The Science, Engineering & Technology Group (SET) at KU Leuven comprises five faculties and fourteen departments. The five faculties organise the academic education at bachelor, master and PhD level. The fourteen departments are responsible for the research. A flexible structure of research centres across the departments facilitates the interdisciplinary character of the research. Most of the activities are organised in Leuven, but some take place in other campuses across Flanders.

Education

Within the field of science, engineering and technology, the KU Leuven offers five academic educational profiles organised in the five faculties: Science, Engineering Science, Bioscience Engineering, Engineering Technology and Architecture.

These five educational profiles have common characteristics but they differ in terms of the fundamental educational target being addressed, their position and horizon in the knowledge and application chain, and the key accents within the study programme and the relevant professional fields.

- The Faculty of Science offers programmes oriented towards generating new knowledge and insights by exploring uncharted territory in domains ranging from mathematics, informatics and physics over biology and chemistry to earth sciences. KU Leuven science graduates always aim at the deepest level of understanding of their subject. With this mindset they are able to discover, elucidate and explain phenomena in the natural sciences, on the basis of observation and experimentation or by developing models or (predictive) theories, strongly rooted in mathematical principles. They are focusing on the longer-term horizon. At the same time, students are encouraged to recognise innovation opportunities, and thus to contribute to the technologies of the future.

- The Faculty of Engineering Science (including engineering-architecture) and the Faculty of Bioscience Engineering offer study programmes that educate students to design, engineer and optimise concepts for new products, processes, systems or services and to master technological innovation. They pay considerable attention to both conceptual aspects and methodological and experimental approaches.
While these study programmes have a number of common features, they are rooted on different fundamental sciences: for engineers this is mainly physics and mathematics followed by engineering courses; for engineering architects this is mainly physics, mathematics and architectural design studios followed by engineering and architecture courses; for bioscience engineers the focus is more on biology and chemistry followed by bioscience engineering courses. These study programmes focus on the medium-term horizon.

- The Faculty of Engineering Technology trains students to become experts in developing, applying, implementing and improving products, processes and systems towards specific applications. This study programme therefore focuses on the short to medium term. The programme, taught at the seven campuses of the Faculty of Engineering Technology, is more oriented towards practical applications and immediate usability in the professional field.

- The Faculty of Architecture offers programmes in Architecture, Interior Architecture and Urban Planning & Spatial Design and is located in campuses in Ghent and Brussels. Education is based on the century-old tradition of architectural education at the Sint-Lucas School of Architecture. The programme’s uniqueness stems from the integration and interaction of design studios and technical, theoretical and explorative artistic courses and research. The teaching staff includes many leading international architects and researchers, all of whom bring extensive experience in the field of (interior) architecture and urban design.

Arenberg Doctoral School

The aim of the Arenberg Doctoral School is to coach, guide and educate PhD students so as to achieve their doctoral degree. The doctoral school provides an internationally competitive environment where doctoral students can tackle fundamental or more applied problems in their research field. The research is carried out in one of the 14 departments of the Group. In collaboration with the KU Leuven Career Centre, the Arenberg Doctoral School aims to ensure that researchers can maximally develop the transversal skills they need to further develop their career beyond the PhD or postdoc (YouReCa programme).

Number of Students

<table>
<thead>
<tr>
<th>KU Leuven</th>
<th>56100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science, Engineering and Technology Group</td>
<td>19680</td>
</tr>
<tr>
<td>- Bachelor’s students</td>
<td>8710</td>
</tr>
<tr>
<td>- Master’s students</td>
<td>7710</td>
</tr>
<tr>
<td>- Advanced Master’s + Postgraduate students</td>
<td>790</td>
</tr>
<tr>
<td>- PhD students</td>
<td>2300</td>
</tr>
<tr>
<td>- International students</td>
<td>20%</td>
</tr>
</tbody>
</table>

(figures October 2017)

Research

KU Leuven conducts fundamental and applied research in all academic disciplines. Over the past years, the quality and quantity of KU Leuven’s research efforts and output have increased considerably, positioning Leuven at the forefront of the European universities. Research in the Science, Engineering & Technology Group is characterised by originality and innovation, successful applications and valorisation, and strengthening of interdisciplinarity.
Its basic orientation has always been and remains basic research, both in fundamental and application-driven areas, while also focusing on the valorisation of the research results.

