www.student.chalmers.se/sp/course?course_id=23925)

### **Laser Spectroscopy** *University of Uppsala*

#### **Uppsala**

The course covers the properties of light, interaction of light with matter, the principles of lasers, different kinds of lasers.

**Contact:** Burkhard Zietz – 018-471 3636 – [burkhard.zietz@kemi.uu.se](mailto:burkhard.zietz@kemi.uu.se)  
[https://www.student.chalmers.se/sp/course?course\\_id=23925](https://www.student.chalmers.se/sp/course?course_id=23925)

### **Optics and photonics (1FA589)** *University of Uppsala*

#### **Uppsala**

The course gives a solid general introduction to optics and photonics and focuses on the emission, amplification, transmission, detection and application of light in a wide range of the electromagnetic spectrum – from ultraviolet, over the visible, to the infrared and terahertz.

**Contact:** Vitaliy Goryashko – 076-2057 997 – [vitaliy.goryashko@physics.uu.se](mailto:vitaliy.goryashko@physics.uu.se)  
<http://www.uu.se/utbildning/utbildningar/selma/kurser/?kKod=1FA589&typ=1&lasar=15/16>

### **Technical wave physics** *Luleå University of Technology*

#### **Luleå**

Advanced course in wave physics focusing on optical measurement systems.

**Contact:** Mikael Sjö Dahl – 0920-491220 – [mikael.sjodahl@ltu.se](mailto:mikael.sjodahl@ltu.se)

### **Modern experimental metrology** *Luleå University of Technology*

#### **Luleå**

Hands-on course in the use of various optical measurement systems.

**Contact:** Kerstin Ramser – 0920-491648 – [Kerstin.Ramser@ltu.se](mailto:Kerstin.Ramser@ltu.se)

SWEDEN

**Modern experimental metrology**  
***Luleå University of Technology***

**Luleå**

Hands-on course in the use of various optical measurement systems.

**Contact:** Kerstin Ramser – 0920-491648 – [Kerstin.Ramser@ltu.se](mailto:Kerstin.Ramser@ltu.se)

**UK**

## UK

### Physics

#### **Aberystwyth University**

##### **Aberystwyth, Wales**

This course shares modules with the bachelors course at Aberystwyth, with modules in Optics, Optronics and Quantum Mechanics. In the fourth year, there is a core module on Quantum Technology. The Mphys project may be photonics related.

**Contact:** 01970 622021 – [ug-admissions@aber.ac.uk](mailto:ug-admissions@aber.ac.uk)

<https://courses.aber.ac.uk/undergraduate/mphys-physics-degree/>

### Broadband and Optical Communications

#### **Bangor University**

##### **Bangor, Wales**

This is a postgraduate Masters course which includes taught modules on Broadband communication, mobile communication systems, data networks, RF and optical technologies and sensor systems. There is a research project for which you may choose a photonics related topic.

**Contact:** +44 (0)1248 382683 – [eng-pg-admissions@bangor.ac.uk](mailto:eng-pg-admissions@bangor.ac.uk)

<http://www.bangor.ac.uk/courses/postgraduate/broadband-and-optical-Communications-msc>

### Physics

#### **University of Bath**

##### **Bath, Southwest England**

This integrated Mphys Physics course introduces Quantum Physics and Optics in year 1, Quantum & Atomic physics in year 2, Quantum Mechanics and Laser Physics in year 3 and Advanced Quantum Theory and photonics in year 4, along with a possibly photonics related MPhys project.

**Contact:** +44 (0)1225 38 6441 – [ask-admissions@bath.ac.uk](mailto:ask-admissions@bath.ac.uk)

<http://www.bath.ac.uk/catalogues/2011-2012/ph/USPH-AFM02.htm>

### Physics

#### **Queen's University Belfast**

##### **Belfast, Ireland**

Optics and Lasers, Quantum Mechanics and Optoelectronics are covered by this course, with specialist modules in year 4 such as Atomic, Molecular & Optical Physics and Laser & Plasma Physics.

**Contact:** +44 (0) 28 9097 3838 – [admissions@qub.ac.uk](mailto:admissions@qub.ac.uk)

<http://www.qub.ac.uk/home/StudyatQueens/CourseFinder/UG/Physics/F303/>

## UK

### Physics

#### University of Birmingham

##### Birmingham, West Midlands

Optics, Quantum Mechanics, Optics, Experimental Physics, and several optional modules can be studied in the first 3 years. In the fourth year, the majority of the year is taken up by a research project, which can be photonics related.

**Contact:** +44 (0)121 414 4563 – [physics-adms@bham.ac.uk](mailto:physics-adms@bham.ac.uk)

<http://www.birmingham.ac.uk/undergraduate/courses/physics/physics-msci.aspx>

### Physics

#### University of Bristol

##### Bristol, Southwest

Quantum mechanics is studied throughout this programme, with the addition of experimental physics in the first and second years. Optics is covered in the third year, while the fourth year is very flexible - you may choose photonics related modules.

**Contact:** +44 (0)117 394 1639 – [sci-ug-admissions@bristol.ac.uk](mailto:sci-ug-admissions@bristol.ac.uk)

<http://www.bristol.ac.uk/study/undergraduate/2016/physics/msci-physics/>

### Natural Sciences

#### Cambridge University

##### Cambridge, UK

The natural sciences course is one of the broadest courses available in the world. You may choose physics and photonics courses throughout the programme. There is an optional fourth year, including several photonics options, which leads to an Msci degree.

**Contact:** (01223) 356454 – [natsci@admin.cam.ac.uk](mailto:natsci@admin.cam.ac.uk)

<http://www.natsci.tripos.cam.ac.uk/>

### Condensed Matter and Photonics

#### Cardiff University

##### Cardiff, UK

This is a postgraduate course which has either the award of Mphil or PhD. You have the opportunity of choosing from a wide range of topics researched in the Condensed Matter and Photonics group.

**Contact:** Miss Nicola Hunt – +44 (0) 29 2087 6457 – [physics-pg@cardiff.ac.uk](mailto:physics-pg@cardiff.ac.uk)

<http://courses.cardiff.ac.uk/postgraduate/course/detail/p338.html>



## UK

### Physics

#### University of Dundee

##### Dundee, Scotland

You will study Light, Waves, Optics, Quantum Mechanics and Quantum properties of matter. There are advanced Quantum Mechanics, Photonics and Optics options if you choose the five year Msci degree.

**Contact:** +44 (0)1382 386968 – [SSE@dundee.ac.uk](mailto:SSE@dundee.ac.uk)

[http://www.dundee.ac.uk/study/ug/physics/?c=physics+\(msci\)](http://www.dundee.ac.uk/study/ug/physics/?c=physics+(msci))

### Electronic Engineering and Physics

#### University of Dundee

##### Dundee, Scotland

You will study Light, Waves and Optics during the first 3 years of this programme. There are advanced Photonics and Optics options if you choose the 4 year MEng degree.

**Contact:** +44 (0)1382 386968 – [SSE@dundee.ac.uk](mailto:SSE@dundee.ac.uk)

<http://www.dundee.ac.uk/study/ug/physics/?c=electronic+engineering+&+physics>

### Physics

#### Durham University

##### Durham, North East

Quantum Physics studied throughout the 4 year course, with option of studying advanced Quantum Physics, Atoms, Lasers and Qubits in year 4.

**Contact:** +44 (0)191 334 3726 – [physics.admissions@durham.ac.uk](mailto:physics.admissions@durham.ac.uk)

<https://www.dur.ac.uk/physics/undergraduate/courses/>

### Chemical Physics with a Year in Industry

#### East Anglia University

##### Norwich, East of England

This 4 year course covers Quantum Mechanics, nanoparticles, laser systems and their applications, in addition to topics from physics, chemistry and mathematics. The third year consists of an industrial placement. In the fourth year, you will complete a research project.

**Contact:** +44 (0)1603 591515 – [admissions@uea.ac.uk](mailto:admissions@uea.ac.uk)

<https://www.uea.ac.uk/study/undergraduate/degree/detail/mchem-chemical-physics-with-a-year-in-industry>

### Physics

#### University of Edinburgh

##### Edinburgh, Scotland

Quantum Mechanics is taught in the third, fourth and fifth years. There are optional modules available in the fourth and fifth years on Lasers and their Applications.

**Contact:** Caroline Keir – +44 (0) 131 651 7855 – [enquiries@ph.ed.ac.uk](mailto:enquiries@ph.ed.ac.uk)

<http://www.ph.ed.ac.uk/studying/undergraduate/our-degrees/physics>

## UK

### Physics with a Year Abroad

#### University of Edinburgh

##### Edinburgh, Scotland

This degree shares a syllabus with the regular Mphys degree with Quantum Mechanics being taught in the third and fifth years. The fourth year is spent on a research project abroad. There is optional modules available in the fifth year on Lasers and their Applications.

**Contact:** Caroline Keir – +44 (0) 131 651 7855 – [enquiries@ph.ed.ac.uk](mailto:enquiries@ph.ed.ac.uk)

<http://www.ph.ed.ac.uk/studying/undergraduate/our-degrees/physics-year-abroad>

### Physics

#### University of Exeter

##### Exeter, South West England

Waves & Optics, Quantum Mechanics, Experimental Physics, Lasers, Materials & Nanoscale probes and Quantum Optics & Photonics are modules covered in this 4 year Mphys degree programme. You have the option of selecting a photonics related Mphys research project in year 4.

**Contact:** +44 (0)1392 725349 – [ug-ad-phys@exeter.ac.uk](mailto:ug-ad-phys@exeter.ac.uk)

<http://www.exeter.ac.uk/undergraduate/degrees/physics/physicsmphys/>

### Physics

#### University of Glasgow

##### Glasgow, Scotland

Optics and Quantum Physics are course modules in year 1 and are expanded on in year 2. Laser Physics is studied in year 3. The Msci degree further develops these topics and provides an opportunity to complete a photonics related research project.

**Contact:** Dr Morag Casey – (+44) 141 330 4709 – [phas-ugadmissions@glasgow.ac.uk](mailto:phas-ugadmissions@glasgow.ac.uk)

<http://www.gla.ac.uk/undergraduate/degrees/physics/#/programmestructure>

### Physics

#### University of Hertfordshire

##### Hertfordshire

This Mphys degree in physics is offered both as a postgraduate degree and as an integrated masters degree. Quantum Mechanics and Optics is covered in the first two years, and a placement is available in the third year. Photonics related research projects are offered in the final year.

**Contact:** (01223) 356454 – [natsci@admin.cam.ac.uk](mailto:natsci@admin.cam.ac.uk)

<http://www.natsci.tripos.cam.ac.uk/>

## UK

### Condensed Matter and Photonics

#### Cardiff University

##### Cardiff, UK

This is a postgraduate course which has either the award of Mphil or PhD. You have the opportunity of choosing from a wide range of topics researched in the Condensed Matter and Photonics group.

**Contact:** Dr Mark Thompson – +44 (0)1707 284605 – [physics-admissions@herts.ac.uk](mailto:physics-admissions@herts.ac.uk)  
<http://www.herts.ac.uk/courses/physics3>

### Physics with Energy Science and Technology

#### Heriot-Watt University

##### Edinburgh, Scotland

Courses in Photonics, Quantum Mechanics, Optics, Laser Physics, Optical Metrology and Applications of Lasers are covered through this degree after the first year.

**Contact:** Patrik Ohberg – +44 (0)131 451 3025 – [physics@eps.hw.ac.uk](mailto:physics@eps.hw.ac.uk)  
<http://www.undergraduate.hw.ac.uk/programmes/F391/>

### Chemical Physics

#### Heriot Watt University

##### Edinburgh, Scotland

Courses in Photonics, Quantum Mechanics, Optics, Laser Physics, Optical Metrology and Applications of Lasers are covered through this degree, and advanced in the fifth year.

**Contact:** Patrik Ohberg – +44 (0)131 451 3025 – [physics@eps.hw.ac.uk](mailto:physics@eps.hw.ac.uk)  
<http://www.undergraduate.hw.ac.uk/programmes/F322/>

### Photonics and Optoelectronic Devices

#### Heriot Watt University

##### Edinburgh, Scotland

This is a postgraduate MSc degree which delivers training in modern optics and semiconductor physics tailored to optoelectronic applications. You will gain knowledge about optical fibres and the technology and applications of optical communication.

**Contact:** Prof A K Kar – +44 (0) 131 451 3049 – [A.K.Kar@hw.ac.uk](mailto:A.K.Kar@hw.ac.uk)  
<http://www.postgraduate.hw.ac.uk/prog/msc-photonics-and-optoelectronic-devices/>

### Nano-science

#### Heriot Watt University

##### Edinburgh, Scotland

This is an integrated Mphys degree containing material common to the physics programme, such as optics and Quantum Mechanics. The fifth year is half dedicated to teaching material on nano-scale topics in Physics, Chemistry and Photonics.

**Contact:** Patrik Ohberg – +44 (0)131 451 3025 – [physics@eps.hw.ac.uk](mailto:physics@eps.hw.ac.uk)  
<http://www.undergraduate.hw.ac.uk/programmes/FC01/>

## UK

### Physics

#### *Heriot Watt University*

##### **Edinburgh, Scotland**

Some of the core concepts of this 5 year integrated Mphys course are Optics, Lasers and Photonics. The fifth year is taken up by a research project.

**Contact:** Patrik Ohberg – +44 (0)131 451 3025 – [physics@eps.hw.ac.uk](mailto:physics@eps.hw.ac.uk)

<http://www.undergraduate.hw.ac.uk/programmes/F302/>

### Physics

#### *University of Hertfordshire*

##### **Hertfordshire, East of England**

Quantum Mechanics, Optical Physics & Electromagnetism are covered through this course, with a professional placement in the third year as a sandwich year.

**Contact:** +44 (0) 1707 284800 – [ask@herts.ac.uk](mailto:ask@herts.ac.uk)

<http://www.herts.ac.uk/courses/physics3>

### Optics and Photonics

#### *Imperial College*

##### **London, Greater London**

Fibre technology, Laser Optics, Optics, Photonics structure, Optoelectronics, Laser Technology and Optical Design are all available modules in this postgraduate MSc degree.

**Contact:** 01603 591515 – [l.sanchez@imperial.ac.uk](mailto:l.sanchez@imperial.ac.uk)

<https://www.imperial.ac.uk/study/pg/physics/optics-photonics/>

### Physics

#### *Imperial College*

##### **London, Greater London**

There are many Photonics related courses such as Quantum Physics and Mechanics, Optics, BioPhotonics and Laser Technology. Quantum Optics is also available.

**Contact:** Dr Juliet Pickering – +44 (0)20 7594 7513 – [ph.admissions@imperial.ac.uk](mailto:ph.admissions@imperial.ac.uk)

<https://www.imperial.ac.uk/study/ug/courses/physics-department/physics/>

### Physics

#### *University of Hull*

##### **Hull, North East**

This Mphys degree covers a range of topic in modern physics, including Quantum Mechanics and Optics. There are options to specialise in photonics related topics through optional modules the the final year research project.

