Smart Solutions Semester

FALL 2023 - 2024

Participating study programmes

Introduction

During the Smart Solutions Semester, interdisciplinary projects are carried out within a Learning Community. The purpose of a Learning Community is to systematically develop and leverage knowledge around relevant themes by sustainably connecting education, research, and professional practice.

In this document, you will find more information about what students from the participating programmes can contribute to your issue. Also, there is an explanation for each Learning Community about the content that is emphasized.

Which study programmes are participating?

- Applied Computer Science (TI)
- Applied Physics (TN)
- Archaeology (ARC)
- Biology & Medical Laboratory Research (BML)
- Business Management Studies (BDK)
- Chemical Engineering (CT)
- Chemistry (C)
- Creative Business (CB)
- Electrical and Electronic Engineering (E)
- Entrepreneurship and Retail Management (ORM)
- Facility Management (FM)
- Fashion & Textile Technologies (FTT)

- Forensic Science (FO)
- Hotel Management (HM)
- Health & Applied Technology (GT)
- Industrial Design Engineering (IPO)
- Industrial Engineering & Management (TBK)
- Information & Communication Technology (I)
- International Business (IB)
- Marketing (CE)
- Mechanical Engineering (WTB)
- Mechatronics (MT)
- Nursing (VPK)
- Tourism Management (TM)

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Learning Community	Content	Study programmes
Technology, health and care	In this community, we work on building bridges between end-users of technology, care and welfare organizations, governments, companies and knowledge institutions. The aim of this community is to achieve successful transformation and implementation of technology in the care and welfare domains. In doing so, we look at market-ready technologies that emphasize working and living. To this end, we use action research and co-creation so that the citizen, professional or client using technology is central.	CB/FTT/GT/VPK/CE
Future of our care	In this community, we focus on the care of the future with the themes of prevention, positive health and planetary health. We will explore what the care of the future looks like. How can people stay in good health for as long as possible, where health is not about being sick or not being sick but looks at the individual and their well-being in an ecosystem.	FTT/MT/TN/BML/FO/GT/VPK
Design to meet and move	Care is increasingly moving from institutions with professionals to neighbourhoods and citizens. We expect people to live longer at home and live healthier lives, but that does not happen overnight. This community brings together projects that focus on using and studying the living environment to promote citizens' health. Projects take place in the neighbourhood and focus, among other things, on teachable moments: moments in life when you are more open to changing behaviour.	CB/GT/VPK/IB/ORM/FM/HM
Personalised care	There are several ways to make care inclusive and personalized. For instance, (big) data can be a means to create tailor-made care pathways for a specific carer. This requires us professionals to keep looking at the relationship between care recipient and care provider but also to work together interprofessionally in an appropriate way. This community has room for projects that deal with personalized care and the collaboration needed to deliver good care.	CB/VPK/FM/HM/TM
Everything Ethics	Care and welfare are undergoing significant change. For example, nurses not only have to provide care, they also have to be able to use care robots and implement AI. Welfare organizations like housing are faced with difficult issues: are we going to make them more sustainable and cost our tenants, or do we wait until the municipality can step in? In this community, we research everything to do with ethics in care and welfare. We ask difficult (research) questions and put our fingers on sore spots. If you also have an ethical issue, we invite you to join us.	CB/VPK/IB/FM/HM/TM
MediaLab: Media & Health	Within the Media & Health theme of the Medialab, students will work on issues involving health and well-being. They research such a health issue and think about how new media can be part of the solution. To give an example, last semester one of the issues was about student wellbeing. A podcast series was eventually developed for the Saxion student psychologists in support of fear of failure and additional stressors in order to help students cope better with fear of failure and hopefully, in addition, slightly reduce the workload of the student psychologists.	CB/GT/VPK/BDK
MediaLab: Media & Community	Within the Media & Community theme of the Medialab, students will work on issues in which community formation and connection are central. They will research the environment in which the issue takes place and how new media can add value to initiate or strengthen the connection and community formation.	CB/I/BDK/CE/ORM/FM/HM