At the same time, the Group remains open to contemporary scientific, industrial, economic, social and cultural realities, as well as to society’s needs and expectations. The university has largely internationalised its competitive research, and has geared it toward the global community.

Innovation and cooperation across disciplinary, technological, cultural and geographical borders are key in the research activities.

The fourteen research departments in the Science, Engineering and Technology Group as well as the interdisciplinary research centres across the different departments create a stimulating environment to excel in several scientific fields and a dynamic research environment for creativity and innovation.

Departments

For basic and applied research leading towards methodological and systematic innovation as well as towards sustainable contributions to the society’s global challenges and economic growth, the SET Group has organised its research activities in 14 departments:

- Department of Architecture
- Department of Biology
- Department of Biosystems (BIOSYST)
- Department of Chemical Engineering
- Department of Chemistry
- Department of Computer Science
- Department of Civil Engineering
- Department of Earth and Environmental Sciences
- Department of Electrical Engineering (ESAT)
- Department of Materials Engineering (MTM)
- Department of Mathematics
- Department of Mechanical Engineering
- Department of Microbial and Molecular Systems (M2S)
- Department of Physics and Astronomy

The research is supported by outstanding research facilities and considerable infrastructure investments in new core facilities for experimental research, such as in the area of chemistry, chemical engineering and nanotechnology.

Academic Staff

<table>
<thead>
<tr>
<th>Faculty</th>
<th>610</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postdoctoral researchers</td>
<td>660</td>
</tr>
<tr>
<td>PhD researchers</td>
<td>over 2300</td>
</tr>
<tr>
<td>International academic staff</td>
<td>40%</td>
</tr>
</tbody>
</table>

(figures October 2017)

Research Centres

Interdisciplinary research centres, focusing either on research, networking or expertise, stimulate cooperation across the Science, Engineering and Technology Group, the Biomedical Sciences Group and the Humanities and Social Sciences Group, transcending the existing organisational units of faculties and departments. The Centres aim to cluster and spread knowledge and expertise in a specific field or on a specific theme. They conduct inter- and multidisciplinary research, support the education of students and researchers through the faculties and doctoral schools, and provide social services through workshops, lectures and diverse communications.

At present the following centres are active:

- Ethics@Arenberg
- Leuven Centre for Aero & Space Science, Technology and Applications (LASA)
- Leuven Centre for Bio-Science, Bio-Engineering and Bio-Technology (LBioSCENTeR)
- Leuven Computational Modelling Centre (LCMC)
- Leuven Energy Institute
- Leuven Engineering and Science Education Centre (LESEC)
- Leuven Food Science and Nutrition Research Centre (LFoRcE)
- Leuven Centre on Information and Communication Technology (LICT)
- Leuven Mobility Research Centre (L-Mob)
- Leuven Materials Research Centre (LMRC)
- Leuven Medical Technology Centre (LMTC)
- Leuven Statistics Research Centre (LSTAT)
- Leuven Sustainable Earth (LSUE)

Within the SET Group, there are many collaborations with research groups in the Humanities & Social Sciences and the Biomedical Sciences, as well as collaborations with Flemish research centres such as IMEC, NERF, VITO, EnergyVille, etc. and with the University Hospitals.
Research Valorisation

Research is important both as the basis of knowledge growth and as the foundation of academic education. It can also result in important benefits for society. With the help of KU Leuven Research & Development (LRD), the SET Group strongly valorises the knowledge generated by its researchers. The organisation of development projects with industry, the patenting and licensing of research results to industry, and the creation of spin-offs have become important mechanisms to build bridges between university science and industry, and to transfer knowledge and technologies to the marketplace. Since 1972, over 70 spin-off companies have originated from research in the field of Science, Engineering and Technology.

Arenberg Campus Library

The library building was once a Celestine abbey, unique in the Low Countries. It was founded in the beginning of the 16th century by Willem de Croy, who was a politician and counsellor to Philip the Fair and Charles V. Since 2002, it houses the library of the Science, Engineering & Technology group, together with the library of the Faculty of Physiotherapy and Rehabilitation Sciences. Thanks to internationally renowned Spanish architect Rafael Moneo, the library is now a very attractive combination of old and modern architecture.

The contemporary interior design within the ancient monastery provides an idyllic working environment and state-of-the-art library for academic staff and students. The library offers most journal and relevant conference databases in electronic version to the researchers. The full text of all the most important research articles is now available electronically. The library building is also used as a learning centre for the students.

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