**Contact:** +44(0)1482465231 – [admissions-physics@hull.ac.uk](mailto:admissions-physics@hull.ac.uk)

<http://www2.hull.ac.uk/ug/courses/physics-mphys.aspx>

## UK

### Physics

#### University of Kent

##### Canterbury, South East

This course offers Quantum Physics, Optics, Light Relativity Optics and Modern Optics.

**Contact:** +44 (0)1392 725349 – [phas-ugadmissions@glasgow.ac.uk](mailto:phas-ugadmissions@glasgow.ac.uk)

<http://www.gla.ac.uk/undergraduate/degrees/Physics/#/programmestructure>

### Physics

#### University of Leeds

##### Leeds, North East

In the first few years of this integrated Mphys degree, you will follow the Bsc course, studying Quantum Physics, Waves, Optics. Later in the degree, you may study modules and projects linked closely to current research, including Quantum Optics & Photonics.

**Contact:** +44 (0)113 343 3881 – [physics.admissions@leeds.ac.uk](mailto:physics.admissions@leeds.ac.uk)

<http://www.physics.leeds.ac.uk/undergraduate/degree-courses/mphys-bsc-physics.html>

### Physics

#### King's College London

##### London, Greater London

King's college offers courses in Spectroscopy, Quantum Mechanics and Optics in the first 3 years. In the fourth year, there is the option to study Photon Physics and Advanced Quantum mechanics, along with a research project.

**Contact:** 020 7848 7517 – [nms-ugadmissions@kcl.ac.uk](mailto:nms-ugadmissions@kcl.ac.uk)

[https://www.kcl.ac.uk/prospectus/undergraduate/index/name/physics-msci/alpha/PQR/header\\_search//from/searchall/keyword/physics](https://www.kcl.ac.uk/prospectus/undergraduate/index/name/physics-msci/alpha/PQR/header_search//from/searchall/keyword/physics)

### Mathematics and Physics

#### King's College London

##### London, Greater London

Similar to the BSc and Msci Physics programmes, this course gives you the opportunity to study Quantum mechanics, Optics and Spectroscopy. In the fourth year, there are modules on advanced Quantum Mechanics and Photonics, along with the research project.

**Contact:** 020 7848 7517 – [nms-ugadmissions@kcl.ac.uk](mailto:nms-ugadmissions@kcl.ac.uk)

[https://www.kcl.ac.uk/prospectus/undergraduate/index/name/mathematics-and-physics-msci/alpha/PQR/header\\_search//from/searchall/keyword/physics](https://www.kcl.ac.uk/prospectus/undergraduate/index/name/mathematics-and-physics-msci/alpha/PQR/header_search//from/searchall/keyword/physics)

## UK

### Applied Physics University of Central Lancashire

#### Preston, North West England

This Mphys programme is focussed on the applications of physics - there are modules on Waves, Quantum Mechanics, Experimental Physics and Lasers & Modern Optics. In addition, there is a research project and advanced laboratory work in the final year.

**Contact:** +44 (0)1772 892400 – [enquiries@uclan.ac.uk](mailto:enquiries@uclan.ac.uk)  
[http://www.uclan.ac.uk/courses/mphys\\_applied\\_physics.php](http://www.uclan.ac.uk/courses/mphys_applied_physics.php)

### Physics University of Central Lancashire

#### Preston, North West England

Quantum Mechanics and Optics are covered in the first 3 years. Lasers and modern Optics is an optional fourth year course. There is a compulsory research project in the fourth year, which could be centered on photonics.

**Contact:** +44 (0)131 451 3025 – [enquiries@uclan.ac.uk](mailto:enquiries@uclan.ac.uk)  
[http://www.uclan.ac.uk/courses/mphys\\_physics.php](http://www.uclan.ac.uk/courses/mphys_physics.php)

### Physics University of Leicester

#### Leicester, East Midlands

This 4 year Mphys programme covers Optics, Quantum Mechanics, Waves and Quanta and Light & Matter. There is a compulsory research project in the final year, for which you may choose a Photonics Related topic.

**Contact:** +44 (0)116 252 5281 – [seadmissions@le.ac.uk](mailto:seadmissions@le.ac.uk)  
[https://le.ac.uk/courses/physics-mphys?uol\\_r=0d9f63eb](https://le.ac.uk/courses/physics-mphys?uol_r=0d9f63eb)

### Physics with Nanotechnology University of Leicester

#### Leicester, East Midlands

This degree follows the same core modules as the regular MPhys degree. Topics that can be studied include Light and Matter, Waves and Quanta, Quantum Devices, Quantum Mechanics and additional modules relating to Nanotechnology. There is a compulsory research project in the final year.

**Contact:** +44 (0)116 252 5281 – [seadmissions@le.ac.uk](mailto:seadmissions@le.ac.uk)  
[https://le.ac.uk/courses/physics-with-nanotechnology-mphys?uol\\_r=0992f1d3](https://le.ac.uk/courses/physics-with-nanotechnology-mphys?uol_r=0992f1d3)

## UK

### Mathematics and Physics

#### University of Lincoln

##### Lincoln, East Midlands

This Mathematics and Physics MMath degree teaches modules such as Geometrical Optics, waves, Quantum Mechanics and Nano-Physics, along with mathematics modules. There is a compulsory research project in the final year.

**Contact:** +44 (0)1522 886644

<http://www.lincoln.ac.uk/home/course/mthphyum/>

### Physics

#### University of Lincoln

##### Lincoln, East Midlands

This MPhys Physics degree includes modules on Quantum physics, Geometrical Optics, Waves, Experimental Physics, Nano-Physics and a compulsory research project in the final year.

**Contact:** +44 (0)1522 886644

<http://www.lincoln.ac.uk/home/course/phyphyum/>

### Physics

#### Loughborough University

##### Loughborough, East Midlands

This MPhys Physics course includes modules on Modern Optics, Quantum Mechanics and Quantum Physics, with a final year research project.

**Contact:** +44 (0)1509 228409 – [physics.ug@lboro.ac.uk](mailto:physics.ug@lboro.ac.uk)

<http://www.lboro.ac.uk/study/undergraduate/courses/departments/physics/physics/>

### Physics

#### University of Manchester

##### Manchester, North West

This MPhys physics degree includes units on waves, Quantum mechanics and lasers, with a compulsory final year project.

**Contact:** +44 (0)161 306 3673 – [ug-physics@manchester.ac.uk](mailto:ug-physics@manchester.ac.uk)

<http://www.physics.manchester.ac.uk/study/undergraduate/undergraduate-courses/physics-mphys/>

### Physics

#### Newcastle University

##### Newcastle, North East

Optics and Quantum Mechanics are both compulsory courses whilst Photonics is an optional 4th year course in this 4 year MPhys degree.

**Contact:** +44 (0) 191 208 3333 – [uadmissions@uclan.ac.uk](mailto:uadmissions@uclan.ac.uk)

<http://www.ncl.ac.uk/undergraduate/degrees/f303/courseoverview/>

## UK

### Physics

#### *Northumbria University*

##### **Newcastle, North East**

Quantum Mechanics are studied in years 2 and 4 with optoelectronic devices being studied in year 4. Optical Communication is an another available year 4 course.

**Contact:** 0191 349 5600 – [course.enquiries@northumbria.ac.uk](mailto:course.enquiries@northumbria.ac.uk)

<https://www.northumbria.ac.uk/study-at-northumbria/courses/physics-mphys-ft-uusimy1/>

### Photonic and Optical Engineering

#### *University of Nottingham*

##### **Nottingham, Midlands**

This is a 1 year MSc degree with taught modules on Photonics and Optical Engineering, as well as a research project.

**Contact:** +44 (0) 115 951 5559 – [postgraduate-enquiries@nottingham.ac.uk](mailto:postgraduate-enquiries@nottingham.ac.uk)

<http://www.nottingham.ac.uk/pgstudy/courses/electrical-and-electronic-engineering/photonic-and-optical-engineering-msc.aspx>

### Physics with Nanoscience

#### *University of Nottingham*

##### **Nottingham, Midlands**

This is a specialised MPhys degree in Physics with Nanotechnology shares modules such as Quantum Mechanics, Atoms & Photons, Light & Matter and Coherent Phenomena with the MPhys Physics degree, with additional compulsory Nanotechnology modules and projects.

**Contact:** +44 (0)115 951 5165 – [julie.kenney@nottingham.ac.uk](mailto:julie.kenney@nottingham.ac.uk)

<http://www.nottingham.ac.uk/ugstudy/courses/physicsandastronomy/msci-physics-nanoscience.aspx>

### Physics

#### *Nottingham Trent University*

##### **Nottingham, Midlands**

Photonics modules in this 4 year MSci degree include medical imaging, Quantum Mechanics and Optics. There is a compulsory final year research project.

**Contact:** +44 (0)115 848 4200 – [applications@ntu.ac.uk](mailto:applications@ntu.ac.uk)

[http://www.ntu.ac.uk/apps/pss/course\\_finder/76094-1/9/msci\\_physics.aspx](http://www.ntu.ac.uk/apps/pss/course_finder/76094-1/9/msci_physics.aspx)



## UK

### Physics

#### *University of Oxford*

##### **Oxford, South East England**

This course contains modules on Optics, Quantum mechanics, Experimental Physics, Laser Science and Quantum Information Processing. There is a compulsory research project in the final year.

**Contact:** +44 (0) 1865 272200 – [enquiries@physics.ox.ac.uk](mailto:enquiries@physics.ox.ac.uk)

<http://www.ox.ac.uk/admissions/undergraduate/courses-listing/physics>

### Applied Physics

#### *University of Portsmouth*

##### **Portsmouth, South East England**

This course teaches Waves and Optics, Quantum Mechanics, Experimental Physics, Quantum Information. There is a compulsory final year research project.

**Contact:** +44 (0)23 9284 5550 – [science.admissions@port.ac.uk](mailto:science.admissions@port.ac.uk)

<http://www.port.ac.uk/courses/mathematics-and-physics/mphys-hons-applied-physics/>

### Physics, Astronomy and Cosmology.

#### *University of Portsmouth*

##### **Portsmouth, South East England**

Waves and Optics and Quantum Mechanics are modules that are taught as part of this MPhys degree, with a compulsory research project in the final year.

**Contact:** +44 (0)23 9284 5550 – [science.admissions@port.ac.uk](mailto:science.admissions@port.ac.uk)

<http://www.port.ac.uk/courses/mathematics-and-physics/mphys-hons-physics-astronomy-and-cosmology/>

### Physics

#### *Queen Mary University of London*

##### **London, Greater London**

You may Study Optics, Quantum Physics, Quantum Mechanics and Photon Physics in this 4 year MSci course. There is a compulsory research project in the final year.

**Contact:** +44 (0)20 7882 6958 – [physics@qmul.ac.uk](mailto:physics@qmul.ac.uk)

<http://www.qmul.ac.uk/undergraduate/coursefinder/courses/79936.html>

### Physics

#### *Queen's University Belfast*

##### **Belfast, Northern Ireland**

Optics and Lasers, Quantum Mechanics and Optoelectronics are covered by this course, with specialist modules in year 4 such as Atomic, Molecular & Optical Physics and Laser & Plasma Physics and a research project.

**Contact:** +44 (0) 28 9097 6005 – [mp@qub.ac.uk](mailto:mp@qub.ac.uk)

<http://www.qub.ac.uk/home/StudyatQueens/CourseFinder/UG/Physics/F303/>

## UK

### Experimental Physics

#### *Royal Holloway, University of London*

##### **Egham, South East**

This masters course in Experimental Physics covers all of the core skills and concepts of a Physics degree in the first two years but provide an additional focus on the experimental techniques and methods. The fourth year has options including Quantum Computation, Nanoscale Physics and others.

**Contact:** Gill Green – +44 (0) 1784 443506 – [Gill.Green@rhul.ac.uk](mailto:Gill.Green@rhul.ac.uk)

<https://www.royalholloway.ac.uk/physics/coursefinder/msciexperimentalphysics.aspx>

### Physics

#### *Royal Holloway, University of London*

##### **Egham, South East**

In this MSci degree, you will have the opportunity to learn about Quantum Mechanics, Optics, Experimental Physics, Waves, Photonics, Photon physics, Advanced Photonics and Quantum Computing. You will undertake a 6 month major project in the final year.

**Contact:** Gill Green – +44 (0) 1784 443506 – [Gill.Green@rhul.ac.uk](mailto:Gill.Green@rhul.ac.uk)

<https://www.royalholloway.ac.uk/physics/coursefinder/mscipphysics.aspx>

### Physics

#### *University of Salford*

##### **Manchester, North West**

Photonics related modules that may be studied as part of this MPhys degree are Optoelectronics, Optics and Quantum Mechanics, with a research project in the final year.

**Contact:** 0161 295 3306 – [ug-admissions@salford.ac.uk](mailto:ug-admissions@salford.ac.uk)

<http://www.salford.ac.uk/ug-courses/physics>

### Semiconductor Photonics and Electronics

#### *University of Sheffield*

##### **Sheffield, UK**

This is a 1 year postgraduate MSc course which focuses on Semiconductor Materials, Semiconductor Device Technology, Microsystems, Nanoscale Devices, Optical Communication and Semiconductor Manufacturing. There is also a major research project.

**Contact:** +44 (0)114 222 5442 – [n.porter@sheffield.ac.uk](mailto:n.porter@sheffield.ac.uk)

<http://www.sheffield.ac.uk/postgraduate/taught/courses/engineering/electronic/semiconductor>

## UK

### Physics

#### University of Sheffield

##### Sheffield, UK

This 4 year integrated Masters course includes modules on Qaves, Optics, Quantum Mechanics, Atomic & Laser physics and the Optical Properties of Solids. There is a compulsory research project in the fourth year.

**Contact:** 0114 222 4362 – [physics.ucas@sheffield.ac.uk](mailto:physics.ucas@sheffield.ac.uk)

<http://www.sheffield.ac.uk/physics/undergraduate-admissions/courses/physics>

### Physics with Photonics

#### University of Southampton

##### Southampton, South East

This is one of the only dedicated integrated Photonics masters degrees in the UK. Students will cover the same core as a physics degree, but will specialise in experimental and practical photonics, light and matter, lasers and a huge range of very specialised modules and project in the fourth year.

**Contact:** +44 (0)23 8059 2969 – [fpse-ugapply@soton.ac.uk](mailto:fpse-ugapply@soton.ac.uk)

<http://www.phys.soton.ac.uk/programmes/f369-mphys-physics-photonics-4-yrs>

### Experimental Physics Final Year Research

#### University of Southampton

##### Southampton, South East

This degree follows the same core modules as a regular physics degree, but gives the opportunity for students to spend their final year entirely on a research project. There are options all through the degree to take both generalized and specialized photonics modules.

