

KATHOLIEKE HOGESCHOOL KEMPEN

Technical Sciences
Department
GEEL



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Bachelor of Electromechanics
Bachelor of Electrotechnology
Bachelor of Electronics - ICT
Bachelor of Logistics

Structure of the Technical Sciences Department

Bachelor of Electromechanics, with the options	
	<ul style="list-style-type: none">- Air conditioning- maintenance engineering- production mechanization- electromechanics
Bachelor of Electrotechnology	
Bachelor of Electronics-ICT, with the options	
	<ul style="list-style-type: none">- ICT- Electronics
Bachelor of Logistics	

Introduction

Welcome to this brochure, which will take you on a tour through the options Electromechanics, Electronics-ICT, Electrotechnology and Logistics of the Technical Sciences department.

The department of Technical Sciences counts about 640 students, and is part of Campus Geel.

On the campus in Geel some 3,800 young people are attending courses at one of the five Geel departments. For the entire Katholieke Hogeschool Kempen, with campuses in Geel, Turnhout, Lier and Vorselaar, we are talking about some 6,100 students.

Katholieke Hogeschool Kempen is associated with Katholieke Universiteit Leuven.

Campus

The Campus Geel of the Katholieke Hogeschool Kempen offers all facilities that can be expected from a large university college: an extensive multimedia library, state-of-the-art ICT applications, modern labs... Everything is there for you to fully develop your talents. 'Multi' is the keyword here: on our campus, different branches of science meet, allowing no one to be a blinkered specialist.

Quality

The two aspects mentioned - a pleasant atmosphere and an open campus spirit - are a sound basis for the quality of our training. The business world highly appreciates our graduates - a mere consequence of permanent quality control.

More information

This brochure provides you with basic information. It contains information both on the training and on professional profiles and student facilities. If you wish to know more, please do not hesitate to contact us; there is always someone available to help you.

Academic year

The academic year starts mid-September to end-June and has two semesters. In November, January, March/April and June there are tests in the first year.

In the third year you will do a training period of three months in a company. This work placement will lead to a final work or thesis, and a presentation of the final work at the end of the course in front of a jury of professionals.

Practically

In our department of Technical Sciences we offer a type of technological training from an applied and practical point of view. Theory is also important, but will only be dealt with in connection with the practice.

Three years

In the Technical Sciences Department we offer courses in professional higher education, which leads to a bachelor degree and is part of the study field of Industrial Sciences and Technology.

Options

The following short descriptions will give you an idea of the unique character of each option:

Bachelor of Electromechanics

Technologically

Bachelor of electromechanics is a 3-year technological training dealing with process automation and machines with industrial computers (PLCs), electrical and mechanical maintenance of machines, adaptation of existing and installation of new appliances (e.g. robots, conveyor belts, extrusion machines, conveyors, electric motors...), design of electric circuits, processing of metal and synthetic components, etc.. You will learn how to gather information, deal with it and communicate with your team members.

Technological and other courses

Only in the first year you will study supportive courses such as mathematics and chemistry, which will give you the necessary support to be able to deal with technological processes and techniques in your other courses.

You will obtain technological knowledge in courses such as mechanics, electricity, electronics, thermo-dynamics, study of materials, measuring techniques, control engineering, AutoCAD, pneumatics, hydraulics.

What is Electromechanics about?

Electromechanics

The attention will go mainly to the most varied techniques in production automation and to the mechanization of production processes and measurement and control systems. You will deal a lot with CAD, CNC, PLCs and courses such as Robotics.

Process automation

This deals entirely with process automation, which can be found mainly in the chemical, petrochemical, pharmaceutical and food industry. The core of the training lies in measuring and ruling all sorts of physical entities. Also the processing, the visualisation and storage of all important data. Also data transmission is central: from classical analogue signals to modern bus systems and web-based communication.

Maintenance engineering

Maintaining installations is the central point of view. All sorts of systems (electrical, mechanical, hydraulic, pneumatic...) are studied. You will also get to know the planning of maintenance works, assembly and disassembly techniques, reading blueprint, working methods etc.

Air conditioning

Methods and installations of air conditioning in buildings are the threads through this option. You will get to know the functioning, regulation, calculation and maintenance of heating and cooling installations, central heating, building physics and building management systems.

■ What can I do with it?

■ General

According to the federal job service a bachelor degree in technology is one of the best trump cards to find a job quickly, even when times are economically bad. The jobs for which you are trained in the course Mechanical Engineering, have been for a long time so-called "bottleneck" professions. These are professions for which there is permanently more demand than offer.

Most graduates will work in the industrial sector. Also in other organisations, such as hospitals, ministries and public utilities, our graduates are really desirable. Those who obtain a pedagogic competence degree can also have a career in teaching.

■ Here is a list of the typical jobs our graduates have:

● *Production jobs: technical*

- design of a mechanical workshop
- design and application of a CNC machine
- product realisation with CAD/CAM systems
- programming robots

● *Production jobs: organisation*

- work planning of a production line
- quality control and optimisation of production techniques and processes
- optimisation of work methods

● *Process-Automation jobs*

- installation and programming with PC and PLC
- automation of production processes
- study and installation of measuring and control equipment
- design, maintenance and installation of security appliances
- process control and computer measurements
- processing of measurement data

● *Air conditioning jobs*

- design and installation of heating and cooling installations
- study of insulation works
- study and installation of air conditioned spaces (e.g. greenhouses, computer rooms, swimming pools)
- study and installation of air conditioning
- rationalisation of energy usage

● *Maintenance technology jobs*

- curative, preventive and predictive maintenance activities
- mechanical, electrical, hydraulic and pneumatic maintenance
- Assembly, disassembly and technical analysis of machines.

