

INFORMATICS EDUCATION IN EUROPE:

Institutions, degrees, students,
positions, salaries.

Key Data 2013-2018



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**Informatics Education in Europe:
Institutions, Degrees, Students,
Positions, Salaries. Key Data 2013-2018**

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ABOUT THIS REPORT

The publication in 2013 of the first Key Data Report on Informatics Education in Europe, covering the 2008-2012 period, was a milestone event. For the first time, policy makers, education and research professionals and the general public could obtain precise information on the state of education in the area of highest importance for the future of Europe: Information Science and Technology. Instead of relying on rumours and guesses, discussions and decisions could now take advantage of verified data on the key parameters in various countries, beginning with the exhaustive list of institutions offering education in the field and continuing with a precise description of the degrees offered, the student and graduates numbers at every level, with distribution by gender, the maze of faculty and researcher positions and titles, and the most controversial topic of all: faculty and researcher salaries. Encouraged by the community's enthusiastic reception, we have continued, updated and improved the work, enlarging its scope and coverage, producing every year, since 2013, an annual edition of this report.

Like its predecessors, this report, the seventh edition of the series, emanates not from a government body or a group with a specific political agenda, but from academics in the field, represented by Informatics Europe (the association of academic and industrial research institutions in Informatics), with the sole purpose of furthering the understanding of the discipline's parameters through the provision of basic, factual data.

Informatics Education in Europe: Institutions, Degrees, Students, Positions, Salaries. Key Data 2013-2018 provides an impressive picture of the state of Informatics education in Europe today. Based on an enormous amount of information from representative countries, it presents a wealth of fundamental data, starting from a list of institutions awarding degrees in the field and continuing with student enrolments, degrees awarded, gender information, academic titles, as well as precise and much-needed data about academic salaries across European countries.

This seventh edition has added a number of countries to those already covered. Thanks to the active participation of many collaborators, acknowledged below, the report now covers Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Ireland, Italy, Latvia, Lithuania, The Netherlands, Norway, Poland, Portugal, Romania, Spain, Switzerland, UK, and France for salaries.

The Informatics Key Data report series will continue to provide the community with the precise and objective information that is indispensable for understanding the field and making informed, effective policy decisions.

As a further step, Informatics Europe launched this year the **Informatics Europe Higher Education Data Portal: <https://www.informatics-europe.org/data/higher-education>**. Having a user-friendly format, it gives online access to the statistics presented in the Key Data report series from 2010/11 to 2017/18, the list of subjects identifying Informatics programs and the list of universities and academic units offering Informatics higher education in each country. Members of Informatics Europe have the added benefit of having privileged access and download rights of the whole dataset (<https://www.informatics-europe.org/data/higher-education/download.html>). The portal is one of the most useful and important services Informatics Europe can offer to its members, the community, industry and policy makers interested in the future of Computer Science and Technology in Europe. It provides plenty of opportunities for more in-depth analyses of key trends, issues, and aspects that need or could be improved with a better understanding of the higher education system in the field.

Disclaimer: *All facts and figures were obtained from publicly available sources. Although great care has been taken to ensure the data of interest was correctly extracted from these sources we give no warranty as to the accuracy or completeness of this information. The reader is solely responsible for any conclusions drawn from the information portrayed in this report as well as for the use of the data presented. Please report any incomplete or erroneous data to administration@informatics-europe.org.*

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Executive Summary

Informatics, the science behind Information Technology (IT), is a core enabler of Europe's future success. Crucial to that success is the availability of superb Informatics education throughout Europe.

In this report series, the first to attempt a general study of the state of the art in European Informatics higher education, the emphasis is on raw facts and figures rather than deep analysis; it provides the material for such analyses that others may wish to perform. Nevertheless, a number of salient points emerge:

- The field in Europe suffers from a **serious branding problem**. Even after an approximate translation to English, a good dozen terms are used to denote what is fundamentally the same discipline. In addition, there are numerous interdisciplinary study programs where Informatics is combined with **Business Administration** (e.g. Business Informatics, IT Management & Business, Business Information Systems), **Engineering** (Computer Science and Engineering, Electronics and Computer Engineering, Automation and Information Technology), **Mathematics** (e.g. Computing and Mathematics, Mathematical Informatics) or **Life Science** disciplines (e.g. Bioinformatics, Medical Informatics, E-health).
- The quantity and quality of available data varies considerably from country to country. In the interest of reliability, this report has mostly used data from countries where a solid and reasonably complete picture could be drawn from official sources. **Even when available, the data does not always allow direct comparisons, since definitions and methods of collection vary significantly from country to country.** It is very important for the field to ensure that **consistent, solid Informatics education data becomes available in all European countries.**
- Informatics is a well-developed academic field, with **hundreds of accredited institutions** training huge numbers of students for Bachelor's, Master's and PhD degrees.
- Extrapolating from more precise data in specific countries, we come to a rough estimate that:
 - more than **three hundred and fifty thousand new students enrol each year in Informatics Bachelor's programs in Europe.**
 - more than **a million students are enrolled in Informatics Bachelor's programs across Europe**; the corresponding **estimated figure for Master's students is more than two hundred thousand.**
 - around **hundred and sixty thousand students graduate each year in Informatics Bachelor's programs in Europe**; the corresponding **estimated figure for Master's graduates is more than sixty thousand.**
- **Female students are strongly underrepresented in Informatics studies in Europe. At the Bachelor's level**, in all countries included in this report, excluding Bulgaria, Estonia, Greece, and Romania, **80% or more of the students enrolled or graduating in Informatics Bachelor's programs are male.** At the Master's level, female participation increases in some countries, but decreases in others. In Bulgaria, Denmark, Estonia, Finland, Ireland, Greece, Latvia, Lithuania, Norway, Romania and UK, it exceeds 20%; in other countries it still remains low. Even if in some countries the female representation is slowly increasing along the last six years, the relative growth does not exceed 5% at the Bachelor's level and 7% at the Master's level.
- In the majority of the countries included in this report, excluding Denmark, Finland, Greece, Ireland, the Netherlands, Portugal, Switzerland and the UK, **the number of students graduating every year is less than half the number of new enrolled students.** Students in Informatics are either taking an unusually long time to conclude their studies successfully or not concluding them at all. We don't know how completion rates compare with other disciplines.
- The **status of faculty** varies considerably across Europe. **The salaries vary even more.** Our detailed study of the salaries of faculty in twelve European countries **shows, for a similar faculty position, a difference in salaries that can reach a factor of ten or more.** For example, a full professor at the top level receives, in some countries, the salary of a high-level industry executive, whereas in others the compensation is more comparable to that of a junior engineer in the IT industry.

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