Studies Plan

Génie mécanique 2018-19

Master project

<table>
<thead>
<tr>
<th>Courses</th>
<th>Master 1</th>
<th>Master 2</th>
<th>Exam</th>
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<th>Credit</th>
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<td>Language Code</td>
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<td>Teacher</td>
<td>Specialization</td>
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<tr>
<td>Engineering internship credited with master project (master in Mechanical engineering)</td>
<td>F</td>
<td>ME-537</td>
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Block "Projects"

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<th>Master 2</th>
<th>Exam</th>
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<td>ME-401</td>
<td>GM</td>
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<td>Sum</td>
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Group "options"

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<th>Master 2</th>
<th>Exam</th>
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<td>ME-443</td>
<td>ME-401</td>
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<td>Advanced additive manufacturing technologies</td>
<td>E</td>
<td>MICRO-413</td>
<td>MT</td>
<td>Briand</td>
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<td>Advanced control systems</td>
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<td>ME-524</td>
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<td>ME-414</td>
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## Continuous improvement of manufacturing systems

**Course:** ME-498  
**Lecturer:** Kaboli  
**Credits:** 2h 2h  
**Session:** During the semester

## Engines and fuel cells

**Course:** ME-551  
**Lecturer:** Van Herle  
**Credits:** 3h  
**Session:** Win Written

## Experimental methods in engineering mechanics

**Course:** ME-412  
**Lecturer:** Kolinski  
**Credits:** 1h 3h  
**Session:** Win During the semester

## Finite element modelling and simulation

**Course:** ME-373  
**Lecturer:** Cugnoni  
**Credits:** 1h 1h 1h  
**Session:** Written

## Fracture mechanics

**Course:** ME-432  
**Lecturer:** Botsis  
**Credits:** 2h  
**Session:** Oral

## Fundamentals of computer aided manufacturing

**Course:** ME-416  
**Lecturer:** Kyrtisis  
**Credits:** 3h 2h  
**Session:** Win Written

## Hydraulic turbomachines

**Course:** ME-453  
**Lecturer:** Avellan  
**Credits:** 3h 1h  
**Session:** Win Written

## Hydrodynamics

**Course:** ME-444  
**Lecturer:** Gallaire  
**Credits:** 2h 2h  
**Session:** Written

## Industrial and applied robotics

**Course:** MICRO-451  
**Lecturer:** Bouri  
**Credits:** 2h  
**Session:** Oral

## Instability

**Course:** ME-466  
**Lecturer:** Gallaire  
**Credits:** 2h 1h  
**Session:** Written

## Integrated mechanical design

**Course:** ME-418  
**Lecturer:** Schorderet  
**Credits:** 3h  
**Session:** Oral

## Introduction to additive manufacturing

**Course:** ME-413  
**Lecturers:** Boillat, Brugger, Moser  
**Credits:** 2h 1h  
**Session:** Written

## Introduction to nuclear engineering

**Course:** ME-464  
**Lecturers:** Hursin, Pautz  
**Credits:** 2h  
**Session:** Oral

## Lifecycle performance of product systems

**Course:** ME-516  
**Lecturers:** Friot, Kyrtisis  
**Credits:** 2h 1h  
**Session:** Oral

## Mechatronics

**Course:** ME-424  
**Lecturers:** Agbeviade, Kyrtisis  
**Credits:** 3h 2h  
**Session:** Written

## Mechanical engineering project II

**Course:** ME-402  
**Lecturers:** Profs divers  
**Credits:** 2h 2h  
**Session:** Win During the semester

## Mechanical product design and development

**Course:** ME-410  
**Lecturer:** Paik  
**Credits:** 2h 1h  
**Session:** Win During the semester

## Mechanics of slender structures

**Course:** ME-411  
**Lecturers:**  
**Credits:** 3h 1h  
**Session:** During the semester

## Micro/Nanomechanical devices

**Course:** ME-426  
**Lecturers:** Villanueva, Torrjö  
**Credits:** 2h 1h  
**Session:** Oral

## Micro/Nano robotics

**Course:** ME-436  
**Lecturers:** Sakar  
**Credits:** 2h 1h  
**Session:** During the semester

## Modelling and optimization of energy systems

**Course:** ME-454  
**Lecturers:** Maréchal  
**Credits:** 2h 2h  
**Session:** Oral

## Model predictive control

**Course:** ME-425  
**Lecturers:**  
**Credits:** 2h 1h  
**Session:** Written

## Multibody simulation

**Course:** ME-475  
**Lecturers:** Ferrari, Trecate  
**Credits:** 2h 1h  
**Session:** Written

## Multivariable control

**Course:** ME-422  
**Lecturers:** Ferrari, Trecate  
**Credits:** 2h 1h  
**Session:** Written

## Networked control systems

**Course:** ME-427  
**Lecturers:** Ferrari, Trecate  
**Credits:** 2h 1h  
**Session:** Written

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<table>
<thead>
<tr>
<th>Course Title</th>
<th>Code</th>
<th>Credits</th>
<th>Contact Hours</th>
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<tbody>
<tr>
<td>Nonlinear Control Systems</td>
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<td>Production management</td>
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<td>Win Oral</td>
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<td>2h 1h</td>
<td>Sum Written</td>
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<tr>
<td>Thermal power cycles and heat pump systems</td>
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<td>Sum Oral</td>
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<td>Turbulence</td>
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<td>Two-phase flows and heat transfer</td>
<td>ME-446</td>
<td>E</td>
<td>2h 1h</td>
<td>Win During the semester</td>
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</table>

C: Courses, E: Exercice, P: Pratic courses, *: option courses / F: French courses, D: Deutsch courses, E: English Courses / Sum: Summer, Win: Winter