Learning Community	Content	Study programmes
MediaLab: Media & Education	Within the Media & Education theme of the Medialab, students work on issues involving education, training or formation. They will research the environment in which the issue takes place and how new media can add value here to help your target group learn best.	CB/ARC/BDK/CE/ ORM/FM/HM/TM
Smart Energy Transition Technical Solutions	Design the future of energy! A Learning Community for students who are fascinated by the power of innovation in energy and eager to contribute to a more sustainable world. In this branch, students work at the forefront of technological progress. From developing pioneering solutions for renewable energy sources to designing smart grids for efficient energy use - here they will have the chance to turn your ideas into reality. Students will broaden their knowledge, collaborate with industry experts and make an impact in one of the most pressing challenges of our time.	MT/WTB/E/TN IPO/BDK/IB/ORM/ TBK
Smart Energy Transition Business Solutions	Build a sustainable future! A Learning Community for future-oriented thinkers with passion for sustainability and business. Within Smart Energy Transition - business solutions students will learn how to bridge the gap between innovation and the market. This branch is all about understanding the economic, policy and commercial aspects of energy transition. Students will have the opportunity to develop business models that promote sustainable energy, formulate policy proposals that have impact and devise strategies to market sustainable energy.	CE/TBK/BDK/FM/ HM
Safety & Digitalisation	Discover the Future of Security in the Digital World! Students can contribute to protecting data in our digital society. In the Learning Community Safety & Digitalisation students will dive into cybersecurity and data protection. They will collaborate with experts, develop solutions to cyber threats and become a key player in securing our digital future.	VPK/TBK/BDK/ ORM/FM
Innovation of Infrastructure and Construction for a Circular Economy	The current and future societal challenges within the redesign of our living environment are enormous. Indeed, we are on the eve of the transition to a circular economy, in which we no longer use primary raw materials and no longer emit CO_2. Nationally, it has been agreed that by 2050 these goals must be achieved, and by 50% by 2030. In this Learning Community students can contribute to a circular economy in the field of infrastructure and construction.	WTB/TBK/ BDK/IB/CE
Grounded	Grounded aims to develop data, methods and technologies for a coherent approach to living environments, with a specific focus on the role of soil and subsoil. Here, the focus is not only on sensors, data, analysis and visualisation, but also on societal relevance. How can we visualise or investigate everything that is in the soil? This could involve pipes, archaeology, crimes, or infrastructure.	I/TI/MT/WTB/ FO/ARC/TBK
Biomass and Biobased Product Development	The studies within this Learning Community are about, what to do with biomass? That could be waste processing, such as composting and fermentation. We also talk about biomaterials that are increasingly being used. Wood is of course the best-known example, but there are also more possibilities, for example a composite of which part is biobased. Recovering fibres from waste water may also be among the options. By the way, ever heard of biocoating?	WTB/BML/C/CT/T BK/CE

