BAIN ARCHITECTURAL TECHNOLOGY & CONSTRUCTION MANAGEMENT

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KNOWLEDGE ALONE IS NOT ENOUGH. YOU NEED SKILLS.



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MAKING SOMETHING FLY IN THE REAL WORLD IS THE PURPOSE OF EVERYTHING WE DO

STUDYING AT KEA

Each year, approx. 100 new students start the BA programme in Architectural Technology and Construction Management at KEA. Students come from Denmark and 60+ countries from all over the world. They follow the same subjects together throughout their studies. All subjects are pre-defined and fixed. There are electives in 3rd, 4th and 5th semester. Incoming exchange students joining the programme for a semester take all of the subjects of the semester (and an elective of their choice) together with the full-time students at the same level.



INTERDISCIPLINARY TOPICS		
	PROFESSIONAL DEVELOPMENT AREAS	

The teaching is case- and project based and there is a great deal of group work. Students of mixed nationalities and backgrounds work together in groups of 4-5 persons. They typically form their own experimental companies, and at the end of the semester they present their common project in a group assessment. In the 6th semester, full-time students have a 20-week (unpaid) internship e.g. in a construction company or an architect's office – either in Denmark or abroad. As the internship lasts a full twenty weeks, students gain in-depth knowledge of the company and experience tremendous development in their professional skills.

Students are introduced to topics such as BIM and digitalization, tomorrow's innovative building, refurbishment and renovation of buildings, management and globalization, infrastructure and construction technology. There is also a great emphasis on sustainability, entrepreneurship and innovation and material science. These integral elements of the entire programme equip graduates for a wide variety of positions.

In keeping with the concept of lifelong learning, it is important that students take responsibility



for their own learning – to an increasing degree as they progress through their studies and grow into professionals. Lecturers provide continuous feedback to help students develop within the field, but students should be prepared to make and discuss their own decisions.

There are approximately twenty-four contact hours per week between lecturers and students, but the programme requires full-time study (minimum 37 hours/week) from 8.30 to approx. 16.00 o'clock Mondays to Fridays. Students are expected to work independently and in project groups outside the contact hours.

EXCHANGE PROGRAMME









GLOBALISED EDUCATION

EXCHANGE STUDENTS – INCOMING AND OUTGOING

Incoming exchange students are welcome in the 3rd, 4th and 5th semesters. KEA students are able to go on exchange in the same semesters.

Students are placed in classes with up to 34 students and will study along 60+ different nationalities. Approximately 10-20% of the students at the international line are Danish. The working language is English, and it is expected that everybody speaks English when they enter the classroom, also students from the same countries of origin.

All assessments are held in English, and students should be – or become – comfortable with oral presentations in English. Only few assessments are in writing, this covers mostly reports and documentation material. The evaluation of the elective and the exam at the end of the mandatory part of the semester are both oral group assessments. Even though the project groups are being assessed together, the students will be graded according to their individual performances.

At KEA, the autumn semester runs from late August until late January, while the spring semester runs from the very end of January or beginning of February until late June.

Exams for the autumn semester are held in January, and exams for the spring semester are held in June.

CORE AREAS AND STRUCTURE

The programme consists of five core areas – General, Business, Production, Design and Surveying – which constitute the overall subject areas with which the students are to work in order to acquire the knowledge, skills and competences required to complete the study.

CORE AREA	STRUCTURE
GENERAL 30 ECTS	 Principles of oral and written communication; Principles and methods for use in cooperation, organisation and learning; General applied mathematical and physical construction principles.
BUSINESS 15 ECTS	 Applied principles, methods and rules within entrepreneurship; Structure of rules of law and legal method; Basic rules in regard to the law of property within contractual law, law of torts and practice; Basic elements of building economy.
PRODUCTION 35 ECTS	 Applied theories and methods within innovation, planning, management and execution of production processes within the industry; General theoretical production concepts and methods; Applied theories and methods for project management of building and construction production in factories or on the construction site.
DESIGN 40 ECTS	 Design and innovation methodologies; Static analysis, calculations of estimates for design; Quality assurance, work environment and document handling; Construction of digital building information models.
Surveying 5 ECTS	 Principle, theories, methods and tools used within surveying, setting-out related to the building and construction area; Instruments used for surveying and setting-out buildings and the accuracy obtained through surveying.

SEMESTER STRUCTURE

1ST SEMESTER Residential Buildings

General (10 ECTS), Production (5 ECTS), Design (10 ECTS) Surveying (5 ECTS)

2ND SEMESTER BUILDINGS UP TO 2½ STOREYS

General (10 ECTS), Business (5 ECTS), Production (10 EC Design (5 ECTS)

3RD SEMESTER * INDUSTRIAL BUILDINGS AND PREFABRICATION

General (5 ECTS), Business (5 ECTS), Production (10 ECTS) Design (5 ECTS)

4TH SEMESTER * MULTI-STOREY BUILDINGS >3 STOREYS

General (5 ECTS), Production (5 ECTS), Design (10 ECTS)

5TH SEMESTER * RENOVATION AND REFURBISHMENT

Business (5 ECTS), Production (5 ECTS), Design (10 ECTS)

6TH SEMESTER INTERNSHIP

Internship (30 ECTS)

7TH SEMESTER THE BACHELOR'S DEGREE PROJECT

Specialisation Report (10 ECTS), Bachelor Project (20 ECTS

* 3rd, 4th and 5th semesters are open for exchange stu

The mandatory educational component consists of an interdis- ciplinary project where the students work with a concrete small residential building.
The mandatory educational component consists of an interdisci- plinary project where the students work with a concrete building up to 2½ storeys.
The mandatory educational component consists of an interdisci- plinary project where the students work with design of industrial- ised components used in a concrete building.
The mandatory educational component consists of an inter- disciplinary project where the students work with a concrete multi-storey building >3 storeys.
The mandatory educational component consists of an interdis- ciplinary project where the students work with planning and design of a concrete renovation.
The internship is to be completed in a private or public company in Denmark or abroad. The internship company must offer in- ternship assignments with a work content that is relevant to the profession, as well as guidance.
The programme is concluded with a Bachelor's degree project. The project cannot be concluded until all other exams of the programme have been passed.