**Contact:** +44 (0)23 8059 2969 – [fpse-ugapply@soton.ac.uk](mailto:fpse-ugapply@soton.ac.uk)

<http://www.phys.soton.ac.uk/programmes/f303-mphys-physics-year-experimental-research-4-yrs>

### Physics with Nanotechnology

#### University of Southampton

##### Southampton, South East

This degree follows the same core modules as a regular physics degree, but requires that students take a set list of nanotechnology modules. These include some photonics modules, and there is the option to take more.

**Contact:** +44 (0)23 8059 2969 – [fpse-ugapply@soton.ac.uk](mailto:fpse-ugapply@soton.ac.uk)

<http://www.phys.soton.ac.uk/programmes/f390-mphys-physics-nanotechnology>

## UK

### Photonics, Optoelectronics, Lasers and Fibre Optics *University of St Andrews*

#### **Fife, Scotland**

This 1 year course provides postgraduate vocational training in lasers, modern optics and semiconductors, tailored to the needs of the optoelectronics, lasers, photonics, and optical communications industry. There is a 3.5 month research project which is usually in industry.

**Contact:** 01334 463103 – [physics@st-and.ac.uk](mailto:physics@st-and.ac.uk)

[https://www.st-andrews.ac.uk/physics/prosp\\_pg/opto\\_msc/newmsc.php](https://www.st-andrews.ac.uk/physics/prosp_pg/opto_msc/newmsc.php)

### Optical Technologies *University of Strathclyde*

#### **Glasgow, UK**

This 1 year postgraduate masters degree teaches topics such as Lasers, Nonlinear Optics, Optics, Ultrafast Physics & Plasmas, Photonics Materials and more. There is a research project that runs throughout the year.

**Contact:** +44 (0) 1415483362 – [pgt@phys.strath.ac.uk](mailto:pgt@phys.strath.ac.uk)

<https://www.strath.ac.uk/courses/postgraduatetaught/opticaltechnologies/>

### Physics *University of Surrey*

#### **Guildford, South East**

This is a 4 year integrated masters degree, which covers general physics topics in addition to Quantum Mechanics, Optics, Nonlinear Physics, Lasers and Advances in Photonics. There is the option to do a year in professional placement. There is a research project in the final year.

**Contact:** Dr Annika Lohstroh – +44 (0)1483 681 681 – [admissions@surrey.ac.uk](mailto:admissions@surrey.ac.uk)

<http://www.surrey.ac.uk/undergraduate/physics>

### Physics with Quantum Technology *University of Surrey*

#### **Guildford, South East**

This course covers Waves, Quantum Mechanics, Light, Lasers and Nanophotonics. There is a placement in industry or academia and a research project in year 3 or 4.

**Contact:** +44 (0)1483 681 681 – [admissions@surrey.ac.uk](mailto:admissions@surrey.ac.uk)

<http://www.surrey.ac.uk/undergraduate/physics-quantum-technologies>

UK

**Frontiers of Quantum Technology**  
**University of Sussex**

**Brighton, South East**

This 1 year MSc degree studies Quantum Phenomena; quantum teleportation, quantum cryptography, and quantum computing. There is a research project which makes up 50% of this course, with lectures making up the other half.

**Contact:** Student Recruitment Services – +44 (0)1273 678557

[msc@physics.sussex.ac.uk](mailto:msc@physics.sussex.ac.uk)

[www.sussex.ac.uk/study/pg/2016/taught/1670/33383#subject](http://www.sussex.ac.uk/study/pg/2016/taught/1670/33383#subject)

**Physics**  
**University of Sussex**

**Brighton, South East**

This is a 1 year postgraduate MSc degree with taught courses on Quantum Circuits, Quantum Technology, Fibre-Optics, Quantum Mechanics, Lasers and more. There is a research project which composes the other half of this degree.

**Contact:** Student Recruitment Services – +44 (0)1273 678557

[msc@physics.sussex.ac.uk](mailto:msc@physics.sussex.ac.uk)

[www.sussex.ac.uk/study/pg/2016/taught/1670/33383#subject](http://www.sussex.ac.uk/study/pg/2016/taught/1670/33383#subject)

**Physics (research placement)**  
**University of Sussex**

**Brighton, South East**

This is a 4 year integrated Mphys degree, which is composed of a normal physics degree, in which you will learn topics such as Quantum Mechanics, Optics, Lasers and Nanotechnology, with the addition of a year in one of the Atomic, Molecular and Optical Physics research groups.

**Contact:** +44 (0)1273 678557 – [ug.admissions@physics.sussex.ac.uk](mailto:ug.admissions@physics.sussex.ac.uk)

<http://www.sussex.ac.uk/physics/ugstudy/researchplacement>

**Physics**  
**Swansea University**

**Swansea, Wales**

This is a 4 year integrated Mphys degree, which will teach Waves and Optics, Experimental Physics, Quantum Mechanics, Quantum Optics and lasers.

**Contact:** 01792 295720 – [physics-admissions@swansea.ac.uk](mailto:physics-admissions@swansea.ac.uk)

<http://www.swansea.ac.uk/undergraduate/courses/science/physics/mphys-physics-f303/>

UK

**Physics with a Year Abroad**  
**Swansea University**

**Swansea, Wales**

This is a 4 year integrated Mphys degree, which will teach Waves and Optics, Experimental Physics, Quantum Mechanics, Quantum Optics and lasers. This includes a year studying abroad.

**Contact:** 01792 295720 – [physics-admissions@swansea.ac.uk](mailto:physics-admissions@swansea.ac.uk)

<http://www.swansea.ac.uk/undergraduate/courses/science/physics/mphys-physics-with-a-year-abroad-f304/>

**Physics**  
**University of Warwick**

**Warwick, Midlands**

This 4 year integrated Mphys course teaches topics such as Quantum Mechanics, Experimental physics and Optics. There is a research project in the final year.

**Contact:** +44 (0)24 7652 3723 – [ugadmissions@warwick.ac.uk](mailto:ugadmissions@warwick.ac.uk)

<http://www2.warwick.ac.uk/study/undergraduate/courses/f303/>

**Physics**  
**University of York**

**York, North East**

This is a 4 year integrated Mphys degree, with modules on Waves, Optics, Quantum Physics, Applications of Optics and Lasers, with a research project in the final year. There is an option to study abroad or to spend a year in industry.

**Contact:** +44 (0)1904 322241 – [physics-admissions@york.ac.uk](mailto:physics-admissions@york.ac.uk)

<https://www.york.ac.uk/physics/undergraduate/degree-courses/mphys-physics/>



DOCTORALS

**GERMANY**



## GERMANY

### Abbe School of Photonics Doctoral Program Universität Jena

#### Jena, Thuringia

A broad academic education at the highest international level within a modern research environment provides a profound up-to-date knowledge in a variety of fields - from fundamental sciences and laser physics to material sciences and life sciences.

**Contact:** Dr. Dorit Schmidt – 0049 (0) 3641 947961 – [dorit.schmidt@uni-jena.de](mailto:dorit.schmidt@uni-jena.de)  
<http://www.asp.uni-jena.de/doctoral.html>

### International Max-Planck Research School on Gravitational Wave Astronomy Universität Hanover

#### Hanover, Lower-Saxony

International Max Planck Research School on Gravitational Wave Astronomy is a collaboration between the Max Planck Institute for Gravitational Physics (Albert Einstein Institute) at Potsdam and Hannover (Germany), the Leibniz Universität of Hannover and the Laser Zentrum Hannover.

**Contact:** [karsten.danzman@naei.mpg.de](mailto:karsten.danzman@naei.mpg.de)  
[http://imprs-gw.aei.mpg.de/about-us/01\\_about-the-school](http://imprs-gw.aei.mpg.de/about-us/01_about-the-school)

### Quantum mechanical noise in complex systems Universität Hanover

#### Hanover, Lower-Saxony

The research training group explores in an interdisciplinary collaboration the intrinsic quantum mechanical noise in fundamental physical systems, thereby combining the research areas and the scientific young researcher training of the three central sections of the physics department in Hannover.

**Contact:** Prof. Dr. Michael Oestreich – +49 511 762 3493  
[oest@nano.uni-hannover.de](mailto:oest@nano.uni-hannover.de) – <http://www.rtg1991.uni-hannover.de/rtg1991.html>

### Integriertes Graduiertenkolleg PlanOS des SFB/TRR 123 Universität Hanover

#### Hanover, Lower-Saxony

Integriertes Graduiertenkolleg PlanOS des SFB/TRR 123

**Contact:** Dr. Sebastian Dikty – +49 511 762 18232  
[sebastian.dikty@ita.uni-hannover.de](mailto:sebastian.dikty@ita.uni-hannover.de) – <http://www.planos.uni-hannover.de/institut.html>

## GERMANY

### Contacts in Nanosystems Universität Hanover

#### Hanover, Lower-Saxony

The PhD programme Contacts in Nanosystems brings together the different, but complementary expertises of physicists and engineers at the three universities in Braunschweig, Clausthal-Zellerfeld and Hannover joining with PTB Braunschweig to achieve a better understanding and control of contact effects in nanostructures. Contacts in Nanosystems is funded within the Lower Saxony PhD-programme.

**Contact:** Prof. Dr. Rolf Haug  
<http://www.nth-nano.de/nth.html>

### Max Planck Research School for Solar System Science Universität Göttingen

#### Göttingen, Lower-Saxony

The Solar System School recruits and supports excellent junior researchers, offering them training towards a PhD degree in physics at an international graduate school in a vibrant research environment.

**Contact:** Dr. Sonja Schuh – 49 551 384 979-419  
<http://www.mps.mpg.de/solarsystemschooll>

### Physics of Biological and Complex Systems Universität Göttingen

#### Göttingen, Lower-Saxony

The GGNB doctoral program / International Max Planck Research School «Physics of Biological and Complex Systems» is a member of the Göttingen Graduate School for Neurosciences, Biophysics, and Molecular Biosciences (GGNB). It is conducted jointly by the University of Göttingen, the Max Planck Institute for Biophysical Chemistry, and the Max Planck Institute for Dynamics and Self-Organization.

**Contact:** Prof. Dr. Jörg Enderlein – 49-(0)551-39 13833 – [joerg.enderlein@physik3.gwdg.de](mailto:joerg.enderlein@physik3.gwdg.de) – <http://www.uni-goettingen.de/de/%C3%9Cber-uns/58765.html>

### Contacts in Nanosystems NTH Nano

#### Brunswick, Lower-Saxony

The PhD programme Contacts in Nanosystems brings together the different, but complementary expertises of physicists and engineers.

**Contact:** <http://www.nth-nano.de/nth.html>

## GERMANY

### **Science and Technology** **Universität Oldenburg**

#### **Oldenburg, Lower-Saxony**

The PhD students learn about the relevant models and hypotheses in their field of science and can practise discussing them.

**Contact:** <http://www.uni-oldenburg.de/en/oltech/>

**GREECE**

## GREECE

### **PhD in Physics (spec. Photonics)**

***Aristotle University of Thessaloniki, Department of Physics***

#### **Thessaloniki**

Doctoral degrees are offered in a wide range of photonic application

**Contact:** +30 2310 998140 – [info@physics.auth.gr](mailto:info@physics.auth.gr)

<http://www.physics.auth.gr/>

### **PhD in Informatics (spec. Photonics)**

***Aristotle University of Thessaloniki, School of Informatics***

#### **Thessaloniki**

Research on the the utilization of photonics in all aspects of optical communications and networking aiming at the development of high throughput, high-rate and low energy communication environments

**Contact:** +30 2310 998930 – [pms\\_info@csd.auth.gr](mailto:pms_info@csd.auth.gr)

<http://www.csd.auth.gr/en/studies/postgraduate>

### **PhD in Informatics & Telematics (spec. Photonics)**

***Harokopio University, Department of Informatics & Telematics***

#### **Athens**

Photonics in Informatics and Telematics applications

**Contact:** +30 210 9549 400 – [itpsec@hua.gr](mailto:itpsec@hua.gr)

<http://www.dit.hua.gr/index.php/en/postgraduate-studies/PhD-regulation>

### **PhD in Informatics and Telecommunications (spec. Photonics)**

***National and Kapodistrian University of Athens, Department of Informatics and Telecommunications***

#### **Athens**

Photonics in Informatics and Telecommunications applications

**Contact:** +30 210 7275181 – [vpothitou@di.uoa.gr](mailto:vpothitou@di.uoa.gr)

[http://www.di.uoa.gr/eng/postgraduate/post\\_program/future\\_students](http://www.di.uoa.gr/eng/postgraduate/post_program/future_students)

## GREECE

### PhD in Physics (spec. Photonics)

*National and Kapodistrian University of Athens, Department of Physics*

#### Athens

Doctoral degrees are offered in a wide range of photonic application

**Contact:** [secr@phys.uoa.gr](mailto:secr@phys.uoa.gr)

<http://en.phys.uoa.gr/graduate-studies.html>

### PhD in Applied Mathematical and Physical Sciences (spec. Photonics)

*National Technical University of Athens, Faculty of Applied Mathematical and Physical Sciences*

#### Athens

Doctoral degrees are offered in a wide range of laser related photonic application

**Contact:** +30 210 7722023 – [semfe@central.ntua.gr](mailto:semfe@central.ntua.gr)

<http://semfe.ntua.gr/el/>

### PhD in Biomedical Engineering

*National Technical University of Athens, School of Electrical and Computer Engineering*

#### Athens

Research on Biomedical Simulations and Imaging

**Contact:** +30 210 7724307

<http://biosim.ntua.gr/courses?q=course/Medical%20Imaging>

### PhD in Electrical and Computer Engineering (spec. Photonics)

*National Technical University of Athens, School of Electrical and Computer Engineering*

#### Athens

Doctoral degrees in photonics communications

**Contact:** +30 210 7724307

<http://www.ece.ntua.gr/index.php/en/education>

## GREECE

### **PhD in Materials Science and Technology (spec. Photonics)** **University of Crete, Department of Materials Science and Technology**

#### **Heraklion**

Materials studies with an emphasis on the correlations between the structure and the properties, processing and performance of the material. It involves the design, synthesis, characterization, control and modification of materials that meet requirements of the contemporary technical era.

**Contact:** +30 2810 394271 – [secretariat@materials.uoc.gr](mailto:secretariat@materials.uoc.gr)  
<https://www.materials.uoc.gr/en/main.html>

### **PhD in Physics (spec. Photonics)** **University of Crete, Department of Physics**

#### **Heraklion**

Doctoral degrees are offered in a wide range of photonic application

**Contact:** +30 2810 394004 – [pgrad@physics.uoc.gr](mailto:pgrad@physics.uoc.gr)  
<http://www.physics.uoc.gr/en/content/graduatestudies>

### **PhD in Physics (spec. Photonics)** **University of Ioannina, Department of Physics**

#### **Ioannina**

Doctoral degrees are offered in a wide range of photonic application

**Contact:** +30 2610 996077  
<http://www.physics.uoi.gr/en/node/10>

### **PhD in Materials Science (spec. Photonics)** **University of Patras, Department of Material Science**

#### **Patras**

PhD programme that offers research training and advanced education in forefront research areas of Materials Science.

