

Higher education and research in Sweden

Sweden is taking part in the Bologna Process, a wide-ranging European cooperative venture whose goal is to harmonize all higher education in Europe. As a result, there will be major changes in the Swedish education system. By providing competitive undergraduate and graduate training, Sweden is to become a more attractive country to study in for students from abroad.

In Sweden, the Riksdag (Parliament) and Government have overall responsibility for higher education and research, which means that they make decisions on aims, guidelines and the allocation of resources.

Education and research fall under the brief of the Ministry of Education and Research. The Swedish National Agency for Higher Education is the central government agency responsible for matters concerning higher education, but universities and university colleges are separate government authorities and make their own decisions about the content of courses and other matters. The development of basic research in Sweden is financed and promoted by the Swedish Research Council.

Eligibility

To meet general admission requirements for attending a university or university college, students must have a school-leaving certificate from the high school or municipal adult education in Sweden or have completed high school education outside Sweden. Studies at a "folkhögskola" (folk high school) can also qualify students for higher education. When there are more applicants than places available, applicants are ranked, based in part on their grades when they leave school. A government bill introduced in March 2007 proposed among other things that passing grades be required in the core subjects of Swedish or Swedish as a second language, English and mathematics.



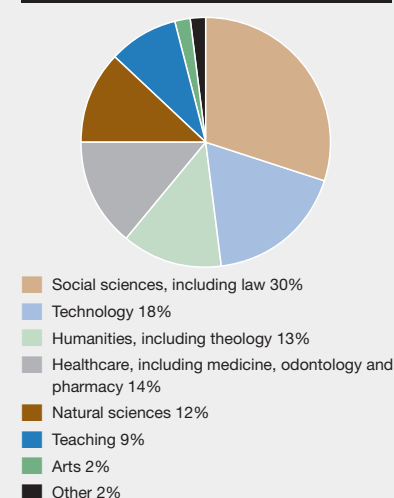
The number of students in undergraduate programs was about 320,000 in 2006.
Photo: Håkan Lindgren/Umeå University/www.imagebank.sweden.se

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Breakdown of students by field of undergraduate studies (2006)



Source: 2007 Annual Report, the Swedish National Agency for Higher Education

For many university programs, students also have to meet specific admission requirements. This may entail taking advanced courses in different subjects included in the national programs for high schools.

Financing, student loans

Studies at Swedish institutions of higher education are free of charge, as they are financed by the Swedish state. However, a report has been commissioned to determine whether fees should be introduced in the future for students from countries outside the EU.

Since 1965, all Swedish students who study at a university or university college are entitled to financial assistance, regardless of their parents' or spouse's finances. Study assistance consists of a grant component and a loan. Repayment of the loan is income-dependent, and the loan is to be repaid no later than the student's 60th birthday. For citizens of the EU/EEA or Switzerland, EU regulations apply. Other foreigners who have a permanent residence permit in Sweden may be entitled to Swedish financial assistance for studies both in Sweden and abroad.

Students at a university or university college must be members of the student union. Students have representatives in different decision-making bodies involved in their education. However, a proposal has now been submitted to abolish the student union fee.

Universities and university colleges are obliged to arrange instruction so that students with different types of disabilities have the same opportunities for study as other students.

Universities and university colleges

There are 14 state universities and 22 state university colleges in Sweden. There are also three independent higher education institutions that are entitled to offer graduate training: Chalmers University of Technology in Gothenburg, the Stockholm School of Economics and Jönköping University.

There are also other independent program providers who offer undergraduate education in a given field, such as health-care.

In Sweden, there are a total of 61 universities, university colleges and independent program providers that offer higher education.

Changes in the university system

There will be major changes in the Swedish university system starting on July 1, 2007, when the new levels of higher education are introduced. Each level requires that students have a degree from the preceding level of study. In the new system, one year of full-time study (40 weeks) will correspond to 60 credits instead of the current 40 credits. The new system is compatible with the European Credit Transfer System (ECTS).

The Bologna Process

These changes are part of what is known as the Bologna Process and also affect the

admissions process. Among other changes, starting in 2010, foreign applicants will be considered for admission in a separate group.

The aim of the Bologna Process is to create a coordinated European Higher Education Area (EHEA) by 2010.

The objectives of the Bologna Process:

- Easily readable and comparable degrees. Greater use is also to be made of the *Diploma Supplement*, a standardized description of each program and its position in the university system. Sweden was the first country to implement this.
- Two main cycles of studies.
- A uniform system of credits.
- Increased mobility for students, teachers, researchers and administrators.
- Promotion of European co-operation in quality assurance.
- Promotion of the necessary European dimensions in higher education.

The new system – starting July 2007

Undergraduate studies

- University diploma, 120 higher education credits, two years of full-time study.
- Bachelor's degree, 180 higher education credits, three years of full-time study.

A new degree category for arts is also being added:

- University diploma in arts, 120 higher education credits, two years of full-time study.
- Bachelor's degree in arts, 180 higher education credits, three years of full-time study.

Master's studies

- Master's degree (one year), 60 higher education credits, one year of full-time study.
- Master's degree (two-year), 120 higher education credits, two years of full-time study.
- Master's degree in arts (one year), 60 higher education credits, one year of full-time study.
- Master's degree in arts (two years), 120 higher education credits, two years of full-time study.

To be admitted to programs at the Master's level, students need at least a three-year undergraduate degree from Sweden or an equivalent degree or equivalent qualifications from another country.

Research studies

- Licentiate degree, 120 higher education credits, two years of full-time study.
- Doctoral degree, 240 higher education credits, four years of full-time study.

To be admitted to programs in research studies, students need a Master's level degree or at least four years of full-time study (with at least one year at the Master's level), the equivalent education abroad or equivalent qualifications.

