

## Machine Elements (E062220)

Course size (nominal values; actual values may depend on programme)

Credits 6.0 Study time 180 h Contact hrs 60.0 h

Course offerings and teaching methods in academic year 2018-2019

A (semester 2)	Dutch	lecture	30.0 h
		seminar: coached	30.0 h
		exercises	

Lecturers in academic year 2018-2019

De Baets, Patrick	TW08	lecturer-in-charge
Fauconnier, Dieter	TW08	co-lecturer

Offered in the following programmes in 2018-2019

	crdts	offering
<a href="#">Bachelor of Science in Electromechanical Engineering</a>	6	A
<a href="#">Preparatory Course Master of Science in Electromechanical Engineering (main subject Control Engineering and Automation )</a>	6	A
<a href="#">Preparatory Course Master of Science in Electromechanical Engineering (main subject Electrical Power Engineering)</a>	6	A
<a href="#">Preparatory Course Master of Science in Electromechanical Engineering (main subject Maritime Engineering)</a>	6	A
<a href="#">Preparatory Course Master of Science in Electromechanical Engineering (main subject Mechanical Construction)</a>	6	A
<a href="#">Preparatory Course Master of Science in Electromechanical Engineering (main subject Mechanical Energy Engineering)</a>	6	A

Teaching languages

Dutch

Keywords

belts, chains, couplings, hydraulics, bearings, screws, joints, seals

Position of the course

The course provides an insight into the main elements used in modern machine construction. Attention is paid to the operation, construction and dimensioning of machine components. The course fits into the design and construction oriented courses of the mechanical engineering study. The emphasis lies on the judicious selection and application of important machine components in a design task. The detailed optimization of machine components falls beyond the scope of this course.

Contents

- Tolerances: dimensional tolerance, shape tolerance, location tolerance, surface quality
- Power transmission: belts, chains, couplings, hydraulics
- Tribotechnology: roller bearings, hydrodynamic bearings, seals
- Joining technology: keys, shrink fits, bolt and nuts

Initial competences

Mechanics of materials, basics of Production Technology

Final competences

- 1 Understanding the operation of important machine elements
- 2 Being able to select machine elements based on functionality
- 3 Dimensioning of machine elements
- 4 Interpreting of and applying catalogue information

#### Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

#### Conditions for exam contract

This course unit cannot be taken via an exam contract

#### Teaching methods

Lecture, seminar: coached exercises

#### Extra information on the teaching methods

The lectures explain the basic concepts of various machine elements.

The guided exercises illustrate how machine components are dimensioned. The exercises are design-oriented. In addition to exercises on individual machine elements, some exercises are "integrating" the learning of several chapters.

A laboratory visit in small groups is organized to show and demonstrate important machine elements.

#### Learning materials and price

Course notes in Dutch language  
Electronic presentations

#### References

The handbook Machineonderdelen, Roloff & Matek, Academic Services, Schoonhoven (Dutch language) is strongly recommended

#### Course content-related study coaching

#### Evaluation methods

end-of-term evaluation

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

Open book examination, oral examination

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

Open book examination, oral examination

#### Examination methods in case of permanent evaluation

#### Possibilities of retake in case of permanent evaluation

not applicable

#### Extra information on the examination methods

During examination period: oral closed-book exam, written preparation; written open-book exam - problems

#### Calculation of the examination mark

Special conditions: Theory: 67% and exercises: 33%.

In case the score for one of the different parts (theory or exercises) is less than 8, then this score holds for the total score.