

# Opasraportti

## Courses in English for Exchange Students, 2016-17: Mechanical Engineering (2016 - 2017)

This WebOodi **Course Catalogue** lists courses for exchange students in the study field of **Mechanical Engineering, with lecture materials** (books, notes, etc.) **available in English** (or taught in English) during the Academic Year **2016-2017** at the **Faculty of Technology, University of Oulu**.

**Most of the Mechanical Engineering courses listed in this Catalogue are actually lectured in Finnish, but there is an alternative method for completing the course in English:** e.g. the course has reading materials in English available (self-study materials: books, lecture notes, etc.) which will replace the lectures and assignments; possible practical exercises are taught in English; and all final examinations are given in English.

**NB! Course availability:** The listed courses are available for **exchange students hosted by the Faculty of Technology / study field Mechanical Engineering, if they have the previous knowledge requirements** of the course.

**Exchange students hosted by other University of Oulu faculties** usually cannot take these courses, especially if they do not have the required previous knowledge. They must contact Coordinator of the Faculty of Technology to ask if it is possible to participate.

**When planning your exchange studies** and the required **Learning Agreement**, please use the information provided under the **Courses tab** in this Catalogue. Please read carefully the provided information for each course you wish to take. **As an incoming exchange student you must submit your Exchange Application online through the University of Oulu SoleMOVE system**, and with it you will also need to submit a course plan and enclose the respective **Learning Agreement signed by you and your home coordinator**.

**Further information on application process** for incoming exchange students is available at <http://www oulu.fi/english/studentexchange> or at [international.office@oulu.fi](mailto:international.office@oulu.fi). **For more information** about the courses, please contact Faculty Coordinator (see contact info below).

**After arrival**, accepted exchange students are required to **register** on-line to all courses (and later, to the final course exams too, separately). Course registration takes place via the WebOodi system only once you have arrived in Oulu and received your University of Oulu login information. More information on registration will be provided during Orientation. When registering to a course you will be able to find detailed information on teaching and schedules under the Instruction and Examinations tabs.

**Course schedules:** Detailed information on teaching and schedule can be found under the **Instruction and Examinations tabs**. Our courses' schedules are based on so-called **periodical** schedules: Courses which are organised during **periods 1-2** are given on the **autumn** term (September-December), and respectively the **periods 3-4** refer to courses given during the **spring** term (January-May).

**Individual course codes include information on the level of course:**

xxxxx**Y**, xxxxx**P** = basic introductory level courses, for 1st-2nd year students (basic Bachelor level)

xxxxx**A** = subject level introductory courses, mainly for 1-3 year students (advanced Bachelor level)

xxxxx**S** = advanced level courses, mainly for 4-5 year students (Master level courses)

**On the Academic Year of 2016-2017 these periods are scheduled as follows:**

Orientation week: Aug 22-26, 2016  
 Autumn term: Period 1: Aug 29 - Oct 21, 2016;  
 Period 2: Oct 24 – Dec 16, 2016

Orientation week: Jan 4 - Jan 5, 2017;  
 Spring Term: Period 3: Jan 9 – March 10, 2017;  
 Period 4: March 13 – May 12, 2017  
 (after period 4 there can possibly be some final exams, until the end of May)

**Any questions about these courses should be addressed to:**

Ms. M.Sc. Marita Puikkonen  
 Coordinator for Faculty of Technology Student Exchange (Incoming & Outgoing Mobility) for  
 Process, Environmental and Mechanical Engineering, and Industrial Engineering and Management  
 Faculty of Technology, University of Oulu, Finland  
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## Tutkintorakenteisiin kuulumattomat opintokokonaisuudet ja -jaksot

462110S: Advanced course in mechatronics, 8 op  
 464105S: Computer aided design, 5 op  
 465113S: Failure mechanisms in metals, 5 op  
 465104A: Heat treatment and welding of metals, 5 op  
 462101A: Information technology and machines, 5 op  
 462105A: Machine Sensor Technology, 5 op  
 462104A: Machine automation, 5 op  
 462102A: Machine automation actuators, 5 op  
 462111S: Machine diagnostics, 10 op  
 462107A: Maintenance of machines, 5 op  
 462112S: Measuring instruments in machine diagnostics, 5 op  
 462108S: Mechatronics, 6 op  
 462106A: Precision engineering, 5 op  
 465103A: Principles of metal shaping and forming, 5 op  
 465112S: Sheet metal forming, 8 op  
 462109S: Simulation and modelling of machines, 8 op  
 465110S: Strength of metallic alloys, 7 op  
 465111S: Welding metallurgy, 8 op

## Opintojaksojen kuvaukset

### Tutkintorakenteisiin kuulumattomien opintokokonaisuuksien ja -jaksojen kuvaukset

**462110S: Advanced course in mechatronics, 8 op**

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Field of Mechanical Engineering

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Liedes, Toni Mikael

**Opintokohteen kielet:** Finnish

**Leikkaavuudet:**

462052S Advanced Course in Mechatronics 8.0 op

Ei opintojaksokuvauksia.

### **464105S: Computer aided design, 5 op**

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Field of Mechanical Engineering

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Tapio Korpela

**Opintokohteen kielet:** Finnish

**Leikkaavuudet:**

462044S-01 Computer Aided Design, examination 0.0 op

462044S-02 Computer Aided Design, exercise work 0.0 op

462044S Computer Aided Design 3.5 op

Ei opintojaksokuvauksia.