Learning Community	Content	Study programmes
Sustainable buildings	Building management often has to deal with rapidly recurring investments, which often have to be written off at a rapid pace. There is a growing awareness of sustainable (circular) developments and applications. Sustainable construction transition is driven by new insights into the circular economy. In the case of non-residential buildings, the quality of materials is also very important in order to limit warranty and liability risks.	I/TBK/BDK/FM/ HM/TM
Livable City Deventer	How can we make Deventer a city that is not only sustainable, but also contributes to the health and well-being of its inhabitants (e.g. through spatial interventions, getting people to move, creating pleasant places). And this in cooperation with entrepreneurs, residents, government and many other parties in Deventer. Together we make the city.	CB/VPK/ARC/BD K/CE/ORM/FM/H M/ TM
Smart Hospitality	Smart Hospitality involves application in which the use of, in particular, Smart Technology can add value. In the process of concept development, smartness is central: seeking connection in a dynamic platform between various stakeholders, from organization to guest, for information exchange and decision-making.	I/GT/VPK/BDK/ IB/CE/ORM/FM/H M/TM
Better places to live and visit	The sustainable destination is able to move with a constantly changing world, is able to reconcile the public interest and the individual interest, and creates a positive footprint rather than damage with its activities.	ARC/BDK/IB/CE/ ORM/TM/HM
Application of AI / process optimalisation in business	The learning community dedicated to the application of AI and process automation in business is a dynamic hub for students who believe in the opportunities of AI and automation of processes for companies and organizations. Together with specialists, students can learn more about technological solutions to smoothen business processes.	TI/TBK/BDK/IB/C E/ORM/FM/TM/I
Organizing multiple value creation in circular economy	This learning community on multiple value creation in the circular economy is a vibrant and collaborative space where students can learn more about circular economy, what it means for companies/organizations and what the benefits and challenges are. Students will actively work on identifying options to change aspects from regular business models to circular solutions.	GT/VPK/TBK/ BDK/IB/HM/TM
Smart materials	Plastics, composites and natural materials play an indispensable role in our daily lives, with smart features such as strength, bacteria resistance and technological gadgets. Smart structures make materials both strong and light, while eco-friendly bio-based raw materials contribute to sustainability in construction. Functional Biomaterials explores improvements for biological building materials, such as wood, with a focus on fire resistance, longevity, maintenance reduction and environmental benefits for various applications such as construction, interiors, clothing and vehicle components.	FTT/MT/WTB/E/T N/IPO/C/CT/TBK/ CE

Learning Community	Content	Study programmes
Water Technology	Water Technology is a critical global challenge, emphasizing the need for clean water for all. The impact of water quality and availability on life, environment, and health is immense, with unbalanced water handling practices worldwide. The International Water Technology (IWT) research group focuses on the Water-Energy-Food-Environment nexus, addressing issues such as pollution, climate change, and unbalanced water usage. Collaboration on a global scale is essential, involving expertise in water treatment, monitoring, data science, circular business models, and communication to create tangible impact and ensure a sustainable future.	TI/MT/WTB/E/IPO/BML/C/FO/TBK
Robotics and sensors	Robotics and sensors are a rapidly evolving theme, with assignments from lectorates such as Nanobio, Nanophysics and Smart Mechatronics and Robotics. Robotics development is expanding to various applications, such as drones for inspection, parcel delivery, firefighting, wind turbine maintenance, autonomous ground robots in industries, automation of manufacturing processes, and robot dogs for police reconnaissance. Sensor technology plays a crucial role, with applications such as thermal cameras for fire detection, vision with machine learning for classification, and sensor fusion for advanced object detection. High-tech assignments offer the chance to contribute to these innovations and invent new applications.	TI/MT/WTB/E/TN/IPO/BML/C/FO/TBK
Forensic support & prevention	The Learning Community Forensic support & prevention aims to contribute substantially to developments and innovations within the forensic field. Assignments range from developing or further developing new sensor techniques to conducting partial investigations within a larger project. Students come into contact with key players within the forensic field and learn the practice of a forensic investigator or innovator.	FTT/MT/TN/BML/C/FO/VPK/ARC
Business Models	This Learning Community includes projects in which a client wants to optimize or create (multiple) value for a specific target group. Students will work on (re)considering the value proposition as well as the target group definition, including all related aspects.	VPK/BDK/CE/ORM/FM/HM/TM/IB
Social added value of Retail	Within the Learning Community 'Social added value of Retail', we explore exciting issues related to value(n) driven retail to realize (technological) innovation and impact in the region. Examples of issues include future-proofing retail(er), innovations in (physical) retail, professionalisation of circular value chains and advanced use of data and technology.	FTT/I/TI/MT/IPO/TBK/BDK/IB/CE/ORM/HM/TM
Stories and images of the Past	The past is full of stories and images. These stories can not only teach us something about life in the past, but they can also inspire tourism, spatial planning or teach us lessons about the future. Students in this Learning Community will contribute to sharing stories or creating visualisations about or from the past.	CB/VPK/ARC/HM/TM

Applied Computer Science

Coordinator
Clemens Kienhuis (c.b.m.kienhuis@saxion.nl)

About Applied Computer Science
Applied Computer Science students are software engineers with knowledge of hardware. They can programme well in a structured manner using a range of languages in addition to good electronic engineering fundamentals: they can design and build simple circuits and can conduct measurements. In addition, they have solid mathematical knowledge to be able to do digital signal processing or control systems, for example.

