Course Specifications
Valid as from the academic year 2019-2020

Due to Covid 19, the education and evaluation methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

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

<table>
<thead>
<tr>
<th>Credits</th>
<th>Study time</th>
<th>Contact hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0</td>
<td>180 h</td>
<td>60.0 h</td>
</tr>
</tbody>
</table>

Course offerings and teaching methods in academic year 2019-2020

<table>
<thead>
<tr>
<th>Offer</th>
<th>Dutch</th>
<th>HoWest</th>
<th>A (semester 2)</th>
<th>practicum</th>
<th>24.0 h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>seminar: coached</td>
<td>12.0 h</td>
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<td></td>
<td>exercises</td>
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<td></td>
<td></td>
<td></td>
<td>lecture</td>
<td>24.0 h</td>
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<table>
<thead>
<tr>
<th>Offer</th>
<th>practicum</th>
<th>20.0 h</th>
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<tbody>
<tr>
<td></td>
<td>lecture</td>
<td>20.0 h</td>
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<tr>
<td></td>
<td>seminar: coached</td>
<td>10.0 h</td>
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<tr>
<td></td>
<td>exercises</td>
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Lecturers in academic year 2019-2020

<table>
<thead>
<tr>
<th>Monte, Michael</th>
<th>TW08</th>
<th>lecturer-in-charge</th>
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</thead>
<tbody>
<tr>
<td>Callens, Ria</td>
<td>TW08</td>
<td>co-lecturer</td>
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Offered in the following programmes in 2019-2020

<table>
<thead>
<tr>
<th>Programme</th>
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<tbody>
<tr>
<td>Bachelor of Science in Engineering Technology (main subject Electromechanical Engineering Technology)</td>
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<tr>
<td>Bachelor of Science in Engineering Technology (main subject Electronics and ICT Engineering Technology)</td>
</tr>
<tr>
<td>Bachelor of Science in Engineering Technology (main subject Machine and Production Automation)</td>
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<tr>
<td>Joint Section Bachelor of Science in Engineering Technology</td>
</tr>
<tr>
<td>Bachelor of Science in Industrial Design Engineering Technology</td>
</tr>
<tr>
<td>Bachelor of Science in Bioindustrial Sciences</td>
</tr>
<tr>
<td>Linking Course Master of Science in Electronics and ICT Engineering Technology (main subject Embedded Systems)</td>
</tr>
<tr>
<td>Linking Course Master of Science in Industrial Design Engineering Technology</td>
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</table>

<table>
<thead>
<tr>
<th>Credentials</th>
<th>Offering</th>
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<tbody>
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<td>6</td>
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<tr>
<td>6</td>
<td>A</td>
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<tr>
<td>6</td>
<td>A, B</td>
</tr>
<tr>
<td>6</td>
<td>A</td>
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Teaching languages

Dutch

Keywords

Fluid statics, heat, vibrations and waves, geometrical and physical optics

Position of the course

- Acquiring insight into and being able to apply basic concepts of general physics.
- Acquiring basic research skills.

Contents

Course offering A and B
- Introduction to measuring and experimenting
- Pressure and static properties of liquids
- Temperature and heat - kinetic gas theory
- Laws of thermodynamics
- Vibrations
- General wave theory and sound
- Geometric optics
- Wave properties of electromagnetic radiation

Course offering A

(Approved)
• Introduction to modern physics - nuclear energy
  Course offering B
• Introduction to modern physics

Initial competences

Final competences
  1 Understand and apply basic concepts and laws of fluid technology, heat theory, vibrations and waves, optics and modern physics.
  2 Analyze and solve physical problems in the field of fluid technology, heat theory, vibrations and waves, optics and modern physics.
  3 To be able to carry out experiments using correct and accurate measuring methods.
  4 Being able to analyze measurements and interpret the results based on an error analysis.
  5 To be able to report an experiment in a report, with attention to language and structure.

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, practicum, seminar: coached exercises

Extra information on the teaching methods
  In the practical sessions, a number of laboratory tests are carried out individually or in small groups by the students. The processing of the results is done in Excel.

Learning materials and price
  • Intro notes on lab physics (€ 5)
  • Lab notes available on the electronic learning environment
  • Customized handbook based on Giancoli (€ 60) or Giancoli, Physics part 1 and 2, Pearson Prentice Hall, 2008 (€ 140)
  • Excel

References

Course content-related study coaching
  • The students can test their practical knowledge and skills via the interaction during the lab sessions.
  • Interactive support on a forum on the electronic learning environment.
  • Student counseling service is available on appointment.

Evaluation methods
  end-of-term evaluation and continuous assessment

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

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

Examination methods in case of permanent evaluation
  Participation, assignment

Possibilities of retake in case of permanent evaluation
  examination during the second examination period is possible in modified form

Extra information on the examination methods
  • Continuous evaluation: lab
  • First examination period: attitude, experiments, data-analysis and written report
  • Second examination period: written exam about use of measuring instruments, error calculation and graphics

Calculation of the examination mark
  **First examination period:**

(Approved)
Final Score (20) = C1xP1 + C2xP2  
C1 and C2 are weighing coefficients and P1 and P2 are the scores (on 20)  
P1: written exam  
P2: continuous assessment: lab  
C1 = 60%  
C2 = 40%  
In order to pass for the course a score of at least 8/20 must be achieved for both continuous assessment: lab or written exam. If this condition is not met, a deviation from the calculated score (if 10 or more) will be made and the score will be lowered to 9/20.

**Second examination period:**  
Final score (20) = C1xP1 + C2xP2 + C3xP3  
C1, C2 and C3 are the weighing coefficients and P1, P2 and P3 are the scores (on 20)  
P1: written exam  
P2: continuous assessment: exercises (= P2 continuous assessment first examination period)  
P3: written exam: lab  
C1 = 60%  
C2 = 20%  
C3 = 20%  
In order to pass for the course a score of at least 8/20 must be achieved for both continuous assessment: lab or written exam. If this condition is not met, a deviation from the calculated score (if 10 or more) will be made and the score will be lowered to 9/20.