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3RD SEMESTER

OPEN TO INDUSTRIAL BUILDINGS AND PREFABRICATION EXHANGE KNOWLEDGE

STUDENTS The students will acquire knowledge of:

- relevant communication theories and methods to convey discipline-specific issues;
- industrial production and execution methods;
- mathematical and physical solutions;
- basic principles, theories, methods and tools related to managing business economics and personnel management;
- the structure of rules of law and legal method;
- basic rules in regard to the law of property within contractual law, law of torts and practice;
- the social, cultural and ethical issues that have an impact on the establishment, operation and administration of a business;
- digital systems and methods to optimise information flows in a building and construction

SKILLS

The students will be able to: select and use relevant methods and tools for organising, leading, managing, administering and operating a business;

- apply accounting principles for operating a business and use the industry's methods and tools for budgeting, bookkeeping and tendering;
- apply the industry's methods, forms and standard contracts in relation to company management, planning and follow-up;
- scrutinise the legal basis of contract formation as well as prepare a risk assessment in the

COMPETENCES

The students will be able to:

- independently take part in discipline-specific and interdisciplinary collaboration and take on responsibility within the settings of professional
- apply the acquired knowledge and the skills gained to carry out substantiated analysis of discipline-specific relevant issues and their

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4TH SEMESTER

OPEN TO MULTI-STOREY BUILDINGS EXHANGE KNOWLEDGE

STUDENTS The students will acquire knowledge of:

- tools, standards and innovative processes in connection with the theme;
- complex production and execution methods;
- complex constructions, planning and control tools, technical installations, static principles and documentation;
- scientific principles and documentation;
- innovation theory and methods.

SKILLS

- The students will be able to: convey the chosen methods and technical solutions to relevant partners;
- translate a chosen management concept into practical planning in relation to design and
- manage projects independently and in collaboration with other professionals, including convey technical issues concerning production, to other interested parties;
- analyse and understand issues in production

COMPETENCES

- The students will be able to:
- apply the acquired knowledge and the skills gained to carry out substantiated analysis of discipline-specific relevant issues and their solutions.
- handle the information model data and exchange these between different systems for use in the
- manage the design and execution process for a multi-storey building, taking relevant social, environmental, financial and technological aspects into consideration;
- create innovative solutions within construction with a view to optimising production.

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OPEN TO RENOVATION AND REFURBISHMENT EXHANGE KNOWLEDGE

STUDENTS The students will acquire knowledge of:

- tools and standards in relation to the theme of the mandatory educational component;
- constructions, sustainability, planning and control tools, technical installations, static principles and documentation;
- design and execution methods;
- different energy-optimising renovation and

SKILLS

- The students will be able to: use methods and tools to collect and analyse information;
- assess and understand social, cultural and ethical on its execution;
- apply project-design and sustainable methods in relation to the theme of the mandatory educational component and use methods for planning the execution of the work.

COMPETENCES

- The students will be able to: acquire new knowledge and translate it to practice in respect of the profession;
- set up a business of their own within the profession's areas, independently and in collaboration with others;
- handle the management and control of small companies and the tender process;
- manage projects professionally, in terms of time, financially and legally.
- plan, quality assure and manage the production of complex building and construction tasks;
- handle communication between users, clients, authorities, consultants and contractors about the production of complex construction tasks or

WORKSHOP FACILITIES

KEA IS A PLAYGROUND, A COMMUNITY, A WEALTH OF ACTIVITIES AND RESPONSIBILITIES

KEA has fully equipped classrooms with free WIFI access. Besides classrooms for teaching, we have lovely open learning areas where the students can work in groups or use the space for designing. We have a brand new workshop area for laser cutting and 3D printing as well as other machines that can be useful for model making.

LIBRARY AND MATERIAL CONNEXION

An essential part of KEA is the library service. The staff provides profound guidance to students, lecturers and external stakeholders. The library is not only filled with books, but also has online searching platforms and a material box with samples of all the materials the students use on the different programmes at KEA.

KEA has one of the world's leading material libraries. In autumn 2013, KEA became the seat of the largest material collection in the Nordic region, a project carried out in collaboration with Material ConneXion in New York. Material ConneXion includes approximately 1,500 physical samples on display and gives online access to more than 7,000 material samples.







CREATIVE ENVIRONMENTS AT EVERY CORNER

There are endless possibilities as a student at KEA. We have both traditional and modern tools for different production methods, including 3D printers for prototyping. KEA also has a design LAB, where students can experiment with materials and learn how to use them in a new way in their profession.

KEA MAKERLAB

KEA's prototype workshop can be found across from the reception at Guldbergsgade. Here the students have access to several workshop facilities, including a wide range of machines and equipment like a CNC milling machine, a laser cutter or different 3D printers, allowing them to elaborate on their ideas from concept to final product.

More information about Makerlab at kea.dk/kealabs/workshopgbg











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