Professional degrees

The reform also involves certain changes concerning professional degrees. Some degrees will be eliminated and others changed. For instance, the programs for a degree in architecture, a Master's degree in engineering science or a degree in radiation therapy will now be five years rather than the current four and a half years.

The aim of the Swedish state in its work with the Bologna Process is, among other things, to increase Sweden's attractiveness to foreign students as a country for study by offering internationally competitive education.

If any of the students being taught do not know Swedish, instruction are held in English. Some Master's programs are conducted entirely in English.

Swedish higher education – history and development

The number of students in undergraduate programs in Sweden increased from about 14,000 in 1945 to about 320,000 in 2006. During the 1990s, the number of students doubled. Research programs have expanded at a similar rate.

Sweden's investment in technology and the natural sciences has also led to almost a tripling in the number of degrees awarded in the country since the early 1990s. Sweden has thus advanced relative to other countries. In terms of the number of graduate degrees, Sweden also ranks at the top, doubling the number of degrees awarded in the 1990s. There were almost 18,000 students in research studies in 2006.

In the 2004/2005 academic year, the total number of students entering a university or university college was equal to 45.6 percent of all young Swedes. One trend that can be discerned is that recruitment to higher education has expanded in terms of class and sex. However, students from a working class background are still underrepresented. This is also true of students from an immigrant background; nonetheless, the differences here are considerable, depending on the nationality involved. Given this situation, the Government took the initiative a year or so ago to broaden recruitment to universities and university colleges.

Since the mid-1990s, a growing number of students from other countries have applied for studies in Sweden. During the 2005/2006 academic year, almost 26,000 foreign students were registered at Swedish universities and university colleges.

In the mid-1940s, the percentage of women in undergraduate programs was 20 percent. In recent years, the situation has changed dramatically – the percentage of women is now about 60 percent. But there

is considerable variation between the different programs.

Swedish investment in research

The aim of Sweden's research policy is to have Sweden be a leading research country, one of the most R&D-intensive countries in the world, and to have research that is both broad and specialized. Sweden allocates almost four percent of its gross national product (GDP) to research and development work, which corresponds to about EUR 820 or about USD 1,100 per capita.

Environmental technology is one field in which Swedish research is far in the lead. For instance, Sweden is one of the pioneers in the handling of emissions and toxic substances in products and manufacturing processes.

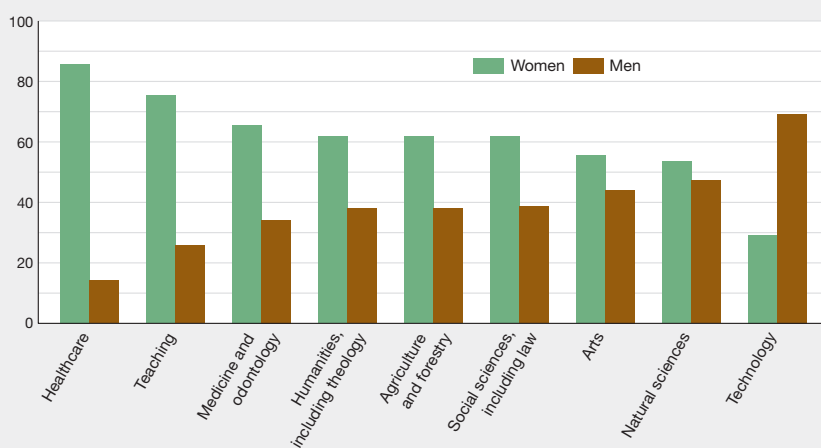
In nanotechnology too, Sweden has a high level of expertise in research. The roughly 30 "pure" nanotechnology companies in the country today are often university spin-offs with operations based on nanotechnology. A number of major Swedish companies – including ABB, Sandvik and Högånäs – have enhanced their competitiveness through nanotechnology.

The bulk of Swedish research, 75 percent, is financed by companies. Research funded by the state, which is carried out largely at universities and university col-



Sweden allocates almost four percent of its GDP to R&D work. Photo: Lars Dahlin/KTH/www.imagebank.sweden.se

Registered students in undergraduate programs by sex (fall term 2006), percent



Source: Statistics Sweden

leges, accounts for 22 percent of research. Since 1997, some universities and university colleges have fixed research funding, which means that they can plan their research more over the long term. Other research is carried out by different government agencies – for instance, the Swedish Environmental Protection Agency, the Swedish Defense Material Administration and the Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning – and in the private not-for-profit sector.

The breakdown by sex of students entering research programs is basically balanced, with 49 percent women and 51 percent men (2006). But here too, the breakdown varies in the different fields: in the humanities and social sciences, there are slightly more women, while in the natural sciences, there are slightly more men. In 2006, the percentage of

women among entering students was highest in medicine, 60 percent, and lowest in the engineering sciences, 31 percent.

After students complete their doctoral degree, they can choose to stay in the academic world as teachers and researchers. Here, men are still in a clear majority. Surveys have also shown that women with doctoral degrees have become professors at universities and university colleges to a lesser extent than men. In 2006, the number of women professors was 751 (17 percent) out of a total of 4,416 professors, which is nonetheless a clear increase compared to 85 women (5.1 percent) out of a total of 1,679 professors 20 years earlier.

Related links

Study in Sweden www.studyinsweden.se
 The Ministry of Education and Research www.sweden.gov.se/education
 The Swedish National Agency for Higher Education www.hsv.se
 The National Agency for Service to Universities and University Colleges www.vhs.se
 The Swedish Research Council www.vr.se
 Information about research in Sweden www.forskning.se
 The Swedish Institute for Studies in Education and Research – SISTER www.sister.nu

Percentage of women among research students awarded a doctoral degree

1986	24%
1996	33%
2006	46%

Source: Statistics Sweden

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