**Contact:** +30 2610 969922 – [mscisecr@matersci.upatras.gr](mailto:mscisecr@matersci.upatras.gr)  
<http://www.matersci.upatras.gr/en/>

## GREECE

### **PhD in Physics (spec. Photonics)** ***University of Patras, Department of Physics***

#### **Patras**

Doctoral degrees are offered in a wide range of photonic application

**Contact:** +30 2810 394271 – [skouradaki@materials.uoc.gr](mailto:skouradaki@materials.uoc.gr)

<http://www.physics.upatras.gr/index.php?page=default>

### **PhD in Electronic and Computer Engineering (spec. Photonics)** ***Technical University of Crete, School of Electronic and Computer Engineering***

#### **Chania**

Doctoral degrees in Optoelectronic Biomedical Technology

**Contact:** +30 28210 37358 – [secretary@ece.tuc.gr](mailto:secretary@ece.tuc.gr)

<http://www.ece.tuc.gr/4481.html>



**IRELAND**

## IRELAND

### Photonic Integration & Advanced Data Storage - Research Queens University Belfast

#### Antrim

Ultra-reliable semiconductor lasers operating in hostile environments, Low cost planar lightwave circuit platforms, suitable for volume manufacture, Novel nanoplasmonic devices capable of operating in extreme environments, Advanced materials for magnetic recording, Atomic scale analysis techniques.

**Contact:** Professor Robert Bowman – 9097 6005 – [b.morris@qub.ac.uk](mailto:b.morris@qub.ac.uk)  
<http://postgradireland.com/course/15282>

### Theoretical Atomic Molecular & Optical Physics - Research Queens University Belfast

#### Antrim

Strong field laser interactions with atoms and molecules, especially attosecond and free-electron-laser sources, Quantum information processing, quantum optics, and quantum thermodynamics, Antimatter interactions with atoms and molecules, especially the role of vibrational Feshbach resonances, Electron scattering by very complex targets such as the iron peak elements, of considerable importance in astrophysics and by Rydberg atoms, Quantum many-body physics, ultracold atomic systems and simulation of their features, Foundations of quantum mechanics

**Contact:** Professor Mauro Paternostro – 9097 1907 – [applied.maths@qub.ac.uk](mailto:applied.maths@qub.ac.uk)  
<http://www.qub.ac.uk/home/StudyatQueens/CourseFinder/PCF1617/PRCF1617/Course/TheoreticalAtomicMolecularandOpticalPhysics.html>

### Photonics - Research Cork Institute of Technology

#### Cork

Photonics research includes the CAPP Research Centre which focuses on generating and harnessing light, impacting a wide range of areas, such as telecommunications, gas sensing, food and medical imaging. CAPP works closely with industry. The Astronomy and Instrumentation Group (AIG) develops and uses instruments for astronomy, some of which have been used for other applications such as trace contaminant detection and air quality monitoring.

**Contact:** Dr. Guillaume Huyet – 353-21-4335595 – [guillaume.huyet@cit.ie](mailto:guillaume.huyet@cit.ie)  
<http://postgradireland.com/course/15887>

## IRELAND

### Experimental Physics - Research NUI Galway

#### Galway

The NCLA research group has a broad portfolio of fundamental and applied research on laser material interactions and works closely with industry in technology transfer and training. The

Applied Optics group focuses on the development and application of adaptive optics and optical design.. Imaging and applied optics are enabling technologies that underpin many key developments in biotechnology, healthcare, and communication, as well as a wide variety of consumer products. The NCLA and Applied Optics groups have joined forces to form the Centre for Applied Photonics, LightHOUSE.

**Contact:** Dr. Gerard O'Connor – 353 91 492 51 – [gerard.oconnor@nuigalway.ie](mailto:gerard.oconnor@nuigalway.ie)  
<http://www.nuigalway.ie/courses/research-postgraduate-programmes/physics.html>

### Physics - Structured NUI Galway

#### Galway

The NCLA research group has a broad portfolio of fundamental and applied research on laser material interactions and works closely with industry in technology transfer and training. The Applied Optics group focuses on the development and application of adaptive optics and optical design.. Imaging and applied optics are enabling technologies that underpin many key developments in biotechnology, healthcare, and communication, as well as a wide variety of consumer products. The NCLA and Applied Optics groups have joined forces to form the Centre for Applied Photonics, LightHOUSE.

**Contact:** Dr. Gerard O'Connor – 354 91 492 51 – [gerard.oconnor@nuigalway.ie](mailto:gerard.oconnor@nuigalway.ie)  
<http://www.nuigalway.ie/courses/research-postgraduate-programmes/structured-phd/physics.html>

### Physics - Research Trinity College Dublin

#### Dublin

The main research areas are Nanotechnology, Scientific Computing and Photonics with activities ranging from spin-electronics, to carbon nanotubes and semiconductor lasers. There are also research groups working on soft-condensed matter and astrophysics with a new section on bio-nano Physics

**Contact:** Professor James Lunney – 353-1-896 1675 – [physics@tcd.ie](mailto:physics@tcd.ie)  
<http://www.tcd.ie/courses/postgraduate/research/schools/physics.php>

## IRELAND

### Physics - Research University College Dublin

#### Dublin

Advanced optical imaging and biophysical applications

**Contact:** Brian Vohnsen – (0)1 716 2361 – [brian.vohnsen@ucd.ie](mailto:brian.vohnsen@ucd.ie)

<http://www.ucd.ie/physics/staff/opportunities/#d.en.55543>

### Physical Sciences - Research Dublin City University

#### Dublin

Research Based in the following groups: Astrophysics Group, Centre for Laser Plasma Research (CLPR), Microsystems Group, Optical Sensors Laboratory (OSL), Plasma Research Laboratory (PRL), Semiconductor Spectroscopy Laboratory (SSL), Surfaces and Interfaces Research Laboratory (SIRL)

**Contact:** Ms Lisa Peyton – 354 1 7005306 – [lisa.peyton@dcu.ie](mailto:lisa.peyton@dcu.ie)

<http://www4.dcu.ie/physics/physics-research-activities.shtml>

### Physics - Experimental - Research NUI Maynooth

#### Kildare

Research specialisms include terahertz space optics, cosmic microwave background astronomy, cluster physics, upper atmospheric physics, submillimetre astronomy, experimental fluid dynamics.

**Contact:** Dr Michael F Cawley – 353 1 708 3641 – [physics.department@nuim.ie](mailto:physics.department@nuim.ie)

<https://www.maynoothuniversity.ie/experimental-physics/our-courses/msc-experimental-physics>

**NETHERLANDS**

## NETHERLANDS

### FOM Institute for Atomic and Molecular Physics

#### Amsterdam, North Holland

«Quality, ambition, and multidisciplinary inspiration» are AMOLF's guiding principles in carrying out its mission. Nanophotonics will lead to new ways to generate, guide, direct, focus, concentrate and slow down light, to control light at the quantum level and to explore the magnetic component of light.

**Contact:** 00 31 (0)20 754 7100 – [info@amolf.nl](mailto:info@amolf.nl)

<http://www.amolf.nl/jobs-internships/>

### Advanced Research Center for Nanolithography

#### Amsterdam, North Holland

The Advanced Research Center for Nanolithography (ARCNL) focuses on the fundamental physics involved in current and future key technologies in nanolithography, primarily for the semiconductor industry. A significant part of the initial program is devoted to the physics that is central in the generation of high intensities of extreme ultraviolet light and its use in nanolithography.

**Contact:** 00 31 (0)20 851 7100 – [info@arcnl.nl](mailto:info@arcnl.nl)

<http://www.arcnl.nl/jobs-internships/>

**SLOVAKIA**

## SLOVAKIA

### Electronics and Photonics

#### Bratislava, Western Slovakia

Silicon photonics, photonic sensor systems, lasers and laser systems applications.

**Contact:** Prof. Frantisek Uherek – 421905630144 – [frantisek.uherek@stuba.sk](mailto:frantisek.uherek@stuba.sk)  
[www.stuba.sk](http://www.stuba.sk)

### Electro-energetics

#### Bratislava, Western Slovakia

Electrical engineering, generation of electricity, applied electrotechnics including lightning technology.

**Contact:** Prof. Ing. František Janiček, PhD. – +421-2-602 91 298 – [frantisek.janicek@stuba.sk](mailto:frantisek.janicek@stuba.sk)  
[www.stuba.sk/](http://www.stuba.sk/)

### Applied analytical and bioanalytical chemistry

#### Trnava, Western Slovakia

Use of optical methods in analyses of organic and anorganic chemistry with wide spectrum of applications.

**Contact:** 00421 33 / 55 65 321, 323 – [dekan.fpv@ucm.sk](mailto:dekan.fpv@ucm.sk)  
<http://fpv.ucm.sk/sk/>

### Electrotechnologies and materials

#### Zilina, Northern Slovakia

Light-based technologies and advanced spectroscopical methods in research and development of new sensors, biosensors and materials.

**Contact:** [sekrdek@fel.uniza.sk](mailto:sekrdek@fel.uniza.sk)  
<http://fel.uniza.sk/>

### Biochemistry

#### Kosice, Eastern Slovakia

Using of spectroscopical and optical methods in chemistry of metabolites.

**Contact:** 00421 55 62 221 24 – [pfsekret@upjs.sk](mailto:pfsekret@upjs.sk)  
<http://www.upjs.sk/prirodovedecka-fakulta/>



## SLOVAKIA

### Analytická chémia

#### Kosice, Eastern Slovakia

Using of spectroscopical and optical methods in analyses of different substances.

**Contact:** 00421 55 62 221 24 – [pfsekret@upjs.sk](mailto:pfsekret@upjs.sk)

<http://www.upjs.sk/prirodovedecka-fakulta/>

### Organic chemistry

#### Kosice, Eastern Slovakia

Using of spectroscopical and optical methods to study organic molecules.

**Contact:** 00421 55 62 221 24 – [pfsekret@upjs.sk](mailto:pfsekret@upjs.sk)

<http://www.upjs.sk/prirodovedecka-fakulta/>

### Anorganic chemistry

#### Kosice, Eastern Slovakia

Using of spectroscopical and optical methods in anorganic chemistry.

**Contact:** 00421 55 62 221 24 – [pfsekret@upjs.sk](mailto:pfsekret@upjs.sk)

<http://www.upjs.sk/prirodovedecka-fakulta/>

### Progressive materials

#### Kosice, Eastern Slovakia

Use of spectroscopical methods in research and development of new materials.

**Contact:** 00421 55 62 221 24 – [pfsekret@upjs.sk](mailto:pfsekret@upjs.sk)

<http://www.upjs.sk/prirodovedecka-fakulta/>

### Biophysics

#### Kosice, Eastern Slovakia

Advanced spectroscopical methods in many areas from research to therapy.

**Contact:** Prof. RNDr. Pavol Miškovský, CSc. – 00421 55 2342206

[pavol.miskovsky@upjs.sk](mailto:pavol.miskovsky@upjs.sk) – [www.biophysics.sk](http://www.biophysics.sk)

### Biophysics

#### Bratislava, Western Slovakia

Advanced spectroscopical methods in many areas from research to therapy.

**Contact:** Ing. Iveta Gašparová – 00421 (0)2 602 95 – [so\(at\)fmph.uniba.sk](mailto:so(at)fmph.uniba.sk)

[www.fmph.uniba.sk](http://www.fmph.uniba.sk)

## SLOVAKIA

### Chemická fyzika

#### Bratislava, Western Slovakia

Optics and spectroscopy in the study of different physico-chemical systems.

**Contact:** Ing. Iveta Gašparová – 00421 (0)2 602 95 – [so\(at\)fmph.uniba.sk](mailto:so(at)fmph.uniba.sk)  
[www.fmph.uniba.sk](http://www.fmph.uniba.sk)

### Plasma physics

#### Bratislava, Western Slovakia

Spectroscopy of plasma discharges phenomena in the study of surfaces and biomedical research.

**Contact:** Ing. Iveta Gašparová – 00421 (0)2 602 95 – [so\(at\)fmph.uniba.sk](mailto:so(at)fmph.uniba.sk)  
[www.fmph.uniba.sk](http://www.fmph.uniba.sk)

### Quantum electronics, optics and spectroscopy

#### Bratislava, Western Slovakia

Research and development of optics for biomedical and industrial purposes.

**Contact:** Ing. Iveta Gašparová – 00421 (0)2 602 95 – [so\(at\)fmph.uniba.sk](mailto:so(at)fmph.uniba.sk)  
[www.fmph.uniba.sk](http://www.fmph.uniba.sk)

### Chemical physics

#### Bratislava, Western Slovakia

Using of spectroscopical and optical methods in chemistry with precise understanding of physical principles.

**Contact:** 00421(02)602-96-11 – [so@fns.uniba.sk](mailto:so@fns.uniba.sk)  
[www.fns.uniba.sk](http://www.fns.uniba.sk)

### Organic chemistry

#### Bratislava, Western Slovakia

Using of spectroscopical and optical methods to study organic molecules.

**Contact:** 00421(02)602-96-11 – [so@fns.uniba.sk](mailto:so@fns.uniba.sk)  
[www.fns.uniba.sk](http://www.fns.uniba.sk)

## SLOVAKIA

### Anorganic chemistry

#### Bratislava, Western Slovakia

Using of spectroscopical and optical methods in anorganic chemistry.

**Contact:** 00421(02)602-96-11 – [so@fns.uniba.sk](mailto:so@fns.uniba.sk)

[www.fns.uniba.sk](http://www.fns.uniba.sk)

### Analytical chemistry

#### Bratislava, Western Slovakia

Using of spectroscopical and optical methods in analyses of differenst substances.

**Contact:** 00421(02)602-96-11 – [so@fns.uniba.sk](mailto:so@fns.uniba.sk)

[www.fns.uniba.sk](http://www.fns.uniba.sk)

### Biochemistry

#### Bratislava, Western Slovakia

Using of spectroscopical and optical methods in chemistry of metabolites.

**Contact:** 00421(02)602-96-11 – [so@fns.uniba.sk](mailto:so@fns.uniba.sk)

[www.fns.uniba.sk](http://www.fns.uniba.sk)

**SPAIN**

## SPAIN

### Doctoral Programme in Optometry and Vision Sciences

#### Valencia

This doctoral programme provides formation for professional activity, basic research and clinical research and prepare teaching at different levels. It is related with a broad offer of research lines such as optometry, image capture and display techniques, physiological optics and many more.