■ Timetables

■ Credits, teaching activities and hours per week

The academic year is divided in course units, say "courses". The relative importance of such a course units is expressed by means of credits. An entire academic year counts 60 credits.

One hour is 60 minutes per week during a full academic year. An academic year counts 26 weeks of lessons, i.e. without the exams, study or holiday periods.

1st year Bachelor Electromechanics, option air conditioning

<i>Course unit</i>	<i>credits</i>
<i>Durable Energy</i>	4
<i>Drawing Autocad</i>	4
<i>Construction physics 1</i>	4
<i>Energy 1</i>	6
<i>Chemistry</i>	5
<i>Mathematics 1</i>	4
<i>Information skills</i>	3
<i>English</i>	3
<i>Lighting</i>	5
<i>PLC</i>	3
<i>Mechanics</i>	7
<i>Electricity</i>	5
<i>Electricity lab</i>	3
<i>Materials science</i>	4
<i>Total</i>	60

2nd year Bachelor Electromechanics, option air conditioning

<i>Course unit</i>	<i>credits</i>
Air conditioning 1	5
Construction management	4
Project construction management	4
Construction techniques lab	3
Energy 2	4
AutoCAD 2	3
Structured programming in Visual Basic	5
Process measurements	6
Measurement techniques	4
Measurement techniques lab	3
Electric machines	4
Electric machines lab	3

Electronics 15	
Electronics 1 lab	3
Mathematics 2	4
<i>Total</i>	<i>60</i>

3rd year Electromechanics, option Air Conditioning

<i>Course unit</i>	<i>credits</i>
<i>Air conditioning 2</i>	<i>3</i>
<i>Heating and cooling techniques</i>	<i>5</i>
<i>Cooling techniques lab</i>	<i>5</i>
<i>Business management</i>	<i>5</i>
<i>Planning</i>	<i>3</i>
<i>Safety</i>	<i>3</i>
<i>Construction management and exploitation</i>	<i>3</i>
<i>Strength of materials</i>	<i>3</i>
<i>Domotics</i>	<i>5</i>
<i>French</i>	<i>5</i>
<i>Perspectives on Religion and Meaning</i>	<i>3</i>
<i>Practice periods and thesis</i>	<i>15</i>
<i>Total</i>	

1st year Bachelor Electromechanics, option production-automation,

<i>course unit</i>	<i>credits</i>
<i>Chemistry</i>	<i>5</i>
<i>Electricity</i>	<i>5</i>
<i>Electricity Lab</i>	<i>3</i>
<i>Electronics Lab</i>	<i>3</i>
<i>Electronics</i>	<i>5</i>
<i>Computer Science</i>	<i>3</i>
<i>Materials science</i>	<i>4</i>
<i>Mechanics</i>	<i>7</i>
<i>PLC</i>	<i>3</i>
<i>English</i>	<i>3</i>
<i>Drawing AutoCAD</i>	<i>4</i>
<i>Energy 1</i>	<i>6</i>
<i>Mathematics 1</i>	<i>4</i>
<i>Digital systems</i>	<i>5</i>
<i>Total</i>	<i>60</i>

2nd year Bachelor Electromechanics, option process automation, maintenance technology and electromechanics

2nd year common courses

Course unit	credits
<i>Pumps and ventilators</i>	5
<i>Electrical machines</i>	4
<i>Electrical machines Lab</i>	3
<i>Electronics and communication techniques</i>	5
<i>Statistics and SPC</i>	6
<i>Structured programming in Visual Basic</i>	5
<i>Mathematics 2</i>	4
<i>Total</i>	32

2nd year , Option maintenance technology

<i>Workshop techniques lab</i>	4
<i>Maintenance techniques</i>	7
<i>Measurement techniques</i>	4
<i>PLC 2</i>	4
<i>Hydraulics</i>	6
<i>Pneumatics Lab</i>	3
<i>Total 28</i>	

2nd year , Option Process Automation

<i>Autocad</i>	3
<i>Measurement techniques</i>	6
<i>LabVIEW</i>	5
<i>Hydraulics</i>	6
<i>Pneumatics lab</i>	3
<i>PLC 2</i>	5
<i>Total</i>	28

2nd year , option electromechanics

<i>Workshop techniques lab</i>	5
<i>Tool parts</i>	4
<i>Measuring techniques</i>	4
<i>Measuring techniques lab</i>	4
<i>Hydraulics</i>	6

<i>Pneumatics lab</i>	3
<i>PLC2</i>	3
<i>Total</i>	28

3rd year Electromechanics, option process automation, maintenance technology and electromechanics

3rd year, common courses

<i>Course unit</i>	<i>credits</i>
<i>Business management and organization</i>	5
<i>Perspectives on Religion and Meaning</i>	3
<i>Management skills</i>	5
<i>Applied mechanics lab</i>	5
<i>Safety</i>	4
<i>Total</i>	28

3rd year , option maintenance technology

<i>CNC</i>	3
<i>Hydraulics</i>	3
<i>Maintenance techniques 1</i>	6
<i>Air conditioning lab</i>	5
<i>Practice period and thesis</i>	15
<i>Total</i>	32

3rd year, option process automation

<i>Data communication</i>	3
<i>Air conditioning lab</i>	6
<i>Measurement techniques</i>	4
<i>Industrial networks and data acquisition lab</i>	4
<i>Practice period and thesis</i>	15
<i>Total</i>	32

3rd year , option electromechanics

<i>Robotics</i>	5
<i>Mechanic measurement techniques</i>	6
<i>Industrial networks and data acquisition lab</i>	6
<i>Practice period and thesis</i>	15
<i>Total</i>	32

■ Bachelor of Electrotechnology

■ What is electrotechnology?