Applied Computer Science in the Smart Solutions Semester
Areas of application are: robotics, embedded systems, Internet of Things, networking and operating systems. In other words, all equipment and systems where software is involved.

Applied Physics

Coordinator
Clemens Kienhuis (c.b.m.kienhuis@saxion.nl)

About Applied Physics
Applied Physics is a programme in which we train students to be physical researchers in the broadest sense of the word. The subject-related competences focussed on are:

- Experimentation, both construction and development of a measurement setup as well as performing measurements and processing data;

- Modelling.

Applied Physics in the Smart Solutions Semester
In general, Applied Physics students can contribute the following to projects:

- Finding and implementing different sensors;

- setting up methods of measurement;

- Measuring and processing data;

- Provide a physically correct basis to simulations;

- Model physical properties

Archaeology

Coordinator
Ronald Visser (r.m.visser@saxion.nl)

About archaeology
The archaeology degree programme is unique. We are the only non research university archaeology programme in the Netherlands, attracting students from throughout the country. A (bachelor) archaeologist is a practical researcher, telling the story of the past based on archaeological finds and traces in the landscape. Archaeological fieldwork forms the core of the degree programme. Digital work is a spearhead within the programme. The attention to (innovative) digital techniques is in line with developments in the professional field and the technical nature of the programme. Examples include drones, GIS, databases, geophysical measurement techniques, (close range) remote sensing and surveying techniques. In addition, the program focuses on the (digital) presentation and visualisation (for example with 2D and 3D reconstructions or scans) of heritage for both the public and other workers in the profession. Conservation and management of archeology and heritage are anchored in policy and legislation but can also provide inspiration for spatial plans and issues.

Archaeology in the Smart Solutions Semester
Archaeology students can contribute to the areas of:

- Soil and subsoil;
- Gaming and Heritage;
- Advanced Forensic Technology;
- Sustainable Development
- Heritage and tourism;
- Regional development;
- Geographic Information (GIS);
- Heritage and history in education;
- Visualisation and presentation of heritage

Biology & Medical Laboratory Research

Coordinator
Lars Koens (l.a.koens@saxion.nl)

About Biology & Medical Laboratory Research
In the Biology and Medical Laboratory Research program, students learn to develop into professionals who independently or in teams conduct research to solve problems in the biological and/or medical field. Subject areas include:

- Research: The focus here is on carrying out and developing innovative techniques within healthcare.

- Diagnostics: the student focuses on the research to make a diagnosis or to follow the course of a therapy.

- Nanotechnology this relatively young field of study forms a bridge between physics, nano-physics, and medical research.

Biology & Medical Laboratory Research in the Smart Solutions Semester
In general terms, the students can contribute to projects related to:

- Healthcare services

- Food industry;

- Epidemiology;

- Forensic Science;

- Biotechnology;

- Antibacterial materials.

Business management studies

Coordinator
Guus Zwerink (g.zwerink@saxion.nl)

About Business management studies
The Business management studies programme teaches students to look at organisations with a broad vision, continuously with improvement in mind. The learn how companies are composed and how business management issues can be solved by looking at different fields of study. Through good analyses and creative ideas they learn how organisations can stay ahead of the competition. Business experts have an entrepreneurial attitude!

Business Administration in the Smart Solutions Semester
Business Administration students know how to market an innovation creatively and successfully. Added value lies, for example, in the field of market research, finance and legal analysis. Business Administration students understand the dynamics in an organisation (or project team) and can anticipate this. They make connections between technical innovation, the organization itself (HR, quality assurance), and commerce. They can also contribute in the field of project management, process analysis and operations management.