**Contact:** *Alejandro Cervio Expósito (+34)963544852 [alejandro.cervino@uv.es](mailto:alejandro.cervino@uv.es)  
[www.uv.es](http://www.uv.es)*

### Doctoral Programme in Physics

#### Valencia

Doctoral programme focused on research and teaching in the fields of photonics, quantum optics, nonlinear optics and photonics, image creation and reconstruction and quantum chromodynamics.

**Contact:** *Nuria Rius Dionis (+34)963543516 [nuria@ific.uv.es](mailto:nuria@ific.uv.es)  
[www.uv.es](http://www.uv.es)*

### Doctoral Programme in Optical Engineering

#### Terrassa, Barcelona

Several departments and research groups have contributed to this high quality, multidisciplinary doctoral programme so that more aspects of optical engineering can be addressed.

**Contact:** *M. Montserrat Arjona Carbonell (+34)937398907 [m.montserrat.arjona@upc.edu](mailto:m.montserrat.arjona@upc.edu)  
[opticalengineering.phd.upc.edu/en](http://opticalengineering.phd.upc.edu/en)*

### Doctoral Programme in Photonics

#### Castelldefels, Barcelona

The program aims to produce some of the next generation frontier-expanders and decision-makers in area of Photonics, both in academia and in industry. As part of their training, PhD students will acquire transversal skills as well as a broad-based knowledge of the theory and practice underpinning their choice subtopic inside the Sciences of Light.

**Contact:** *David Artigas Garcia (+34)935534136 [david.artigas@icfo.es](mailto:david.artigas@icfo.es)  
[doctorat.upc.edu/ca/programes/fotonica](http://doctorat.upc.edu/ca/programes/fotonica)*

## SPAIN

### Erasmus Mundus Doctoral Program in Photonics Engineering, Nanophotonics and Biophotonics (Europhotonics)

#### Europe

The goal of the program is to involve doctorate students in cutting-edge research projects profiting from the complementarity between the five partners, and from a wide range of research, training and teaching opportunities that includes fundamental and general sciences, technology, languages and communication, research and industrial management, technology transfer, career exploratory support, international meetings, workshops and conference participation.

**Contact:** *David Artigas Garcia (+34)935534136 david.artigas@icfo.es  
www.europhotonics.org*

### Doctoral Programme in Biomedical Engineering

#### Barcelona

This doctoral programme is related with some photonics-related disciplines, the most relevant being instrumentation, sensing and computer vision.

**Contact:** *Raimon Jane Campos (+34)934017158 raimon.jane@upc.edu  
doctorat.upc.edu/en/programmes/biomedical-engineering*

### Doctoral Programme in Laser Applications in Chemistry

#### Leioa, Bizkaia

The research subjects are the molecular or microscopic properties of (bio)chemical and physical systems. The studies are carried out by experimental methods, using lasers and additional excitation sources employing state-of-the-art technologies, aided by quantum chemistry calculations.

**Contact:** *Francisco José Basterrechea Elguezabal (+34)946012532 franciscojose.basterretxea@ehu.es  
www.ehu.es/en/web/doctoradoquimilaser/aurkezpena*

### Doctoral Programme in Physics of Nanostructures and Advanced Materials

#### Donostia, San Sebastián

The topic of the program is interdisciplinary and is primarily related to Condensed Matter and Applied Physics as well as to Material Science, with emphasis on its relationship with Nanoscience. Some research lines are photonics, photovoltaics and microscopic and spectroscopic analysis of functional solid interfaces.

**Contact:** *Angel Maria Alegria Loinaz (+34)943018203 angel.alegria@ehu.es  
www.ehu.es/en/web/doctoradonanomat/aurkezpena*

## SPAIN

### Doctoral Programme in Engineering and Applied Sciences

#### Barcelona

This is an interdisciplinary doctoral programme comprising physics, chemistry and engineering as well as new technologies areas, including photovoltaics

**Contact:** *Angel Diéguez Barrientos (+34)934039149 angel.dieguez@ub.edu eca.el.ub.edu/index.php/en/*

### Doctoral Programme in Physics

#### Barcelona

As a branch of physics, this doctoral programme offers an specialization in applied physics and optics as well as sensing.

**Contact:** *Lluís Mañosa Carrera (+34)934039181 lluismanosa@ub.edu www.ub.edu/fisica/en/*

### Doctoral Programme in Nanosciences

#### Barcelona

Modeling and simulation of systems and properties of matter in nanoscale, nanobiotechnology, nanopharmacotherapy, nanomagnetism, nanoelectronics and nanophotonics, nanostructured materials, nanoenergy: production, storage and environment.

**Contact:** *Albert Cirera Hernández (+34)934039167 nanoscience@ub.edu www.ub.edu/in2ub/doctorat\_nanociencia*

### Doctoral Programme in Communication Technologies, Bioengineering and Renewable Energy

#### Pamplona

This programme has broad amount of photonics-related disciplines such as image processing and computer vision, optical communications, optoelectronics and integrated photonics.

**Contact:** *Carlos Del Río Bocio (+34)948169326 carlos@unavarra.es www.unavarra.es*

SPAIN

**Doctoral Programme in Laser, Photonics and Vision**

**Santiago de Compostela, Santiago**

Its study focuses on the development of technologies with high-interest applications in a wide and varied number of socio-economic and health areas, ranging from telecommunications, life sciences and health, the environment, the industrial metrology, leisure, etc., to the scientific-technical-techniques frontiers of nano optics, processing and quantum communications, optical metamaterials, etc.

**Contact:** *Jesús Liñares Beiras (+34)981563100 [suso.linares.beiras@usc.es](mailto:suso.linares.beiras@usc.es)  
[www.usc.es/doutoramentos/en/phds/science/laser-photonics-and-vision](http://www.usc.es/doutoramentos/en/phds/science/laser-photonics-and-vision)*



**SWEDEN**

## SWEDEN

Several courses each semester. Eg.:

- Spectroscopic ellipsometry
- Mueller matrix optics
- Optical Response of Materials
- Polarized Light
- Principles, Instrumentation, Measurements and Analysis with ellipsometry
- Reflection and Transmission Optics
- Photoelectron Spectroscopy and its applications
- Imaging and ubiquitous biosensing
- Introduction to cathodoluminescence spectroscopy

*Linköping University*

**Linköping**

**Contact:** <http://www.ifm.liu.se/edu/graduate/courses/>

**Physics of Biomedical Microscopy (SK3500)**

*Royal Institute of Technology*

**Stockholm**

Basic optical layout of the light microscope. Aberrations. Microscope objectives. Magnification. Numerical aperture. Microscope photometry. Detectors. Noise. Contrast methods (fluorescence, phase contrast, DIC). Resolution. Fourier methods. Optical transfer functions. Three-dimensional imaging in microscopy. Sampling and reconstruction of image data. Confocal microscopy. A brief introduction to tunnel and atomic force microscopy, electron microscopy, scanning near-field optical microscopy and X-ray microscopy.

**Contact:** Kjell S Carlsson – +46 8 553 781 32 – [kjellc@kth.se](mailto:kjellc@kth.se)

<http://www.kth.se/student/kurser/kurs/SK3500?l=en>

**Laser Physics (SK3400)**

*Royal Institute of Technology*

**Stockholm**

Essentials of quantum-mechanical description of the of the interaction between photons and electrons in optical gain media.

Basic properties of lasers and photon amplifiers.

Physical principles of laser action.

Essential knowledge of laser building blocks.

Overview of the most important laser types.

**Contact:** Valdas Pasiskevicius – +46 8 553 781 55 – [vp@kth.se](mailto:vp@kth.se)

<http://www.kth.se/student/kurser/kurs/SK3400?l=en>

## SWEDEN

### Physics of Biomedical Microscopy, Extended Course (SK3501) *Royal Institute of Technology*

#### Stockholm

Basic optical layout of the light microscope. Aberrations. Microscope objectives. Magnification. Numerical aperture. Microscope photometry. Detectors. Noise. Contrast methods (fluorescence, phase contrast, DIC). Resolution. Fourier methods. Optical transfer functions. Three-dimensional imaging in microscopy. Sampling and reconstruction of image data. Confocal microscopy. A brief introduction to tunnel and atomic force microscopy, electron microscopy, scanning near-field optical microscopy and X-ray microscopy.

**Contact:** Kjell S Carlsson – +46 8 553 781 32 – [kjellc@kth.se](mailto:kjellc@kth.se)  
<http://www.kth.se/student/kurser/kurs/SK3501?l=en>

### Fourier Optics (SK3340) *Royal Institute of Technology*

#### Stockholm

The overall aim of the course is that you should be able to analyze optical problems with the help of the approximations made in Fourier optics and develop simple numerical simulations for your systems.

**Contact:** Ulrich Vogt – +46 8 553 788 89 – [uvogt@kth.se](mailto:uvogt@kth.se)  
<http://www.kth.se/student/kurser/kurs/SK3340?l=en>

### Fluorescens Spectroscopy for Biomolecular Studies (SK3521) *Royal Institute of Technology*

#### Stockholm

This course covers methods in fluorescence spectroscopy that are used to study biomolecules and their interactions.

**Contact:** Jerker Widengren – +46 8 553 780 30 – [wideng@kth.se](mailto:wideng@kth.se)  
<http://www.kth.se/student/kurser/kurs/SK3521?l=en>

### Nonlinear Optics (SK3420) *Royal Institute of Technology*

#### Stockholm

- Course main content: Nonlinear interaction between a light field and matter.
- Perturbation calculations.
- Strong EM-fields.
- Quantum mechanical calculations.
- Crystallography.
- Bloch equation.
- Application of nonlinear optics.

**Contact:** Valdas Pasiskevicius – +46 8 553 781 55 – [vp@kth.se](mailto:vp@kth.se)  
<http://www.kth.se/student/kurser/kurs/SK3420?l=en>

## SWEDEN

### **Nonlinear Optical Technology (SK3421)** *Royal Institute of Technology*

#### **Stockholm**

Introduction to nonlinear optics, resonant and nonresonant processes, nonlinear optical material and applications, ultrashort optical pulses, nonlinear optical fibers, Raman and Brillouin scattering, nonlinear waveguides and photorefractive and optical damage in materials.

**Contact:** *Valdas Pasiskevicius* – +46 8 553 781 55 – [vp@kth.se](mailto:vp@kth.se)  
<http://www.kth.se/student/kurser/kurs/SK3421?l=en>

### **Introduction to Scanning Probe Microscopy (SK3740)** *Royal Institute of Technology*

#### **Stockholm**

To provide the theoretical background and physical intuition necessary to understand how SPM's operate and how to interpret the images they produce. To provide an practical, hands-on introduction to the operation of SPMs in a laboratory setting.

**Contact:** *David B Haviland* – +46 8 553 781 37 – [haviland@kth.se](mailto:haviland@kth.se)  
<http://www.kth.se/student/kurser/kurs/SK3740?l=en>

### **Quantum Electronics (SK3600)** *Royal Institute of Technology*

#### **Stockholm**

After the course, the student should understand and have knowledge in quantum optics, lasers, optical modulators, detectors and waveguides, nonlinear and ultrafast optics so to be able to solve, with the necessary literature, practical and theoretical problems within the given fields.

**Contact:** *Gunnar G E Björk & Katia Gallo* – +46 8 790 40 80 – [g Bjork@kth.se](mailto:g Bjork@kth.se)  
[gallo@kth.se](mailto:gallo@kth.se) – <http://www.kth.se/student/kurser/kurs/SK3600?l=en>

### **Optics of the Human Eye (SK3370)** *Royal Institute of Technology*

#### **Stockholm**

The overall goal of this course is to give the student an understanding of the optical properties and function of the human eye.

**Contact:** *Peter Unsbo* – +46 8 553 781 28 – [pu@kth.se](mailto:pu@kth.se)  
<http://www.kth.se/student/kurser/kurs/SK3370?l=en>

## SWEDEN

### Technical Photography (SK3380)

*Royal Institute of Technology*

#### Stockholm

Optical imaging. Photographic lenses. Photometry. The camera. Photographic film. Digital cameras. Electronic imaging sensors. Tone reproduction. Color photography. Photographic prints. X-ray, ultraviolet and infrared photography. High speed photography. Imaging quality.

**Contact:** Kjell S Carlsson – +46 8 553 781 32 – [kjellc@kth.se](mailto:kjellc@kth.se)

<http://www.kth.se/student/kurser/kurs/SK3380?l=en>

### Neurophysiology of Vision (SK3371)

*Royal Institute of Technology*

#### Stockholm

Basic anatomy of the retina, the lateral geniculate nucleus, and the striate cortex (primary visual cortex, V1). The physiological processes of photochemistry, transduction, and visual signal processing through photoreceptors, horizontal, bipolar, and ganglion cells. Receptive field profiles and selectivity of different cells to different stimulus properties such as spatial frequency, phase, orientation, and temporal movement. Spatial and temporal contrast sensitivity and visual acuity. Spatial frequency channels. Adaption. Aftereffects.

**Contact:** Linda Lundström – +46 8 553 782 12 – [lindafr@kth.se](mailto:lindafr@kth.se)

<http://www.kth.se/student/kurser/kurs/SK3371?l=en>

### Super Resolution Microscopy (SK3514)

*Royal Institute of Technology*

#### Stockholm

Acquire extended knowhow on how all superresolution techniques work (SIM, STED, dSTORM, PALM) and how to apply them in biological research (pros & cons).

**Contact:** Hans Blom – 08-52481214 – [hblom@kth.se](mailto:hblom@kth.se)

<http://www.kth.se/student/kurser/kurs/SK3514?l=en>

### Seminar Course in Laser Safety in Laser Safety (SK3415)

*Royal Institute of Technology*

#### Stockholm

The course brings up the function of different lasers, classification of lasers, biological effects of laser radiation, basic safety rules, use of protective equipment and control of related hazards including electrical safety and fire safety and emergency response procedures. The examination with seminars and discussions in connection with the seminars train the student's communicative skills.

**Contact:** Fredrik Laurell – +46 8 553 781 53 – [flaurell@kth.se](mailto:flaurell@kth.se)

<http://www.kth.se/student/kurser/kurs/SK3415?l=en>

## SWEDEN

### **X-ray Physics and Applications** *Royal Institute of Technology*

#### **Stockholm**

Part 1: X-ray basics

X-ray interaction with matter, X-ray sources, X-ray optics, X-ray detectors

Part 2: Application examples and special topics.

**Contact:** Ulrich Vogt – +46 8 553 788 89 – [uvogt@kth.se](mailto:uvogt@kth.se)

<http://www.kth.se/student/kurser/kurs/SK3550?l=en>

### **Optical Design (SK3330)** *Royal Institute of Technology*

#### **Stockholm**

Geometrical optics, aberration theory, evaluation of optical systems, ray-tracing using commercial software, methods of optical design.