● Technologically

Electrotechnology is a three-year technological training in electricity and energy in all of its aspects, domestically as well as industrially .

The training consists of four aspects:

-Energy and energy management:

Sustainable energy and environment, rational energy usage, production and distribution of electricity, thermo-dynamics and energy transmission, pumps and ventilators.

-Lighting and domotics

Light efficiency and relighting, HF-lighting, security etc. in the residential sector

-Engineering

Design and dimensioning of fixed electrical installations, the choice of the appropriate engine, electrical security (AREI), CE-marking, PLC-management, networks and data-acquisition

-Electric drives

Electric machines, capacity electronics, electric engines

On top of that you will have a number of supporting courses in computer science and ICT, languages (French and English) and sciences (maths and chemistry, only in the first year)

■ What can I do with it?

Most graduates will work in the industry sector. Also in other organisations, such as hospitals, ministries and public utilities, our graduates are really desirable. Those who obtain a pedagogic competence degree can also have a career in teaching.

■ In practice

A bachelor of Electrotechnology will work in an area where electricity is the energy form for the functioning of machines, appliances and installations. Also energy rationalisation is an important component of the job package, with connections to domotics and lighting.

● They will function in the business activities of:

- Energy
- Lighting
- Domotics/alarm installations
- Electro-installations
- Maintenance and repair of electro-installations
- Switch apparatus and switchboards
- Automation
- Electric traction (rail, tram, metro, port)
- Engineering office
- Education

● In the function of:

- Technician
- Work floor leader, departmental leader, yard leader
- Technical-commercial employee
- Automation expert
- Lighting consultant
- Electro-technical drawer
- Teacher

- A random selection of our graduates' job description:
 - domotics expert, giving explanation to customers and offering measure-made solutions
 - installation and maintenance of alarm and telephone installations
 - design and calculation of lighting studies and the follow up of tenders
 - development of lighting fittings via CAD
 - employee in an engineering office , responsible for light technique and energy savings
 - drawing special techniques for domotics, lighting, heating, air conditioning, elevators, electricity and bathrooms
 - preparation of the work and drawing the electrical lines
 - enlargement and adaptation of industrial and electro-technical installations
 - board building and fault detection
 - organisation and division of the work on the shop floor
 - assisting designers via drawing in Auto CAD, Microstation and Eplan
 - Building electrical switches, make programmes, PLC management
 - Making thorough studies so that a company has the most efficient electrical network and equipment.
 - Production control of board before they are sent to the yard.

■ Timetables

■ Credits, teaching activities and hours per week

The academic year is divided in course units, say "courses". The relative importance of such a course units is expressed by means of credits. An entire academic year counts 60 credits.

One hour is 60 minutes per week during a full academic year. An academic year counts 26 weeks of lessons, i.e. without the exams, study or holiday periods.

<i>course unit</i>	<u><i>1st year Bachelor Electrotechnology</i></u>	<i>credits</i>
<i>Electricity</i>		5
<i>Electricity Lab</i>		3
<i>Lightening</i>		3
<i>Electronics</i>		5
<i>Electronics Lab</i>		3
<i>Computer Science</i>		3
<i>Mathematics</i>		4
<i>Chemistry</i>		5
<i>Mechanics</i>		7
<i>AutoCAD</i>		3
<i>Energy 1</i>		6
<i>Renewable energy and environment</i>		5
<i>Digital systems</i>		5
<i>English</i>		3
<i>Total</i>		60

2nd year Bachelor Electrotechnology

<i>course unit</i>	<i>credits</i>
<i>French</i>	3
<i>Control Engineering</i>	4
<i>PLC</i>	3
<i>Electrical machines</i>	5
<i>Electrical machines Lab</i>	3
<i>Electrical designs</i>	5
<i>Measurement Technology Lab</i>	3
<i>Rational Use of Energy</i>	5
<i>Structured programming in visual basic</i>	5
<i>Networks</i>	4
<i>Process measurements</i>	4
<i>Energy 2</i>	4
<i>Mathematics</i>	3
<i>Statistics</i>	5
<i>Lightening 2</i>	4
<i>Total</i>	60

3rd year Electrotechnology

<i>course unit</i>	<i>credits</i>
<i>Perspectives on Religion and Meaning</i>	3
<i>Domotics Lab</i>	3
<i>Business management and organisation</i>	5
<i>Domotics</i>	3
<i>Electrical machines</i>	3
<i>Electrical measurements lab</i>	3
<i>Production and distribution of electricity</i>	5
<i>Safety</i>	6
<i>Power electronics</i>	4
<i>Power electronics Lab</i>	3
<i>Management</i>	3
<i>PLC 2</i>	4
<i>Practice periods and thesis</i>	15
<i>Total</i>	

■ Bachelor in Electronics – ICT

■ What is Electronics – ICT?