Chemical Engineering

Coordinator
Lars Koens (l.a.koens@saxion.nl)

About Chemical Engineering
Chemical Engineering students learn to develop as professionals who carry out research and/ or develop products/processes in the field of Chemical Engineering. Areas include:
- Process technology: the application and improvement of heat and mass transfer processes and reactors;
- Materials technology: the production and development of (new) materials, finding of new applications and the combination of material properties is composites;
- Water and food technology: the purification and preparation of water, the large-scale production of food (supplements);
- Design: the development of industrial processes by efficient switching of process equipment or integrating processes.

Chemical Engineering in the Smart Solutions Semester
students can contribute to projects related to:
- (re-) use of materials and raw materials;
- Water and food industry;
- Polymers/ coatings/ textiles;
- Membranes and sensors for conducting water research;

- Smart materials;
- Nanotechnology (micro-processes);
- Industrial safety.

Chemistry

Coordinator
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About Chemistry
Chemistry students learn to develop as reflective professionals who can conduct research both independently or in a team to solve problems in the field of chemistry. Subject areas include:

- Analytic Chemistry: the emphasis here is on developing methods for conducting analyses with (specialised) equipment.
- Organic Chemistry: the synthesis and analysis of organic compounds such as medicines, flavourings, and more environmentally friendly materials.
- Polymer Chemistry: the synthesis of plastics (coatings, resins, additives, 3D printing) or (bio) plastics.
- Physical Chemistry: the application of physical methods to the field of Chemistry to understand and describe properties of substances and their changes.

Chemistry in the Smart Solutions Semester
In general terms, the students can contribute to projects related to:

- Pharmaceutical industry;
- Food industry;
- Polymers/ coatings;
- Forensic Science;
- Membranes and sensors for water research;
- Smart materials;
- Nanotechnology (modification of nano-particles, sensors)

Creative Business

Coordinator
Bob Dickhoff (b.w.dickhoff@saxion.nl)

About Creative Business
At Creative Business - Media, Information & Communication we are trained to be creative concept developers who understand the playing field between client, target group and media platforms, and can convert those concepts into media design and production.

Creative Business in the Smart Solutions Semester

Things that a student can contribute to in a project:

- Layout;

- Copywriting;

- Target group/ user research;

- Marketing analysis and planning;

- Tutorials.

Specialisations:

- Educational media concepts;

- Journalism and information;

- Media formats and direction;

 - Creative marketing concepts.

Electrical and Electronic Engineering

Coordinator
Clemens Kienhuis (c.b.m.kienhuis@saxion.nl)

About Electrical and Electronic Engineering
Electrical and Electronic Engineering students are equipped with a broad foundational knowledge of Engineering. They can carry out research and create designs to solve a wide range of engineering problems. There are two Specialisations:

- Information Engineering (EIE);

- Electrical Power and Automation (EPA).

Electrical and Electronic Engineering in the Smart Solutions Semester
EIE students are specialised in
- PCB design
- embedded systems
- micro-controllers.

EPA students work with
- PLC's
- analogue electronics
- related power issues

Students of both specialisations can translate a list of customer requirements into a real end product.

Entrepreneurship & Retail Management

Coordinator

Sandra ter Weele (s.e.terweele@saxion.nl)

About Entrepreneurship & Retail Management (O&RM)

O&RM trains the entrepreneur who connects social needs and technological innovations to create a new company.

Entrepreneurship & Retail Management in the Smart Solutions Semester

O&RM students can act as project leaders or take care of the communications for the entire project. Concrete assignments that can be carried out are as follows:

- draw up a marketing plan (or part of it; market, target group, competition or internal/ external analysis);

 - conduct desk research;

- write a business plan

- Come up with (innovative) potential products and how they can be brought to market;

- conduct feasibility studies;

- apply canvas model (also for the project itself);

- develop sales strategies for a product or service;

- set up purchasing;

- map out the customer journey;

- create personas.