**Contact:** Anna Burvall – +46 8 553 788 51 – [anna.burvall@biox.kth.se](mailto:anna.burvall@biox.kth.se)

<http://www.kth.se/student/kurser/kurs/SK3330?l=en>

### **Nanophotonics and Bionanophotonics** *Royal Institute of Technology*

#### **Stockholm**

This course has been developed in parallel with the fast-advancing multidisciplinary research and technological developments in the field of nanophotonics and bionanophotonics, and addresses three main areas.

**Contact:** Ying Fu – +46 8 524 848 89 – [fu@kth.se](mailto:fu@kth.se)

<http://www.kth.se/student/kurser/kurs/SK3560?l=en>

### **Laser Physics (SK3410)** *Royal Institute of Technology*

#### **Stockholm**

Physical background of lasers. The laser cavity. The laser medium. Mode-controlled techniques. The properties of coherent laser light. The time- and spatial-dependent behavior of lasers.

**Contact:** Fredrik Laurell – +46 8 553 781 53 – [flaurell@kth.se](mailto:flaurell@kth.se)

<http://www.kth.se/student/kurser/kurs/SK3410?l=en>

## SWEDEN

### Laser Physics - Advanced Course (SK3411) Royal Institute of Technology

#### Stockholm

Physical background of lasers. The laser cavity. The laser medium. Mode-controlled techniques. The properties of coherent laser light. The time- and spatial-dependent behavior of lasers.

**Contact:** Fredrik Laurell – +46 8 553 781 53 – [flaurell@kth.se](mailto:flaurell@kth.se)  
<http://www.kth.se/student/kurser/kurs/SK3411?l=en>

### Photonic Devices and Circuits Chalmers University of Technology

#### Gothenburg

(jointly with KTH)

**Contact:** Anders Larsson, Shumin Wang – 031 772 15 93  
[anders.larsson@chalmers.se](mailto:anders.larsson@chalmers.se)

### Quantum Semiconductor Heterostructures Chalmers University of Technology

#### Gothenburg

(jointly with KTH)

**Contact:** Shumin Wang

### Nonlinear Fiber Optics Chalmers University of Technology

#### Gothenburg

(jointly with KTH)

**Contact:** Magnus Karlsson – 031 772 15 90  
[magnus.karlsson@chalmers.se](mailto:magnus.karlsson@chalmers.se)

### Polarization Effects in Fibers Chalmers University of Technology

#### Gothenburg

(jointly with KTH)

**Contact:** Magnus Karlsson – 031 772 15 90  
[magnus.karlsson@chalmers.se](mailto:magnus.karlsson@chalmers.se)

## SWEDEN

### **Advanced Measurement Techniques** **Chalmers University of Technology**

#### **Gothenburg**

(jointly with KTH)

**Contact:** Victor Torres-Company – 031 772 19 04 - torresv@chalmers.se

### **Semiconductor Physics** **Chalmers University of Technology**

#### **Gothenburg**

(jointly with KTH)

**Contact:** Tommy Ive, Anders Larsson – 031 772 33 79 - tommy.ive@chalmers.se

### **Laser Spectroscopy** **University of Uppsala**

#### **Uppsala**

The course covers the properties of light, interaction of light with matter, the principles of lasers, different kinds of lasers. Applications of lasers in spectroscopy in chemistry, physics and biology, especially time-resolved (and ultrafast) methods.

**Contact:** Burkhard Zietz – 018-471 3636

burkhard.zietz@kemi.uu.se

### **Electrodynamics** **Luleå University of Technology**

#### **Luleå**

Fundamental course in EM-fields.

**Contact:** Mikael Sjö Dahl – 0920-491220 – mikael.sjodahl@ltu.se

### **Imaging** **Luleå University of Technology**

#### **Luleå**

Principles of advanced imaging and techniques.

**Contact:** Mikael Sjö Dahl – 0920-491220 – mikael.sjodahl@ltu.se

### **Correlation optics** **Luleå University of Technology**

#### **Luleå**

Principles of random optical fields and techniques.

**Contact:** Mikael Sjö Dahl – 0920-491220 – mikael.sjodahl@ltu.se



**UK**

## UK

### **Electronic Engineering and Physics (MSc by research)** **University of Dundee**

#### **Dundee, Scotland**

The Division of Electronic Engineering, Physics & Renewable Energy: renewable energy, nanotechnology, bio-medical physics, optical manipulation and photonics.

**Contact:** *Linda Rannie*

### **Aston Institute of Photonic Technologies** **Aston University**

#### **Birmingham, Midlands**

The Aston Institute of Photonic Technologies offers PhD studentships in Optical Communication, Nonlinear photonics, Optical sensing, Femtosecond Lasers, Fibre Lasers, Biomedical photonics and Optoelectronics, subject to availability.

**Contact:** +44 (0)121 204 3000 – [photonics@aston.ac.uk](mailto:photonics@aston.ac.uk)

<http://www.aston.ac.uk/eas/research/groups/photonics/postgraduate-opportunities/>

### **Centre for Photonics and Photonic Materials** **University of Bath**

#### **Bath, Midlands**

The University of Bath offers PhD studentships in photonics in the Centre for Photonics and Photonic Materials. Current research topics include photonic crystal fibres, hollow-core and multi-core fibre designs, wavelength conversion, high power pulsed laser delivery, endoscopy and fibre lasers.

**Contact:** *Dr William Wadsworth* – +44 (0) 1225 386946 – [W.J.Wadsworth@bath.ac.uk](mailto:W.J.Wadsworth@bath.ac.uk)

<http://www.bath.ac.uk/research/centres/cppm/join-us/potential-supervisors.html>

### **Centre for Quantum Photonics** **University of Bristol**

#### **Bristol, West Midlands**

The Centre for Quantum Photonics offers research PhD studentships in Quantum Communications, Quantum Sensing and Quantum Computing, subject to availability.

**Contact:** +44 (0)117 928 9000 – [cqp-enquiries@bristol.ac.uk](mailto:cqp-enquiries@bristol.ac.uk)

<http://www.bristol.ac.uk/physics/research/quantum/opportunities/>

### **Photonics** **University of Bristol**

#### **Bristol, West Midlands**

The Photonics group in the Faculty of Engineering provides research photonics PhD studentships in a variety of areas, subject to availability.

**Contact:** +44 (0)117 928 9000 – [pg-admissions@bristol.ac.uk](mailto:pg-admissions@bristol.ac.uk)

<http://www.bristol.ac.uk/study/postgraduate/2016/eng/pgr-listing/index.html>

## UK

### Photonics University of Cambridge

#### Cambridge, East Anglia

The university of Cambridge offers PhD studentships in 3 research groups, with topics including photonic materials, communications and sensing, and photonic devices and applications. Subject to availability.

**Contact:** +44 (0)1223 760606 – [Graduate.Admissions@admin.cam.ac.uk](mailto:Graduate.Admissions@admin.cam.ac.uk)  
<http://www-g.eng.cam.ac.uk/photonics/>

### Condensed Matter and Photonics Group University of Cardiff

#### Cardiff, Wales

Cardiff University offers PhD studentships in the Condensed Matter and Photonics Group, which studies Photonics & Biophotonics, Quantum Materials & Devices, Nanoscale Science & Technology, Theory & Computational Physics and Imaging, Sensors & Instrumentation.

**Contact:** +44 (0)29 208 70084 – [postgradenquiries@cardiff.ac.uk](mailto:postgradenquiries@cardiff.ac.uk)  
<http://www.astro.cardiff.ac.uk/degreeprogrammes/pg/?page=physics>

### EPSRC Centre for Doctoral Training in Photonic Integration and Advanced Data Storage University of Cardiff

#### Glasgow, Scotland

The Centre's focus is on developing highly-manufacturable photonic integration technologies related to the magnetic storage of digital information. It provides PhD studentships depending on availability.

**Contact:** [piads.cdt@qub.ac.uk](mailto:piads.cdt@qub.ac.uk)  
<http://www.gla.ac.uk/schools/engineering/research/centreforddoctoraltraining/#tabs=3>

### Institute of Photonics and Quantum Sciences Heriot Watt University

#### Edinburgh, Scotland

The Institute of Photonics and Quantum Sciences spans research including lasers and optical sensing approaches, manufacturing methods and quantum information. There will be a special focus on quantum sciences and its close relationship with photonics-based technology.

**Contact:** Prof Ajoy Kay – +44 (0) 131 451 3049 – [A.K.K@hw.ac.uk](mailto:A.K.K@hw.ac.uk)  
<http://www.hw.ac.uk/schools/engineering-physical-sciences/research/phd/physics.htm>

## UK

### Photonics Imperial College

#### London, Greater London

The Photonics group at Imperial College London offer PhD studentships in Biophotonics, Laser Physics, Electromagnetic Theory, Nonlinear Fibre Optics, Imaging and Sensing, subject to availability.

**Contact:** +44 (0)20 7589 5111 – [m.salviato@imperial.ac.uk](mailto:m.salviato@imperial.ac.uk)

[http://www3.imperial.ac.uk/photonics/pg\\_opportunities/phd\\_opportunities](http://www3.imperial.ac.uk/photonics/pg_opportunities/phd_opportunities)

### Photonics University College London

#### London, Greater London

The Photonics Group is involved in studies of opto-electronic devices, sub-systems and systems ranging from semiconductor lasers and liquid crystal wavelength division multiplex filters to millimetre-wave over fibre broadband access systems. They offer PhD studentships subject to availability.

**Contact:** Dr Ioannis Papakonstantinou – +44 (0)20 7679 7302

[phdenquiries@ee.ucl.ac.uk](mailto:phdenquiries@ee.ucl.ac.uk)

<https://www.ee.ucl.ac.uk/doctorate/programme>

### Institute of Microwaves and Photonics University of Leeds

#### Leeds, North East

The University of Leeds offers PhD studentships in Terahertz, Nanotechnology, Bionanoelectronics and Quantum Electronics where available.

**Contact:** +44 (0)113 343 8000 – [phd@engineering.leeds.ac.uk](mailto:phd@engineering.leeds.ac.uk)

<http://www.engineering.leeds.ac.uk/electronic/postgraduate/research-degrees/index.shtml>

### Photonics Engineering and Health Technology Group Loughborough University

#### Loughborough, Midlands

Loughborough University offers PhD studentships in the Photonics Engineering and Health Technology Research Group. Research areas include Biomedical Photonics, Imaging Processing and Health Technology.

**Contact:** Julie Allen – +44 (0)1509 227087 – [j.d.allen@lboro.ac.uk](mailto:j.d.allen@lboro.ac.uk)

<http://www.lboro.ac.uk/departments/eese/pg-research/>

## UK

### Photonics University of Manchester

#### Manchester, North West

Phd studentships in physics are offered at the University of Manchester subject to availability. Key research areas in the photon physics group are low energy lighting, solar cells, medical and biological uses of lasers and fundamental atomic and molecular physics.

**Contact:** +44 (0)161 306 3673 – [pg-physics@manchester.ac.uk](mailto:pg-physics@manchester.ac.uk)

<http://www.physics.manchester.ac.uk/our-research/divisions/condensed-matter-atomic-and-biological-physics/photon-physics/postgraduatestudy/>

### Photonics University of Oxford

#### Oxford, Midlands

The University of Oxford offers PhD studentships in physics, where research areas in photonics include Devices, Imaging, Optics, Spectroscopy and Biophotonics where available.

**Contact:** +44 (0)1865 272200 – [PGAdmissions@physics.ox.ac.uk](mailto:PGAdmissions@physics.ox.ac.uk)

<https://www2.physics.ox.ac.uk/study-here/postgraduates>

### Quantum, Light and Matter University of Southampton

#### Southampton, South East

The Quantum, Light and Matter group at the University of Southampton provide PhD studentships in Nanophotonics, Optical Materials, integrated atom chips & Quantum Control, Nanocrystals, Quantum Theory, Lasers and Terahertz, subject to availability.

**Contact:** +44 (0)23 8059 2093 – [ceris@phys.soton.ac.uk](mailto:ceris@phys.soton.ac.uk)

<http://www.qim.soton.ac.uk/join>

### Optoelectronics Research Centre University of Southampton

#### Southampton, South East

The Optoelectronic Research Centre provides over 30 PhD studentships in a wide variety of photonics applications.

**Contact:** +44 (0)23 8059 3144 – [fpse-phdapply@soton.ac.uk](mailto:fpse-phdapply@soton.ac.uk)

<http://www.orc.soton.ac.uk/phdprogram.html>

## UK

### Photonics University of St Andrews

#### Fife, Scotland

The university of St Andrews offers PhD studentships in Laser Physics, Biophotonics, Nanotechnology, Optoelectronics, Quantum optics and Millimetre and Terahertz technology. Subject to availability.

**Contact:** +(01334) 463111 – [physics@st-andrews.ac.uk](mailto:physics@st-andrews.ac.uk)  
[http://www.st-andrews.ac.uk/physics/prosp\\_pg/phd/current\\_phd\\_projects.php?theme=5&filter=3](http://www.st-andrews.ac.uk/physics/prosp_pg/phd/current_phd_projects.php?theme=5&filter=3)

### Institute of Photonics University of Strathclyde

#### Edinburgh, Scotland

The University of Strathclyde offers PhD studentships subject to availability in research areas such as Photonic materials and devices, Neurophotonics and Lasers.

**Contact:** 0141 548 4120 – [iop@strath.ac.uk](mailto:iop@strath.ac.uk)  
<http://www.strath.ac.uk/photonics/phdandmscplaces/>

### Photonics University of Surrey

#### Guildford, South East

The Photonics group at the University of Surrey offers PhD studentships where available in research areas such as quantum superposition of electron orbits in phosphorous doped silicon, development of new III-V materials and technologies, and development of efficient photovoltaics for laser power transfer applications.

**Contact:** +44 (0)1483 686 128 – [gradschoolfeps@surrey.ac.uk](mailto:gradschoolfeps@surrey.ac.uk)  
<http://www.surrey.ac.uk/postgraduate/physics-phd>

### Photonics University of York

#### York, North East

The aim of the photonics group at York is to design and fabricate photonic crystals and other wavelength-scale structures that manipulate the flow of light. The group's activities span the study of nanostructured silicon photonics, biophotonics, and photovoltaics. They offer PhD studentships subject to demand.