● Computers

Electronics-ICT is a three-year technological study dealing with personal computers, pc networks, internet technology and data communication. This type of study is meant to attract youngsters of general and technical secondary education who are fascinated by the functioning of a pc in all of its aspects. Practically speaking you will learn to work with network appliances, web design, operating systems, the installation of network servers, computer control, domotics and multimedia, chip design, pc-hardware and electronic hardware and software.

● Practically

It is a type of training where we offer you the pc-technology from an applied and practical point of view. Theory is also important, but will only be dealt with in connection with the practice.

■ Options

From the start you will choose one of the options: ICT or electronics. For the rest of the course you will be separated from the other options. Of course it is possible after the first year to change to another option via certain bridge courses.

The short description that follows will give you an idea of the uniqueness of each option.

ICT

The recurring theme throughout this option is the PC in a network configuration. You will study client-server applications extensively. On top of that, you will mainly learn about PC hardware tuning, Cisco CCNA network technology, PIX firewall network security, VOIP, wireless LAN, server 2003, Unix (Linux), Exchange server, ISA server, database access and SQL, static and dynamic web design, ASP and PHP, Flash, XML, graphic web

tools, microcontrollers and embedded controllers in C and Java, and programming and control using the PC.

Electronics

In this option you will familiarise yourself with analogue and digital electronics. You will be given courses in general electronics and power electronics (diac, triac and thyristor controls). You will get insight into the operation of microcontrollers and learn how to program these components, with particular attention to process controls. Time will also be spent on various measuring systems. You may also build an electronic design from a scheme to a PCB then into a working product. In domotics you will learn how to design an installation and later program it according to various systems already on the market. In the IT courses you will learn how to scan, process and visualise process data. Within this programme much attention will also be paid to telecommunications. The world of broadcasting will be examined using practical examples for analogue as well digital information transfer.

All PCs are connected with an ultra-fast switched glass fibre network.

Together with industry

Electronics-ICT is proud to teach you the latest technology and systems. The business certificates will offer you entry to the business world. These are extra winning cards for you and companies will marvel at the extra certificates you will have obtained during your studies.

Cisco

Electronics-ICT was one of the initiators to have the Katholieke Hogeschool Kempen and more specifically the electronics lab, recognized as a Regional Cisco Academy. Cisco is the world's biggest manufacturer of ICT and network technology, and our lecturers are being trained by them in the most recent technologies. Our lecturers are also allowed to train other lecturers in Cisco technologies.

You will attend courses in Cisco technology, with Cisco course contents and Cisco tests. At the end of your studies you will receive the Cisco Certified Network Academy (CCNA) certificate of completion, a very valued extra certificate on top of your KHKempen degree.

🌐 Microsoft

Electronics-ICT concluded a contract with Microsoft for their Authorized Academic Training Program. This training will teach you the course contents approved by Microsoft, and a study programme created for the Microsoft Certified Professional Program (see also www.microsoft.com/train-cert/mcp/mcp/default.asp) and will thus prepare you for the certificate recognized by industry. You will attend two of the seven MCSE modules.

🌐 PC courses and supporting courses

You will attend a lot of courses with a close connection to the world of the PC: Windows server 2003, Java, Data Communication, Visual Basic, PCB-design, Telecommunication, Embedded C, Java, Networks, Multimedia, Unix/Linux, PC technology, Microcontrollers, Office, Internet Management, Computer and Network Technology, Access and Databases.

Apart from that you will be taught a number of supportive courses helping you to better understand the technological PC processes. This is the case for Electronics, Electricity, Digital Techniques, Automation and Power Electronics.

🗉 What can I do with it?

🗉 Generally

The jobs for which you are trained in the course Electronics-ICT, have been for a long time so-called "bottleneck" professions, also when times are economically bad. These are professions for which there is permanently more demand than offer. This is being confirmed by our own surveys. Nearly all students have a contract for a job even before having graduated. The terms of employment (salary, extra-legal conditions) in which they work are absolutely good.

Most graduates will work in the industry and service sector. The computer and Information Technology sector will take up about half of our graduates and this part increases annually. Furthermore our former students will work in big companies in the telecommunication and electronics sector.

Also in other organisations, such as hospitals, ministries and public utilities, our graduates are really desirable. Those who obtain a pedagogic competence degree can also have a career in teaching.

🗉 In practice

A bachelor of Electronics-ICT will work in an area where information is being processed, stored or transmitted via modern information technology. This will involve computers, internet, telecommunication, networks and multimedia. He or she will be responsible for all aspects of this technology: the hardware (computers and network appliances, infrastructure), software (programmes and configuration), contents and form of the information offered (multimedia).

🌐 A random selection of our graduates' functions:

- installation and maintenance of network infrastructure (appliance, LAN, WAN, data communication)
- installation, configuration, and testing of servers, routers, switches and firewalls
- network management: management of users, configuration and security of storage space, applications, servers, printers, etc.
- design, analysis and consulting for computer networks

help desk and PC-support, solving problem situations and support of PC users, mainframes and mini computers
-development of applications where technology plays an important role, e.g. network and systems programs, client-server programs , time-critical applications, simulations, multimedia applications
-development of information systems on internet technology: websites, intranets, extranets, database connections, scripting, secured connections, streaming
installation and maintenance of electronic systems (machines, appliances) in industrial areas.
-installation and maintenance of automated systems , e.g. in domotics installations.