Facility Management

Coordinator
Nicolette Bolté (n.y.bolte@saxion.nl)

About Facility Management
Facility management is the position that aims to provide employees within organisations with an integrated working environment, thus contributing to the success of the organisation. This includes aspects such as: housing, energy, sustainability, ICT support, cleaning, company catering and safety. The facility manager is responsible for an optimal working, living and care environment, both physically and virtually. It has a supporting role, just like HR, Finance, Marketing, ICT, Purchasing, Communication, etc.

Facility Management in the Smart Solutions Semester
On the one hand, students from this programme are generalists with a broad business knowledge. On the other hand, they have knowledge of supporting processes and services. In this, hospitality and customer orientation are always important principles. Above all, FM students are "thinkers with drive" and have experience in working in turbulent business environments and multi-disciplinary (project) teams. They can contribute to projects in the following areas: project management, thinking from a process perspective (optimisation), innovations from a customer perspective, conducting research into customer/user requirements.

Fashion and Textile Technologies

Coordinator
Evelyn Eijkelenkamp (e.f.w.eijkelenkamp@saxion.nl)

About Fashion and Textile Technologies
F&TT students purchase products and develop materials at production companies at home and abroad. Knowledge of trends combined with applications of new (sustainable) materials allow new innovative products. 'Is it possible to charge your smart phone with sports apparel?' and 'What material & fit requirements are there for firefighter clothing?" are examples of possible real-life questions that students have to deal with. Within the programme, 3 main themes are addressed; Material (technology), Collection (creativity) and Buying (commercial).

Fashion and Textile Technologies in the Smart Solutions Semester
F&TT students have a wide knowledge of the quality of (textile) materials and different clothing construction techniques and understand the specific steps and stakeholders in the clothing and textile industry supply chain. Students can easily cross over to applications of textiles in other sectors, e.g. care, construction or Forensic Science.

Forensic Science

Coordinator
Lars Koens (l.a.koens@saxion.nl)

About Forensic Science
Students carry out research from a natural sciences and technical perspective. This research is implemented in a variety of incidents. From criminal offenses, fire, accidents and fraud to damage due to failure of products, materials, constructions or human actions.

Forensic Science in the Smart Solutions Semester
Students can be deployed as damage specialists, fire safety advisers, traffic accident analysts, forensic specialists, digital investigators, fire researchers and policy officers.

Hotel Management

Coordinator
Nicolette Bolté (n.y.bolte@saxion.nl)

About Hotel Management
The programme offers up-to-date, innovative, representative and international education and research, with and for the international market, students and staff. The students learn to contribute to a world which, as a result, is becoming more hospitable. This ambition has three pillars.
1. Hospitality is at the heart of our education: it is therefore high on the educational and research agenda.
2. In our study programme, we lay strong foundations in business administration so that students learn the skills they need to operate in an ever-changing world.
3. The international and intercultural context is a prerequisite for the future 'manager in hospitality business' and therefore a basic ingredient of our programme.

Hotel Management in the Smart Solutions Semester
Our students can contribute in the area of:
- Strategy Development
- Creating and Maintaining competitive advantage in Hospitality
- People Management and Revenue Management
- Leadership and change management
- Acting Hospitably
- Operations Management

Health & Applied Technology

Coordinator
Tim Tijs (smartsolutionssemester.agz@saxion.nl)

About Health & Applied Technology
In the Health & Applied Technology study path, students are widely deployable as HBO Nurses, but also as a leaders in the field of innovative care technologies. The focus is on improving and/ or implementing technological innovations for the quality of care (for example, robotics, home automation, eHealth, serious games, medical technology). Students can be widely deployed as HBO Nurses in diverse professional fields such as:

- Mental healthcare;
- General healthcare service;

- Cognitive care;
- Care technology (including (further) development and evaluatoin).

