Course Specifications
Valid as from the academic year 2019-2020

Course
Production Technology (F000006)

Lecturers in academic year 2019-2020
Demeestere, Kristof
LA24 lecturer-in-charge

Course offerings and teaching methods in academic year 2019-2020
A (semester 1)  Dutch  lecture  45.0 h

Offered in the following programmes in 2019-2020

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<th>Programme</th>
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<tbody>
<tr>
<td>Bachelor of Science in Business Administration</td>
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<td>Bachelor of Science in Economics</td>
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Teaching languages
Dutch

Keywords
industrial production, matter and raw materials, energy, technological unit processes, chemical industry, metallurgy, food industry

Position of the course
The objective of this course is to give an overview of the main industrial sectors on the one hand and the most important technological processes used during the exploitation of raw materials and their conversion to consumption products on the other hand. The aim is to provide all students Bachelor of (Business) Economics and Business Engineering a technological basic knowledge so that they can act as a bridge builder between production sensu strictu and related product oriented functions.

A first part consists of a general introduction to the organisation of the production process, followed by a more detailed discussion on the structure of matter and the kinds of raw materials and energy(technology) on the one hand, and on the most important unit operations used during industrial production on the other hand.

In the second part, the main industrial sectors and their production processes are discussed, with focus on the chemical industry (production technology of polymers, pharmaceutical industry, bio-based industry), metallurgy, and food and nutrition industry.

Contents

Part 1: Industrial production technology: introduction, context and unit processes
1 Introduction to industrial production technology and production processes
   • production processes: organisation, types and representation
   • industry in Flanders
2 Matter and raw materials
   • structure of matter, states of aggregation
   • industrial raw materials: types of resources, exploitation and storage
3 Energy
   • definition and units
   • primary sources of energy
   • technology for energy conversion

(Approved)
4 Unit operations in the production technology
- physical transport processes: transport of fluida and solids, heat transfer, mass transfer, laws of conservation
- mixing and separation processes: overview and classification
- mechanical production of discrete products: introductory terminology and techniques

Part 2: Overview of the major branches of industry
1 Production technology in the chemical industry
2 Production technology in the metallurgy
3 Production technology in the food and nutrition industry

Initial competences
Have a basic knowledge on chemistry and physics, in accordance to the final competences of the secondary education level

Final competences
1 discuss the general structure and organisation of a production process
2 situate and discuss the major raw materials and energy resources for industrial production
3 agree the relationship between the structure, properties and behaviour of common substances and materials
4 have knowledge on and insight in the structure of an energy chain and the major technologies for energy conversion
5 understand the basic principles and underlying mechanisms of the most important industrial unit operations and have knowledge of their applications
6 discuss the main industrial sectors and their characteristics, and have knowledge on and insight in their common production processes and products
7 situate industrial production within its broader socio-economical context, with attention for sustainability aspects

Conditions for credit contract
Access to this course unit via a credit contract is unrestricted: the student takes into consideration the conditions mentioned in 'Starting Competences'

Conditions for exam contract
Access to this course unit via an exam contract is unrestricted

Teaching methods
Lecture

Extra information on the teaching methods
Plenary lectures, supported by powerpoint presentation and/or video material.

Learning materials and price
A syllabus is available. Additional information and supporting learning material is distributed via Ufora. Cost is estimated at 15 €.

References

Course content-related study coaching
The lecturer can be contacted after each plenary lecture for additional explanation or questions.

Evaluation methods
end-of-term evaluation

Examination methods in case of periodic evaluation during the first examination period
Written examination

Examination methods in case of periodic evaluation during the second examination period
Written examination

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation
not applicable

Extra information on the examination methods
Written examination assessing the gained knowledge on and the insight in the design of a production process, the structure and properties of resources and materials, the underlying technological unit operations and processes, and the major industrial
sectors.
Calculation of the examination mark