■ Timetables

■ Credits, teaching activities and hours per week

The academic year is divided in course units, say "courses". The relative importance of such a course units is expressed by means of credits. An entire academic year counts 60 credits.

One hour is 60 minutes per week during a full academic year. An academic year counts 26 weeks of lessons, i.e. without the exams, study or holiday periods.

Bachelor of Electronics - ICT: electronics

1st year Bachelor Electronics-ICT, option Electronics

<i>Course unit</i>	<i>credits</i>
<i>Computer Technology</i>	<i>6</i>
<i>Digital systems 1</i>	<i>5</i>
<i>Digital systems 1 lab</i>	<i>3</i>
<i>Microcontrollers 1</i>	<i>4</i>
<i>Drawing AutoCAD</i>	<i>3</i>
<i>Science 1</i>	<i>4</i>
<i>Computer science 1</i>	<i>6</i>
<i>Multimedia 1</i>	<i>5</i>
<i>Electronics 1</i>	<i>5</i>
<i>Electronics Lab</i>	<i>3</i>
<i>Electricity</i>	<i>5</i>
<i>Electricity Lab</i>	<i>4</i>
<i>Mathematics</i>	<i>4</i>
<i>English</i>	<i>3</i>
<i>Total</i>	<i>60</i>

2nd year Bachelor Electronics-ICT option Electronics

<i>Course unit</i>	<i>credits</i>
<i>Microcontrollers 2</i>	<i>7</i>
<i>Networks</i>	<i>4</i>
<i>Digital systems 2</i>	<i>4</i>
<i>Digital systems 2 Lab</i>	<i>5</i>
<i>Electronics 2</i>	<i>4</i>
<i>Electronics 2 Lab</i>	<i>6</i>
<i>Telecommunication 1</i>	<i>4</i>
<i>Communicative skills- French</i>	<i>3</i>
<i>Computer science 2 Java</i>	<i>4</i>
<i>Computer science 3 Visual Basic</i>	<i>4</i>
<i>Automation</i>	<i>4</i>
<i>PLC</i>	<i>3</i>
<i>Mathematics 2</i>	<i>4</i>
<i>Labview</i>	<i>4</i>
<i>Total</i>	<i>60</i>

Bachelor of Electronics - ICT : electronics

3rd year Electrotechniques, option Electronics

<i>course unit</i>	<i>credits</i>
<i>Business management and organisation</i>	<i>6</i>
<i>Data communication</i>	<i>3</i>
<i>Data communication Lab</i>	<i>3</i>
<i>Telecommunication</i>	<i>3</i>
<i>Domotics</i>	<i>6</i>

<i>Power electronics</i>	3
<i>Electronics 3</i>	5
<i>Electronics 3 lab</i>	4
<i>Designing</i>	3
<i>Data acquisition</i>	3
<i>PLC</i>	3
<i>Perspectives on religion and meaning</i>	3
<i>Practice periods and thesis</i>	15
<i>Total</i>	60

bachelor of Electronics - ICT : ICT

1st year Bachelor Electronics-ICT, option ICT

<i>Course unit</i>	<i>credits</i>
<i>Computer Technology</i>	6
<i>Digital systems 1</i>	5
<i>Digital systems 1 lab</i>	3
<i>Microcontrollers 1</i>	4
<i>Drawing AutoCAD</i>	3
<i>Science 1</i>	4
<i>Computer science 1</i>	6
<i>Networks 1</i>	4
<i>Multimedia</i>	5
<i>Electronics 1</i>	5
<i>Electronics Lab</i>	3
<i>Electricity</i>	5
<i>Mathematics</i>	4
<i>English</i>	3
<i>Total</i>	60

Bachelor of Electronics - ICT : ICT

2nd year Bachelor Electronics-ICT, option ICT

<i>course unit</i>	<i>credits</i>
<i>Microcontrollers 2</i>	7
<i>Digital systems 2</i>	4
<i>Digital systems 2 Lab</i>	5
<i>Electronics 2</i>	4
<i>Multimedia</i>	4
<i>Communicative skills-French</i>	3
<i>Computer science 2 Visual Basic</i>	4
<i>Computer science 3 Java</i>	4
<i>Electronics 2 Lab</i>	3
<i>Networks 2</i>	8
<i>Operating systems 1</i>	6
<i>Databases</i>	4
<i>Mathematics 2</i>	4
<i>Total</i>	60

Bachelor of Electronics - ICT : ICT
3rd year Electrotechniques, option ICT

<i>Course unit</i>	<i>credits</i>
<i>Business management and organisation</i>	6
<i>Operation systems Window server</i>	3
<i>Operating systems 1 lab</i>	3
<i>Multimedia</i>	3
<i>Networks</i>	3
<i>Network Security</i>	3
<i>Exchange/ISA server</i>	3
<i>Databases</i>	3
<i>Data communication</i>	3
<i>Data communication lab</i>	3
<i>Perspectives on religion and meaning</i>	3
<i>Computer science 5 Java</i>	3
<i>Computer science 4 Unix/Linux</i>	3
<i>Project VOIP</i>	3
<i>Practice periods and thesis</i>	15
<i>Total</i>	60

■ Bachelor of logistics

■ What is logistics?