**Contact:** Dr Yvette Hancock – +44 (0)1904 322204 – [y.hancock@york.ac.uk](mailto:y.hancock@york.ac.uk)  
<https://www.york.ac.uk/physics/postgraduate/researchprojects/>



OTHERS

**FRANCE**



FRANCE

**Secondary schools offering the BTS in Photonic Systems**

**Dpt. 37 ▶ Lycée Jacques de Vaucanson**

1 rue Védrines – 37000 TOURS

[www.vaucanson.org](http://www.vaucanson.org)

**Contact:** Tél. +33 (0)2 47 54 13 13 – [ce.0371418r@ac-orleans-tours.fr](mailto:ce.0371418r@ac-orleans-tours.fr)

**Dpt. 39 ▶ Lycée Victor Bérard**

35 quai Aimé Lamy – BP 70087 – 39403 MOREZ Cedex

[www.lyceemorez.fr](http://www.lyceemorez.fr)

**Contact:** Tél. +33 (0)3 84 34 17 00 – [infos@lyceemorez.fr](mailto:infos@lyceemorez.fr)

**Dpt. 42 ▶ CFAI Loire (apprenticeship training)**

Cité des entreprises – 16 boulevard de l'Etivallière – 42000 SAINT-ÉTIENNE

[www.formation-industries-loire.fr](http://www.formation-industries-loire.fr)

**Contact:** Tél. +33 (0)4 77 93 78 01 – [sylvain.luquet@citedesentreprises.org](mailto:sylvain.luquet@citedesentreprises.org)

**Dpt. 75 ▶ Lycée Fresnel**

31 boulevard Pasteur – 75015 PARIS

<http://lyc-fresnel.scola.ac-paris.fr>

**Contact:** Tél. +33 (0)1 53 69 62 62 – [ce.0750695y@ac-paris.fr](mailto:ce.0750695y@ac-paris.fr)

**Dpt. 92 ▶ Lycée Léonard de Vinci**

4 avenue Georges Pompidou – 92300 LEVALLOIS-PERRET

[www.lyc-vinci-levallois.ac-versailles.fr](http://www.lyc-vinci-levallois.ac-versailles.fr)

**Contact:** Tél. +33 (0)1 41 05 12 12 – [0921230m@ac-versailles.fr](mailto:0921230m@ac-versailles.fr)

**Dpt. 22 ▶ Lycée Félix Le Dantec**

Rue des Cordiers – BP 80349 – 22303 LANNION

[www.lycee-ledantec.ac-rennes.fr](http://www.lycee-ledantec.ac-rennes.fr)

**Contact:** Tél. +33 (0)2 96 05 61 71 – [ce.0220023f@ac-rennes.fr](mailto:ce.0220023f@ac-rennes.fr)

**Dpt. 31 ▶ Lycée Déodat de Séverac**

26 boulevard Déodat de Séverac – 31076 TOULOUSE Cedex

<http://deodat.entmip.fr>

**Contact:** Tél. +33 (0)5 62 13 17 00 – [0310044e@ac-toulouse.fr](mailto:0310044e@ac-toulouse.fr)

## FRANCE

### Dpt. 34 ▶ Lycée Jean-François Champollion

BP 10110 – 34874 LATTES Cedex

[www.lyc-champollion-lattes.org](http://www.lyc-champollion-lattes.org)

**Contact:** Tél. +33 (0)4 67 13 67 13 – [ce.0341794r@ac-montpellier.fr](mailto:ce.0341794r@ac-montpellier.fr)

### Dpt. 38 ▶ Lycée Argouges

61 rue Léon Jouhaux – 38029 GRENOBLE Cedex 2

[www.ac-grenoble.fr/argouges](http://www.ac-grenoble.fr/argouges)

**Contact:** Tél. +33 (0)4 76 44 48 05 – [ce.0381603L@ac-grenoble.fr](mailto:ce.0381603L@ac-grenoble.fr)

### Dpt. 59 ▶ Lycée Gustave Eiffel

96 rue Jules Lebleu – BP 11 – 59427 ARMENTIÈRES Cedex

[www.2c.ac-lille.fr/Eiffel](http://www.2c.ac-lille.fr/Eiffel)

**Contact:** Tél. +33 (0)3 20 48 43 43 – [ce.0590011s@ac-lille.fr](mailto:ce.0590011s@ac-lille.fr)

### Dpt. 68 ▶ Lycée Jean Mermoz

53 rue du Docteur Hurst – 68301 SAINT-LOUIS Cedex

<http://gop.mermoz.free.fr/phonique/index.html>

**Contact:** Tél. +33 (0)3 89 70 22 70 – [ce.0680066c@ac-strasbourg.fr](mailto:ce.0680066c@ac-strasbourg.fr)

## University Institutes of Technology (IUT) offering the University Diploma (DUT) in Physical Measurements

### Dpt. 13 ▶ IUT Marseille

142 traverse Charles Susini – BP 157 – 13338 MARSEILLE Cedex 13

<http://iutmp.u-3mrs.fr>

**Contact:** Tél. +33 (0)4 91 28 93 05 – [chefdept-mp.iut@univ-cezanne.fr](mailto:chefdept-mp.iut@univ-cezanne.fr)

### Dpt. 14 ▶ IUT Caen

Boulevard du Maréchal Juin – 14032 CAEN Cedex

[www.iutcaen.unicaen.fr](http://www.iutcaen.unicaen.fr)

**Contact:** Tél. +33 (0)2 31 56 70 45 – [iut.caen.mp.secretariat@unicaen.fr](mailto:iut.caen.mp.secretariat@unicaen.fr)

### Dpt. 18 ▶ IUT Bourges

63 avenue de Lattre de Tassigny – 18020 BOURGES Cedex

[www.bourges.univ-orleans.fr/iut/mp](http://www.bourges.univ-orleans.fr/iut/mp)

**Contact:** Tél. +33 (0)2 48 23 80 50 – [secretariat.mp@bourges.univ-orleans.fr](mailto:secretariat.mp@bourges.univ-orleans.fr)

## FRANCE

### Dpt. 22 ▶ IUT Lannion

Rue Edouard Branly – BP 150 – 22302 LANNION Cedex

[www.iut-lannion.fr](http://www.iut-lannion.fr)

**Contact:** Tél. +33 (0)2 96 46 94 14 – [gaelle.mosser@univ-rennes1.fr](mailto:gaelle.mosser@univ-rennes1.fr)

### Dpt. 25 ▶ IUT Belfort-Montbéliard

4 place Tharradin – BP 71427 – 25211 MONTBELIARD Cedex

[www.iut-bm.univ-fcomte.fr](http://www.iut-bm.univ-fcomte.fr)

**Contact:** Tél. +33 (0)3 81 99 46 02 – [dut-mp-montbeliard@univ-fcomte.fr](mailto:dut-mp-montbeliard@univ-fcomte.fr)

### Dpt. 27 ▶ IUT Évreux

55 rue Saint Germain – 27000 ÉVREUX

[www.univ-rouen.fr](http://www.univ-rouen.fr)

**Contact:** Tél. +33 (0)2 32 29 15 20 – [mph.iutevreux@univ-rouen.fr](mailto:mph.iutevreux@univ-rouen.fr)

### Dpt. 31 ▶ IUT Toulouse

115C route de Narbonne – BP 67701 – 31077 TOULOUSE Cedex 4

<http://iut-meph.ups-tlse.fr>

**Contact:** Tél. +33 (0)5 62 25 82 48 – [contact.meph@iut-tlse3.fr](mailto:contact.meph@iut-tlse3.fr)

### Dpt. 33 ▶ IUT Bordeaux

15 rue Naudet – CS 10207 – 33175 GRADIGNAN Cedex

[www.iut.u-bordeaux1.fr/mp](http://www.iut.u-bordeaux1.fr/mp)

**Contact:** Tél. +33 (0)5 56 84 57 78 – [secretariat-mp@iut.u-bordeaux1.fr](mailto:secretariat-mp@iut.u-bordeaux1.fr)

### Dpt. 34 ▶ IUT Montpellier

99 avenue d'Occitanie – 34296 MONTPELLIER Cedex 5

<http://web-mp.iutmontp.univ-montp2.fr/blogmp>

**Contact:** Tél. +33 (0)4 99 58 50 60 – [mesphys@iutmontp.univ-montp2.fr](mailto:mesphys@iutmontp.univ-montp2.fr)

### Dpt. 38 ▶ IUT Grenoble

17 quai Claude Bernard – 38000 GRENOBLE

[www-iut.ujf-grenoble.fr/mph.html](http://www-iut.ujf-grenoble.fr/mph.html)

**Contact:** Tél. +33 (0)4 76 57 50 00 – [mph.iut@ujf-grenoble.fr](mailto:mph.iut@ujf-grenoble.fr)

## FRANCE

### Dpt. 41 ▶ IUT Blois

15 rue de la Chocolaterie – 41000 BLOIS

<http://iut-blois.univ-tours.fr>

**Contact:** Tél. +33 (0)2 54 55 21 18 – [secretariat.mp.iut-blois@univ-tours.fr](mailto:secretariat.mp.iut-blois@univ-tours.fr)

### Dpt. 42 ▶ IUT Saint-Étienne

28 avenue Léon Jouhaux – 42023 SAINT-ÉTIENNE Cedex 2

[www.iut.univ-st-etienne.fr/Accueil-MPH.html](http://www.iut.univ-st-etienne.fr/Accueil-MPH.html)

**Contact:** Tél. +33 (0)4 77 46 34 41 – [yves.jourlin@univ-st-etienne.fr](mailto:yves.jourlin@univ-st-etienne.fr)

### Dpt. 44 ▶ IUT Saint-Nazaire

58 rue Michel Ange – BP 420 – 44606 SAINT-NAZAIRE Cedex

[www.univ-nantes.fr/iutsn/mp](http://www.univ-nantes.fr/iutsn/mp)

**Contact:** Tél. +33 (0)2 40 17 81 20 – [scolarite@iutsn.univ-nantes.fr](mailto:scolarite@iutsn.univ-nantes.fr)

### Dpt. 51 ▶ IUT Reims

Rue des Crayères – BP 1035 – 51687 REIMS Cedex 2

[www.univ-reims.fr](http://www.univ-reims.fr)

**Contact:** Tél. +33 (0)3 26 91 30 31 – [iut.secretariat-mp@univ-reims.fr](mailto:iut.secretariat-mp@univ-reims.fr)

### Dpt. 57 ▶ IUT Metz

8 rue Marconi – 57070 METZ

[www.iut.univ-metz.fr](http://www.iut.univ-metz.fr)

**Contact:** Tél. +33 (0)3 87 31 51 40 – [iutmetz-mp-sec@univ-lorraine.fr](mailto:iutmetz-mp-sec@univ-lorraine.fr)

### Dpt. 59 ▶ IUT Valenciennes-Maubeuge

Chemin du Champ de l'Abbesse – 59609 MAUBEUGE

<http://formations.univ-valenciennes.fr>

**Contact:** Tél. +33 (0)3 27 53 17 70 – [seciutmp@univ-valenciennes.fr](mailto:seciutmp@univ-valenciennes.fr)

### Dpt. 59 ▶ IUT Lille

Boulevard Paul Langevin – BP 179 – 59653 VILLENEUVE D'ASCQ cedex

[www.iut.univ-lille1.fr/mp](http://www.iut.univ-lille1.fr/mp)

**Contact:** Tél. +33 (0)3 59 63 22 50 – [iut-mp@univ-lille1.fr](mailto:iut-mp@univ-lille1.fr)

## FRANCE

### Dpt. 63 ▶ IUT Clermont-Ferrand

Ensemble universitaire des Cézeaux – 63174 AUBIERE  
<http://iutweb.u-clermont1.fr/departement/mesures-physiques.html>  
**Contact:** Tél. +33 (0)4 73 17 71 70 – [dept.mp.iut@udamail.fr](mailto:dept.mp.iut@udamail.fr)

### Dpt. 71 ▶ IUT Creusot

12 rue de la Fonderie – 71200 LE CREUSOT  
<http://webcreusot.u-bourgogne.fr>  
**Contact:** Tél. +33 (0)3 85 73 10 00 – [dir-mp-lecreusot@u-bourgogne.fr](mailto:dir-mp-lecreusot@u-bourgogne.fr)

### Dpt. 72 ▶ IUT Le Mans

Avenue Olivier Messiaen – 72085 LE MANS Cedex 9  
<http://iut.univ-lemans.fr/>  
**Contact:** Tél. +33 (0)2 43 83 37 10 – [iut-mp@univ-lemans.fr](mailto:iut-mp@univ-lemans.fr)

### Dpt. 74 ▶ IUT Annecy

9 rue de l'Arc en Ciel – BP 240 – 74942 ANNECY-LE-VIEUX Cedex  
[www.iut-acy.univ-savoie.fr](http://www.iut-acy.univ-savoie.fr)  
**Contact:** Tél. +33 (0)4 50 09 23 80 – [secretariat.mph@univ-savoie.fr](mailto:secretariat.mph@univ-savoie.fr)

### Dpt. 75 ▶ IUT Paris Jussieu

2 place Jussieu – 75251 PARIS Cedex 5  
[www.iut.univ-paris7.fr](http://www.iut.univ-paris7.fr)  
**Contact:** Tél. +33 (0)1 57 27 79 74 – [iut.jussieu@univ-paris-diderot.fr](mailto:iut.jussieu@univ-paris-diderot.fr)

### Dpt. 76 ▶ IUT Rouen

Rue Lavoisier – 76821 MONT-SAINT-AIGNAN Cedex  
<http://mesures-physiques-rouen.fr>  
**Contact:** Tél. +33 (0)2 35 14 62 61 – [pascal.plouchard@univ-rouen.fr](mailto:pascal.plouchard@univ-rouen.fr)

### Dpt. 86 ▶ IUT Châtellerauld

34 avenue Alfred Nobel – ZAC du Sanital – 86100 CHÂTELLERAULT  
<http://iutp.univ-poitiers.fr/mesures-physiques>  
**Contact:** Tél. +33 (0)5 49 02 52 00 – [iutp.mp@univ-poitiers.fr](mailto:iutp.mp@univ-poitiers.fr)

## FRANCE

### **Dpt. 87 ▶ IUT Limoges**

Allée André Maurois – 87065 LIMOGES Cedex  
[www.iut.unilim.fr/departements-limoges-mesures-physiques](http://www.iut.unilim.fr/departements-limoges-mesures-physiques)  
**Contact:** Tél. +33 (0)5 55 43 43 85 – [iut-mplimoges@unilim.fr](mailto:iut-mplimoges@unilim.fr)

### **Dpt. 91 ▶ IUT Orsay**

Plateau du Moulon – 91400 ORSAY Cedex 5  
[www.iut-orsay.u-psud.fr](http://www.iut-orsay.u-psud.fr)  
**Contact:** Tél. +33 (0)1 69 33 60 62 – [dpt-mphy.iut-orsay@u-psud.fr](mailto:dpt-mphy.iut-orsay@u-psud.fr)

### **Dpt. 93 ▶ IUT Saint-Denis**

Place du 8 mai 1945 – 93200 SAINT-DENIS  
[www.iutsd.univ-paris13.fr/mp/](http://www.iutsd.univ-paris13.fr/mp/)  
**Contact:** Tél. +33 (0)1 49 33 62 50 – [mp-adm@iutsd.univ-paris13.fr](mailto:mp-adm@iutsd.univ-paris13.fr)

**GERMANY**

## GERMANY

### Certificate

#### Laser Technology

##### Jena, Thuringia

The certificate course imparts knowledge on laser technologies, laser material processing and metrology. The course duration is 4 semesters and is designed as correspondence course.