- Social healthcare

Health & Applied Technology in the Smart Solutions Semester
Health & Applied Technology students can be deployed in projects where the focus is on:

- Providing integrated care in the physical, psychological, functional and social areas.

- Promoting and supporting the health of target groups (health promotion/ prevention).

- Bringing about (technological) innovations in healthcare (aimed at technology, students can delve deeper into, provide information and participate in improvement processes and implementation of medical technology).

- Carry out and apply research to improve the quality of care.

Industrial Design Engineering

Coordinator
Clemens Kienhuis (c.b.m.kienhuis@saxion.nl)

About Industrial Design Engineering
The Industrial Product Designer knows how to design an industrially manufactured product that meets the requirements of the customer. The focus is on research and design of user friendly consumer products and professional products, with a feel for ecologically acceptable solutions. The study is layered in six study areas, each of increasing complexity.
1) Design Engineering: integral approach to product development
2) Visualisation: Solid Works and drawing as a medium of communication
3) Materialisation: construction, material selection, process selection
4) Applied Physics: mechanical properties of materials, heat transfer, electronic devices
5) User-oriented research: ergonomics (usability studies), feasibility studies on the product market, innovation
6) Professional and personal development: self-reflecting practitioner, capacity to learn independently.

Industrial Design Engineering in the Smart Solutions Semester

the Smart Solutions Semester is aimed at research and co-operative design. The Industrial Design Engineer develops new innovative products through research, generation of ideas, concept development, materialisation and ultimately engineering. Usability, technical feasibility, economic feasibility and attractive design are the results of a typical development process.

Industrial Engineering & Management

Coordinator

Ronald Visser (r.m.visser@saxion.nl)

About Industrial Engineering & Management

The Industrial Engineering & Management programme is a special combination of technology and management, evaluated as one of the top education programmes by the Keuzegids HBO 2020 (study guide to university of applied sciences). Students learn to design company processes and improve and develop themselves widely. Experience is gained in, for example, the manufacturing industry, in the area of product development process, materials and fabrication and assembly techniques. Furthermore, there is attention for the management of operations and realisation of innovations.

Industrial Engineering & Management in the Smart Solutions Semester

Industrial Engineering & Management students are equipped with a product-oriented approach to research and management skills. They discover creative and innovative possibilities and develop these into advice. They also take into account how the various parties in the supply chain can be included in improvement processes.

Information & Communication Technology (HBO-ICT)

Coordinator
Floor Weijman (f.r.weijman@saxion.nl)

About HBO-ICT
HBO-ICT is a programme in which we train students to be IT professionals with one of the three following graduation profiles:

- Business: forms a link between companies and technology. Business students are prepared to provide organisational advice with knowledge of which IT solutions are possible and not possible.
- IT service management ensures that the IT infrastructure within organisations can be set up and maintained. Service Management students have both knowledge of the business side as well as the technical infrastructure.
- Software engineering: These are students who are trained to build complex software systems based on client wishes.

HBO-ICT in the Smart Solutions Semester
In general terms, the students can contribute the following to projects:

- Business: advise related to organisation and change processes within organisations.
- IT service management: advise, set up and maintain IT infrastructure (strong organisational component).
- Software engineering: construct desktop applications, web applications and mobile apps (among other things), both server-side as well as client-side.

International Business

Coordinator
Bart Minten (b.l.m.minten@saxion.nl)

About International Business
Our students are managers of the future in international organisations. With a strong focus on "conscious business" we teach our (international) students how they can make a difference in companies in the region and far beyond. From day one, students are exposed to company issues in small groups and learn how to provide companies with advice on how to grow and improve. Due to the international character and participation of students from an average of 35 countries, the programme is completely taught in English.

International Business in the Smart Solutions Semester
IB students have a broad range of interests and go on to work in both profit as well as non-profit organisations. Through their knowledge of language, cultural sensitivity and specialisations in the areas of entrepreneurship, technology and innovation, they can advise companies, integrally in the following domains which in addition to conscious business, are core to the programme:

- Marketing & Sales;

- Management & Organisation;

- Supply Chain Management;

- Finance & Accounting.