Logistics is the method of quickly and efficiently processing goods in a company and getting them to the customer with the shortest possible storage time and avoiding environmental damage, danger, errors and mistakes. As companies' production costs – labour and raw materials – can hardly be lowered now, competition has moved to a different field: managing the transit of goods, raw materials, information and money through the company so as to cut costs and serve the customer better. Graduates find jobs in stock management, purchase, storage, distribution, warehousing, customer service, safety management, production planning and quality management.

■ Bachelor of Logistics

Logistics is a major new trend in industry today, and before starting the logistics bachelor training we visited fellow institutions abroad. It was at the request of industry that we started this Bachelor training in 1987, and we have adjusted it to the requirements of the market ever since.

■ Wide

Bachelors of Logistics have jobs in which they apply their theoretical and practical backgrounds to all sorts of company activities. Besides being specialists in logistics, graduates must have technological, economic and communicative skills, organisational and planning skills, and a sense of quality, safety and environmental care. They must be able to think analytically, but also to communicate with departments throughout the company.

That is why general management subjects and languages take up 23 per cent of the curriculum, with the subjects Economics, Finance, Marketing, Industrial Marketing, General Management, Communication and management Skills and French, English and German. In language classes we focus on functional usage in logistics situations.

■ Project work

● *K&S Ltd.*

In different subjects we have built in a common element: K&S Ltd. We start a small company manufacturing furniture. As a logistics specialist-to-be, you will be asked to organise the company logistically. Applying your theoretical knowledge of different subjects to this project, you will see the connection between them.

In logistics subjects we discuss the logistic organisation and management of K&S Ltd. How do we arrange the warehouse? How do we plan and manage production? What is the fastest way for trucks to reach customers?

In Marketing you learn how to explore the market through a market survey. Which bar codes do we use? How do we scan them? This is a question for the course of Identification of Goods. Are the boxes used for furniture transport strong enough?

Materials and Packing Sciences give you the answer.

In Mechanics you learn to calculate how strong the scaffolding and floors of the company buildings need to be. With our production plant in Charleroi we communicate in French, whereas ordering wood in Sweden is done in English. Computer Science teaches us how to manage our data in a database and how to process them automatically into reports, using statistics techniques. Ergonomics focuses on a healthy layout, and Electricity on the right lighting. As every company has its quality department, Quality Control is necessary too. In Environmental Care we investigate the environmental requirements our company must meet.

■ Project weeks

In the second and third years all lessons and lab sessions are cancelled for one week, in order to explore 'the real world' of industry. We visit companies for which logistics, quality, environment and safety are an every-day routine. In business games you learn to work and solve problems in a team. Guest speakers give presentations about typical subjects of the field.

■ What can I do with it?

■ General

Almost all graduates find jobs in industry. With a special teacher's diploma education is an option too.

What follows is a survey of typical positions for our graduates.

● *Purchasing*

The Purchasing Manager is in charge of the purchase of materials and services, taking into account aspects like cost, life span, incoming orders, technical quality requirements, delivery times, availability and cost of internal and external transport.

● *Production Manager*

The Production Manager is in charge of a timely and accurate production output, i.e. one that meets all specific order requirements. The job must take into account aspects such as available capacity, production layout, required delivery time, production system characteristics, technical quality requirements and availability of internal and external transport.

🔗 *Stocks and Warehouse Manager*

The Stocks and Warehouse Manager is in charge of correct and smooth stock, storage and output of incoming and outgoing goods and materials. Important aspects of the job are, amongst others, conditioning demands, connections with internal and external transport, storage capacity and demand, production rate, technical storage possibilities, product identification.

🔗 *Distribution Manager*

The Distribution Manager is in charge of the outward distribution of (mainly finished) goods and focuses on required delivery times, availability and cost of internal and external transport, packing requirements, technical transport possibilities.

Each of the above-mentioned graduates needs competencies to manage:

- ▶ the comprehensive logistics chain (cost and outsourcing)
- ▶ care of quality, safety and the environment, and the influence of parameters such as law, internal and external quality demands, human resources and social aspects of management
- ▶ strategic and tactical management skills.

📌 *Examples*

A few examples of jobs held by graduates of ours:

- ▶ Production Supervisor: planning and managing a production department, checking internal stocks, purchasing;
- ▶ Transport Planner: daily planning of transport and deliveries, checking on departure and arrival times, maintaining contacts with transport companies;
- ▶ Warehouse Assistant: organising forklift truck traffic and contributing to warehouse quality standard;
- ▶ Purchase manager: buying raw materials and materials, stock management, organising and assessing contacts with suppliers;
- ▶ Launcher: starting and following up client orders, maintain contacts with the purchase department and affiliated companies, reporting on promises to deliver;
- ▶ Junior Consulting Assistant: advising companies on logistics issues, especially concerning warehouse layout, product flows, handling movements etc.

📌 *Timetables*

📌 *Credits, teaching activities and hours per week*

The academic year is divided in course units, say "courses". The relative importance of such a course units is expressed by means of credits. An entire academic year counts 60 credits.

One hour is 60 minutes per week during a full academic year. An academic year counts 26 weeks of lessons, i.e. without the exams, study or holiday periods.