**Contact:** Dr. Gisbert Staupendahl – 0049 (0) 3641 - 947754  
[https://www.uni-jena.de/Studium/Studienangebot/Z\\_Lasertechnik.html](https://www.uni-jena.de/Studium/Studienangebot/Z_Lasertechnik.html)

### Teacher for high school

#### Physics

##### Universität Heidelberg

##### Heidelberg, Baden-Württemberg

The basic training in the field of physics is carried out in the disciplines Particle Physics, Atomic, Molecular and Optical Physics. Minor of study can be eg. Chemistry, Mathematics or Computer Science. Later, you can focus on the Optical Technologies.

**Contact:** Im Neuenheimer Feld 226, 69120 Heidelberg – +49 6221 54-19648  
[dekanat@physik.uni-heidelberg.de](mailto:dekanat@physik.uni-heidelberg.de) – <http://www.physik.uni-heidelberg.de/>

#### Physics

##### Universität Heidelberg

##### Tübingen, Baden-Württemberg

As part of the physical basic training, the Experimental and Theoretical Optics are taught. Priorities in the field of Optical Technologies include Nano Biophysics, Medical Physics, Quantum Field Theory, Astrophysics, Space Science and Quantum Optics.

**Contact:** Geschwister-Scholl-Platz, 72074 Tübingen – +49 7071 29-72514  
[www.physik.uni-tuebingen.de](http://www.physik.uni-tuebingen.de)



**GREECE**

**GREECE**

**Degree in Optics and Optometry**  
*Technological Educational Institution of Athens, Department of Optics  
and Optometry*

**Athens**

Theoretical and practical training for students, in the field of Optical Technology & Advanced Optometry.

**Contact:** +30 210 5385621 – [mscito@teiath.gr](mailto:mscito@teiath.gr)

[http://www.teiath.gr/seyp/new\\_optics/?lang=en](http://www.teiath.gr/seyp/new_optics/?lang=en)

**NETHERLANDS**

## NETHERLANDS

### **Optics Group** ***Delft University of Technology***

#### **Delft, South Holland**

The Optics Research Group is specialised in electromagnetic wave theory and imaging techniques operating in both near and far-field region and has one of the longest histories of research in Delft and in Optics for the all netherlands. Many topics in photonics developed in the group are keys to direct application in industries. Many opportunities are offered also in adjoining groups and departments.

**Contact:** 00 31 (0)15-27-81444 – [y.vanaalst@tudelft.nl](mailto:y.vanaalst@tudelft.nl)  
<http://optica.tudelft.nl/> & <http://jobs.tudelft.nl>

**SWEDEN**

## SWEDEN

### **One-Year Master Program in Solar Energy Engineering** **Dalarna University**

#### **Borlänge**

The one-year program focuses on the needs of the solar industry. Core courses are in Photovoltaics, Solar Thermal and Passive Solar Engineering. Typically, the program concludes with a 15 credit thesis.

**Contact:** Frank Fiedler – 46778711 – [ffi@du.se](mailto:ffi@du.se)  
[www.du.se/en/solar](http://www.du.se/en/solar)

### **Two-Year Master Program in Solar Energy Engineering** **Dalarna University**

#### **Borlänge**

The two-year program builds on the courses from the one-year program, going deeper into a number of solar topics while also broadening the student's perspective with regards to the role of Solar Energy in local, national and global energy systems. The program prepares students for an academic career.

**Contact:** Frank Fiedler – 46778711 – [ffi@du.se](mailto:ffi@du.se)  
[www.du.se/en/solar](http://www.du.se/en/solar)

**UK**

UK

## NVQ

### Engineering

This NVQ qualification may be taken with no qualifications, or at higher levels depending on qualifications. This will provide a stepping stone into engineering and manufacturing, which could lead to a career in a photonics industry.

**Contact:** <http://www.cityandguilds.com/qualifications-and-apprenticeships/engineering/mechanical/2850-engineering#tab=information>

## Apprenticeship

### Fianium

#### Southampton, South East

Fianium is a fiber laser company focused on ultra-fast, high power laser systems. They are currently researching apprenticeships for those with a passion for photonics, but without formal qualifications.

**Contact:** [careers@fianium.com](mailto:careers@fianium.com)  
<http://fianium.com/careers.htm>

## A Level

### Physics

An A level in physics usually includes topics such as Optics, the fundamentals of Quantum Physics, Waves and sometimes lasers. is the normal route towards a degree or career in photonics.

### Mathematics

A Mathematics A level is usually required for further study of physics and photonics in higher education.



UK

## Certificate

### Physics and Mathematics *Brkbeck University of London*

#### London, Greater London

This intensive course will prepare you for physics, mathematics, engineering and computer science degrees. There are no formal entry requirements. The course contains the basics of physics and maths, and contains an introduction to optics, waves and quantum effects.

**Contact:** +44 (0)20 7631 6000

[http://www.bbk.ac.uk/study/2016/undergraduate/programmes/UCHPHYMA\\_C/](http://www.bbk.ac.uk/study/2016/undergraduate/programmes/UCHPHYMA_C/)

### Certificate in Physics *The Open University*

#### Distance learning

This course has no formal entry requirements, and provides a good basic foundation in physics. The course teaches the fundamentals of Quantum Physics. This course can act as a stepping stone into further study or experience in photonics.

**Contact:** 0300 303 5303 – [general-enquiries@open.ac.uk](mailto:general-enquiries@open.ac.uk)

<http://www.open.ac.uk/courses/qualifications/s20#careers>

### Foundation year in Engineering/Physics/Maths and English Language CertHE *University of Dundee*

#### Dundee, Scotland

Throughout the degree guest lectures are given from a variety of speakers to help you appreciate how Engineering, Physics & Maths issues are handled in the real world. This course will raise English language ability, enhance academic skills for university study and help students adapt to future Engineering, Physics and Maths in university.

**Contact:** +44 (0)1382 38 38 38 – [SSE@dundee.ac.uk](mailto:SSE@dundee.ac.uk)

<http://www.dundee.ac.uk/study/ug/foundation-year-epm-english-language/#!info-why-dundee>

UK

## Foundation year

### Physics with Foundation Year *Aberystwyth University*

#### **Aberystwth, Wales**

Available to candidates without formal qualifications who have suitable background education, experience and motivation.

**Contact:** *Dr. Balazs Pinter – 01970 628624 – [phys-admissions@aber.ac.uk](mailto:phys-admissions@aber.ac.uk)  
<https://courses.aber.ac.uk/undergraduate/physics-degree-with-foundation-year/>*

### Physics and Astronomy (Gateway) *University of St Andrews*

#### **Fife, Scotland**

Physics & Astronomy (Gateway) is an alternative entry route to the University of St Andrews' degree programmes offered by the School of Physics & Astronomy. The programme is aimed at Scottish students who may not have been able to obtain the grades usually required by the School due to their circumstances or educational background.

**Contact:** *+44 (0)1334 46 2150 – [physics@st-andrews.ac.uk](mailto:physics@st-andrews.ac.uk)  
<https://www.st-andrews.ac.uk/study/ug/options/routes/physics-gateway/>*

### Physics with a Preliminary Year of Study *University of Bristol*

#### **Bristol, South West**

For students without standard entry qualifications for a degree course in Physics.

**Contact:** *+44 (0)117 928 8153 – [sci-ug-admissions@bristol.ac.uk](mailto:sci-ug-admissions@bristol.ac.uk)  
<http://www.bristol.ac.uk/physics/courses/undergraduate/>*

### Physics with Foundation *Durham University*

#### **Durham, North East**

For students without standard entry qualifications for a degree course in Physics.

**Contact:** *+44 (0)191 334 0172 – [foundation.centre@durham.ac.uk](mailto:foundation.centre@durham.ac.uk)  
<https://www.dur.ac.uk/courses/info/?id=7012&title=Physics+with+Foundation&code=F302&type=BSC&year=2015#coursecontent>*

## UK

### **Physics with a Foundation Year** **University of Hull**

#### **Hull, Midlands**

For students without standard entry qualifications for a degree course in Physics.

**Contact:** 01482 465501 – [admissions-physics@hull.ac.uk](mailto:admissions-physics@hull.ac.uk)

<http://www2.hull.ac.uk/science/physics.aspx>

### **Physics with Science Foundation Year** **Keele University**

#### **Staffordshire, West Midlands**

For students without standard entry qualifications for a degree course in Physics.

**Contact:** Professor Peter Haycock – 01782 734478 – [foundationyear@keele.ac.uk](mailto:foundationyear@keele.ac.uk)

<http://www.keele.ac.uk/foundationcourses/sciencefoundationyear/#tabs-1>

### **Physics with a Foundation Year** **University of Kent**

#### **Canterbury, South East**

Quantum Physics, Relativity Optics, Optics and Light may be studied as in a standard physics course albeit a year later due to having to take the foundation year.

**Contact:** +44 (0)1227 827272 – [information@kent.ac.uk](mailto:information@kent.ac.uk)

<http://www.kent.ac.uk/courses/undergraduate/24/physics-with-a-foundation-year>

### **Physics with a Foundation Year** **Leicester University**

#### **Leicester, East Midlands**

Light, Optics and the Quantum World' is one of the core modules taken in this course.

**Contact:** Dr Paul Howes – 0116 252 3587 – [Paul.Howes@leicester.ac.uk](mailto:Paul.Howes@leicester.ac.uk)

<http://www2.le.ac.uk/study/ugp/physics/foundation>

### **Science and Engineering Foundation Studies** **Loughborough University**

#### **Loughborough, Central UK**

This programme helps students who want to study a science or engineering degree at Loughborough, but who have arrived at this decision via an unconventional route.

**Contact:** 01509 223 343 – [Physics@lboro.ac.uk](mailto:Physics@lboro.ac.uk)

<http://www.lboro.ac.uk/departments/physics/>

UK

**Applied Physics**  
***The Manchester Metropolitan University***

**Manchester, North West**

This degree is suitable for students who wish to study physics both at a fundamental, theoretical level and across all its broad and varied real world applications.

**Contact:** +44 (0)161 247 1779 – [se.courses@mmu.ac.uk](mailto:se.courses@mmu.ac.uk)  
<http://www2.mmu.ac.uk/study/undergraduate/courses/2016/13252/>

**Physics with a Foundation Year in Science**  
***University of Nottingham***

**Nottingham, East Midlands**

The programme is designed for UK and EU students whose qualifications do not meet the current admissions requirements for direct entry to undergraduate degree programmes in engineering and the physical sciences. We encourage a range of high-level applicants from a wide range of backgrounds.

**Contact:** 0115 951 5165 – [julie.kenney@nottingham.ac.uk](mailto:julie.kenney@nottingham.ac.uk)  
<http://www.nottingham.ac.uk/physics/index.aspx>

**University Foundation Degree Year in Physics**  
***Nottingham Trent University***

**Nottingham, East Midlands**

Study the Quantum World and Optics at the Nottingham Trent University. There will be an extra foundation year if you choose to take this course.

**Contact:** +44 (0)115 848 4200 – [applications@ntu.ac.uk](mailto:applications@ntu.ac.uk)  
[http://www.ntu.ac.uk/apps/pss/course\\_finder/118277-1/39/bsc\\_\(hons\)\\_physics.aspx?yoe=6&st=1&s=1&sv=PHYS&sl=1|2#course](http://www.ntu.ac.uk/apps/pss/course_finder/118277-1/39/bsc_(hons)_physics.aspx?yoe=6&st=1&s=1&sv=PHYS&sl=1|2#course)

**Physics with a Foundation Year**  
***University of Sheffield***

**Sheffield, North East**

If you don't have the usual scientific or mathematical background for our degrees, a foundation year is for you. Your first year will be spent improving your knowledge and skills, so you're at the right level to move to a degree.

**Contact:** 0114 222 4362 – [physics.ucas@sheffield.ac.uk](mailto:physics.ucas@sheffield.ac.uk)  
<https://www.sheffield.ac.uk/prospectus/courseDetails.do?id=F3092016>

## UK

### **Physics with a Foundation Year** **University of Southampton**

#### **Southampton, South West**

The Foundation Year provides an introduction to mathematics, mechanics, computer programming, electricity & electronics and engineering principles and provides the skills required to study successfully for an undergraduate degree.

**Contact:** +44 (0)23 8059 3113 – [foundyr@soton.ac.uk](mailto:foundyr@soton.ac.uk)

<http://www.phys.soton.ac.uk/programmes/f301-bscmphys-physics-foundation-year>

### **Physics and Astronomy (with a Foundation Year)** **University of Sussex**

#### **Brighton, South East**

An increasing number of students are keen to study for a degree in physics or astrophysics but – although they have the necessary talent – their qualifications do not include the required Physics and Mathematics A levels (or their equivalent). This course is designed to address this, and includes a specially designed foundation year taught at Sussex.

**Contact:** +44 (0)1273 678416 – [ug.enquiries@sussex.ac.uk](mailto:ug.enquiries@sussex.ac.uk)

<http://www.sussex.ac.uk/study/ug/2015/1563/31103>

### **Physics incorporating a Foundation Year** **Swansea University**

#### **Swansea, Wales**

The Department of Physics offers a 4-year Physics with Integrated Foundation Year Degree scheme (F301) which is appropriate for students who are yet to achieve the necessary skills in physics and mathematics.

**Contact:** 01792 295720 – [physics-admissions@swansea.ac.uk](mailto:physics-admissions@swansea.ac.uk)

<http://www.swansea.ac.uk/undergraduate/courses/science/physics/bsc-physics-with-foundation-year-f301/>

### **Physics with Foundation Year** **University of York**

#### **York, North East**

The Foundation Year course offers an opportunity for those who have potential, but who do not possess appropriate qualifications, to develop the skills needed to progress to completing one of our degree programmes.

**Contact:** Dr. Erik Wagenaars – +44 (0)1904 322241 – [physics-admissions@york.ac.uk](mailto:physics-admissions@york.ac.uk)

<https://www.york.ac.uk/physics/undergraduate/degree-courses/bsc-physics-foundation/>



The RespiceSME project aims to reinforce the innovative capacity of Europe's photonics Small and Medium Enterprises (SMEs), clusters and national platforms by stimulating targeted collaborations in and beyond photonics.

Photonics4All is a European Horizon 2020 Outreach project, funded by the European Commission to promote photonics and light based technologies to young people, entrepreneurs and the general public across the EU. Photonics4all's unique selling point is that it will both develop a set of new promotional tools and apply them during a wide variety of outreach activities with different audiences.

*Discover our unique approach and check out our tools and events: <http://photonics4all.eu/>.*



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