Marketing

Coordinator
Harold Plettenburg (h.h.w.plettenburg@saxion.nl)

About Marketing
Marketing (CE) students are trained to be marketing and sales specialists. They create value for customers in both physical and online environments. Commercial specialists always think from the customer's needs in relation to the values of their own organisation. On a strategic level, they create distinctive and meaningful strategies. On a tactical level, they know how to implement these strategies in the organisation and the market. On an operational level, they always act from the strategic point of view in order to create value for customers.

Marketing in the Smart Solutions Semester
Within the project, the CE students can contribute to realising ambitions and/or solving problems in the field of :

- creating and optimising business models
- better matching of products and services to customer needs
- answering omnichannel questions
- solving marketing communication and positioning issues
- achieving turnover and margin targets

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Mechanical Engineering

Coordinator

Clemens Kienhuis (c.b.m.kienhuis@saxion.nl)

About Mechanical Engineering

Students of the Mechanical Engineering programme (WB) know everything about the design, calculation, production and technical improvement of products, machines and constructions. This involves translating a customer question or problem into a technical solution. The mechanical engineers arrive at a final design of the product on the basis of concepts.

Mechanical Engineering in the Smart Solutions Semester

Students of the Mechanical Engineering (WB) programme can contribute to a Smart Solutions project in the field of optimising a design, producing it and choosing the right materials. Furthermore, the students can also participate in the automation of processes, the calculation of systems with flows (gases, liquids, heat transfer) or making a cost calculation of the product or construction.

Specialisations:

- Designing and conducting;

- Material Science;

- Thermal Mechanical Engineering;

- Automation.

Mechatronics

Coordinator
Clemens Kienhuis (c.b.m.kienhuis@saxion.nl)

About Mechatronics
How do you implement robots in operations? And how do you ensure that they can place things with extreme precision? This is what is addressed in the Mechatronics programme. Students go on a journey of discovery in the world of robots, smart tools and innovative machines.

Mechatronics in the Smart Solutions Semester
Students can set up and carry out the necessary research into the applicability of new technologies and transform it into a design (system engineering). They can set up and conduct testing regimes (for components to systems), in which the test systems are also realised to meet requirements. Students integrate partial systems from different disciplines to a working whole with the help of simulations and tests.

Nursing

Coordinator
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About Nursing
Nursing students are trained as HBO-nurses (level 6). Students can be widely deployed in diverse professional fields, such as:
- Mental healthcare;
- Cognitive care;
- Social healthcare
- General healthcare service;

Nursing in the Smart Solutions Semester
Nursing students can be deployed in projects where the focus is on:
- Providing integrated care in the physical, psychological, functional and social areas.
- Promoting and supporting the health of target groups (health promotion/ prevention).
- Innovations in healthcare/ welfare arrangements (focusing on technology is about finding and knowing, safe and skilled use, trust, telling and deepening);
- Carrying out and applying research to improve the quality of care.

Tournism Management

Coordinator
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About Tourism Management
At Tourism Management we train students to become flexible tourism professionals who create tourism, sustainable, responsible and meaningful products and services to enhance the hospitality experience, both within and outside the tourism and leisure sector. Tourism professionals know better than anyone what the wishes and needs of customers are, have an eye for new technologies, see opportunities for innovation, translate this into financial and economic feasibility and know how to position this successfully in the market.

Tourism Management in the Smart Solutions Semester

What a student can contribute in a project:

- Mapping trends & developments with regard to tourism/ hospitality issues;

- Developing products and services which contribute to the hospitality experience.

- Connecting new technologies to the behaviour and needs of the user;

- Performing target group analysis and map the customer journey;

- Writing and executing a(n) (online) Marketing communication plan;

- Do market research by means of desk and field research;

- Develop sustainable earnings and business models;

- Organising and managing projects