1st year Bachelor of Logistics

<i>course unit</i>	<i>credits</i>
<i>Dangerous Products</i>	4
<i>Communicative skills</i>	4
<i>Economics</i>	4
<i>Transport economy</i>	4
<i>E-business</i>	7
<i>Introduction in logistics</i>	6

<i>Safety</i>	7
<i>Supply control</i>	4
<i>Mathematics</i>	4
<i>English</i>	4
<i>Materials handling</i>	7
<i>Warehouse management</i>	4
<i>Total</i>	60

2nd year Bachelor of Logistics

<i>course unit</i>	<i>credits</i>
<i>Automation</i>	4
<i>Marketing</i>	5
<i>Communicative skills-German</i>	4
<i>Logistic Consulting</i>	5
<i>Computer Science- E-business</i>	7
<i>Quality</i>	5
<i>Logistic software</i>	5
<i>Logistic management</i>	6
<i>Environment</i>	5
<i>Production Logistics</i>	5
<i>Statistics</i>	4
<i>Total</i>	60

3rd year Bachelor of Logistics

<i>course unit</i>	<i>credits</i>
<i>Automatic Transport</i>	4
<i>Business management</i>	4
<i>Communicative skills-French</i>	4
<i>Perspectives on religion and meaning</i>	3
<i>HACCP</i>	4
<i>Computer Science</i>	4
<i>Human resources management</i>	5
<i>Materials and packaging science</i>	4
<i>Financial Management</i>	4
<i>Forwarding</i>	4
<i>Distribution and transport management</i>	5
<i>Practice periods and thesis</i>	15
<i>Total</i>	60

■ WORK PLACEMENT AND FINAL WORK

In the third year students go on a work placement for 13 weeks to work on a project. Afterwards they write a thesis about it and at the end of the year they present their work to a professional jury.

From the beginning the student receives help from a monitor inside the company and from a college tutor. The college tutor helps the student to prepare for the presentation.

Together with the industry

In Electrotechnology we make sure that we teach you the latest technology and systems, and send you off into the job market with recognised certificates that command respect. Such certificates are additional assets on top of your diploma; most companies will be amazed you have already obtained them during your college studies.

EIB

EIBA, an international umbrella organisation for EIB (domotic devices) manufacturers, certifies third-year students who have succeeded the EIBA exam. Teachers of this programme give the exam and co-ordinate with EIBA. This certificate proves that you can install and program domotic systems on your own in the professional world according to the EIB standard, and therefore may use the appropriate EIB logo. In the lessons of domotics the entire contents will prepare you for the successful completion of this exam.

VCA study for managers

In order to limit the number of accidents in the workplace it is important to have more knowledge of how accidents occur and the possibilities of reducing the risk of accidents.

More and more, safety, quality and environment are regarded in the same context. In this course we will start with general notions and accident costs. Regulations (ARAB, Codex, etc.), various obligations and guidelines will also be covered.

To start certain projects various permits are needed, while a risk analysis is even obligatory. Various proposals for reducing risks and damages and arriving at safety management systems will be explained.

With the following topics our students acquire a higher knowledge of safety and risk reduction policy that every business wants: fire permits, security against accidents, climate, air conditions, ergonomics, work hygiene, explosion safety, hazardous products, welding, health, fire risks, etc.

Besides numerous examples from the real world, students will also be taught to prepare for an exam that they can take at the Provinciaal Veiligheidsinstituut (= Safety Institute of the Province) (PVI). If they pass, they will receive the 'Veiligheid voor Operationele Leidinggevenden (= Safety for Operational Managers)- VCA' certificate.

• Further studies

As a bachelor of Electromechanics, Electronics-ICT, Logistics or Electrotechnology you will be able to obtain the degree of Master of Applied Engineering (industrial engineer) via a one-year bridge programme. Please contact us for further information.

• Your job is our job

Whenever your job is concerned, we are alert.

As companies and graduates must be able to connect easily, our job service mediates constantly between the two and provides the required data at both ends. The Campus Job Fair in March is an opportunity for graduates to directly talk to dozens of company representatives. Job interview simulations are organised too, with immediate feedback. The Management Skills course in the last year teaches the student the tricks of the application letter trade, CV, e-mails, interviews etc.

■ ASSESSMENT

• Continuous assessment

For certain subject (especially labs) students are tested and assessed at regular intervals. These tests are part of the student's final mark.

• Exams: four plus one

The academic year consists of two terms, each of which has two assessments periods. That makes four in total: November, January, March/April and June. In August and September students who failed in June get a second chance. Before each exam period students have a number of days off to prepare.

Students automatically succeed with 10 marks out of 20 for every subject. In all other cases the examination board decides whether students succeed or fail.

• Second examination period

Students who fail for their June exams have to resit the subjects for which they had less than 10 out of 20. If students have to redo their year, they are exempted from those subjects they got 10 out of 20 for.

• Individual curriculum

Students who failed and have exemptions can add courses of the next year to their programme. In total this programme must not exceed 60 credits.

• Reduced periods of study – Exemptions

On enrolment students can apply for exemptions from subjects they have taken in other higher education options. In certain cases they can enter in a second year, or be allowed to add courses of a later year to their individual curricula on the basis of previously acquired competencies.

■ STUDYING ABROAD

Your work placement in Finland, an extra year in Germany, a course in The Netherlands: we arrange them for you. We look across the borders, and are actively involved in international exchange programmes.

For a work placement abroad, students qualify for an Erasmus or Leonardo grant. Condition is that your work placement takes place within Europe and lasts at least 13 weeks.

Students who want to do a work placement or study at a university abroad should contact the international officer of the department as soon as possible. More information is also available during the campus *European Days* in December and April. In the

multimedia centre, there is the European Documentation Centre, the only one in the Kempen region.

■ HOW GOOD ARE WE?

Making the right choice of study is vital for any student. It is our job to offer you a modern, professional and pleasant education, but eventually the choice is yours. This is how we see education.

■ Practical

We offer training that focuses on practical applications. No theory for theory's sake: the bulk of the study programme is labs and exercises. And there is little distance between students and teachers: informal contact is one of the typical characteristics of life in our department and on our campus.

■ Innovative

Practice is the rule of the house. On the campus we have founded small companies and non-profit organisations.

Our teachers are in permanent contact with the real world. We organise courses and workshops for professionals. We carry out studies and assignments for businesses and institutions. We expect our teachers to take courses and visit specialised fairs. We know exactly what the labour market wants because we are part of it.

You will find that out for yourself during the work placements, company visits, presentations and demonstrations we have in store for you.

■ Quality

🌱 *Our department has its own quality service.*

It helps teachers assess courses, work placements and student guidance, and keeps our training relevant and focused. Graduates and professionals are regularly asked for their opinions, as up-to-date courses are our first aim. The use of multimedia and new teaching techniques keep the transfer of knowledge efficient. Course contents are constantly compared to avoid overlap.

Students are constantly asked for their opinion, too.

We use the EFQM model, a European standard for quality improvement in industry and the services sector, of which we developed a special version for higher education, the TRIS model.

■ Surveys

We regularly conduct surveys to check our quality standards. A few examples:

🌱 *Motivation analysis*

We ask all new students why they have chosen our department. We want to know what students find important in their education and in the university college, and we want to make these things our strengths.

🌱 *Satisfaction survey first-year students*

We ask first-year students how they liked our student guidance programme, and how it can be improved.

🌱 *Study time measuring*

We regularly measure how many hours students spend on lessons, examinations, study, assignments etc. We want to know if their efforts coincide with the credits given to the different subjects. We yearly analyse success rates, compare them to our study time

measuring results, and discuss the outcome with first-year students during the 'Who succeeds, who fails?' session.

• *Subject and teacher assessment*

Every other year we ask students to evaluate subjects and teachers. Consequently, teachers are given suggestions on how to further adapt their methods to students' needs.

• *Work placement supervisors*

Every year work placement supervisors from industry are asked to suggest improvements for our training.

• *Graduates survey*

After two or five years, graduates are sent an extensive questionnaire with questions about their jobs, applications, the relevance of our training to their jobs, suggestions for improvements, their salaries etc. This way we can see if we are still in touch with the labour market, and we take action when and where necessary.

■ Information and enrolments

■ Information

Several times a year we organise an information day for students from secondary education. We also extend a warm welcome to you at our open day, which is traditionally held on 1 May. Each time you can take a look at the classrooms and the laboratories, and you will get advice and information concerning the various types of education offered at the campus Geel of the Katholieke Hogeschool Kempen.

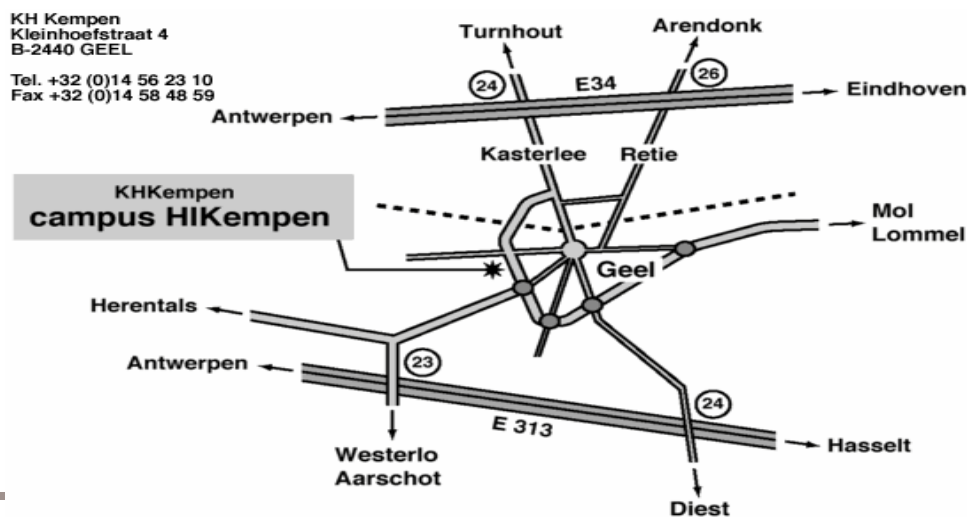
Please check our website for exact dates of information days and enrolments.

■ Location and accessibility

The campus in Geel of the Katholieke Hogeschool Kempen is easy to find near the ring road of Geel. You can also reach the campus easily by train and bus. Some bus routes stop by the campus and there are buses connecting the campus and the railway station of Geel. You can get exact information including timetables at the reception.

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Home page : www.khk.be



Zelfde als alle andere brochures (Social Work brochure is volledig – kan van hieruit overgenomen worden)