### **465113S: Failure mechanisms in metals, 5 op**

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Field of Mechanical Engineering

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Nousiainen, Olli Pekka

**Opintokohteen kielet:** Finnish

**Leikkaavuudet:**

465079S Failure Analysis 3.5 op

Ei opintojaksokuvauksia.

### **465104A: Heat treatment and welding of metals, 5 op**

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Field of Mechanical Engineering

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Timo Kauppi

**Opintokohteen kielet:** Finnish

**Leikkaavuudet:**

465077A-01 Welding Technology, examination 0.0 op  
 465077A-02 Welding Technology, exercises 0.0 op  
 465077A Welding Technology 3.5 op

Ei opintojaksokuvauksia.

### **462101A: Information technology and machines, 5 op**

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Field of Mechanical Engineering

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Liedes, Toni Mikael

**Opintokohteen kielet:** Finnish

Ei opintojaksokuvauksia.

### **462105A: Machine Sensor Technology, 5 op**

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Field of Mechanical Engineering

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Liedes, Toni Mikael

**Opintokohteen kielet:** Finnish

**Leikkaavuudet:**

462053A Sensor Technology of Machine Automation 5.0 op

Ei opintojaksokuvauksia.

### **462104A: Machine automation, 5 op**

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Field of Mechanical Engineering

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Louhisalmi, Yrjö Aulis

**Opintokohteen kielet:** Finnish

**Leikkaavuudet:**

462022S-01 Machine Automation II, examination 0.0 op

462022S-02 Machine Automation II, exercise work 0.0 op

462022S Machine Automation II 5.0 op

Ei opintojaksokuvauksia.

### **462102A: Machine automation actuators, 5 op**

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Field of Mechanical Engineering

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Louhisalmi, Yrjö Aulis

**Opintokohteen kielet:** Finnish

**Leikkaavuudet:**

462021A-01	Machine Automation I, examination	0.0 op
462021A-02	Machine Automation I, exercise work	0.0 op
462021A	Machine Automation I	5.0 op
464064A	Actuators	5.0 op

Ei opintojaksokuvauksia.

### **462111S: Machine diagnostics, 10 op**

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Field of Mechanical Engineering

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Jouni Laurila

**Opintokohteen kielet:** Finnish

**Leikkaavuudet:**

464088S	Diagnosis of Machine Condition	8.0 op
464088S-01	Diagnosis of Machine Condition, examination	0.0 op
464088S-02	Diagnosis of Machine Condition, exercises	0.0 op

Ei opintojaksokuvauksia.

### **462107A: Maintenance of machines, 5 op**

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Field of Mechanical Engineering

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Jouni Laurila

**Opintokohteen kielet:** Finnish

**Leikkaavuudet:**

464087A-01	Maintenancy Technology, examination	0.0 op
464087A-02	Maintenancy Technology, exercise work	0.0 op
464087A	Maintenancy Technology	5.0 op

Ei opintojaksokuvauksia.

### **462112S: Measuring instruments in machine diagnostics, 5 op**

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Field of Mechanical Engineering

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Konsta Antero Karioja

**Opintokohteen kielet:** Finnish

**Leikkaavuudet:**

464089S-01 Measuring Instrumentation and Techniques for Diagnosis of Machine Condition, examination 0.0 op

464089S-02 Measuring Instrumentation and Techniques for Diagnosis of Machine Condition, exercises 0.0 op

464089S Measuring Instrumentation and Techniques for Diagnosis of Machine Condition 5.0 op

Ei opintojaksokuvauksia.

### **462108S: Mechatronics, 6 op**

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Field of Mechanical Engineering

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Liedes, Toni Mikael

**Opintokohteen kielet:** Finnish

**Leikkaavuudet:**

462051S Mechatronics 5.0 op

Ei opintojaksokuvauksia.

### **462106A: Precision engineering, 5 op**

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Field of Mechanical Engineering

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Louhisalmi, Yrjö Aulis

**Opintokohteen kielet:** English

**Leikkaavuudet:**

462038A-01 Precision Engineering, examination 0.0 op

462038A-02 Precision Engineering, exercise work 0.0 op

462038A Precision Engineering 3.5 op

Ei opintojaksokuvauksia.

### **465103A: Principles of metal shaping and forming, 5 op**

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Field of Mechanical Engineering

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Jari Larkiola

**Opintokohteen kielet:** Finnish

**Leikkaavuudet:**

465095A-01	Sheet Metal Forming	0.0 op
465095A-02	Sheet Metal Forming, literature review	0.0 op
465095A	Sheet Metal Forming	3.5 op

Ei opintojaksokuvauksia.

### **465112S: Sheet metal forming, 8 op**

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Field of Mechanical Engineering

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Jari Larkiola

**Opintokohteen kielet:** Finnish

Ei opintojaksokuvauksia.

### **462109S: Simulation and modelling of machines, 8 op**

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Field of Mechanical Engineering

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

**Leikkaavuudet:**

462055S-01	Virtual Engineering of Mechatronic Products, examination	0.0 op
462055S-02	Virtual Engineering of Mechatronic Products, exercise work	0.0 op
462055S	Virtual Engineering of Mechatronic Products	5.0 op

Ei opintojaksokuvauksia.

### **465110S: Strength of metallic alloys, 7 op**

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Field of Mechanical Engineering

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Jukka Kömi

**Opintokohteen kielet:** Finnish

**Leikkaavuudet:**

465064S	Strength of metal alloys	7.0 op
465081S	Physical Metallurgy I	7.0 op

Ei opintojaksokuvauksia.

## **465111S: Welding metallurgy, 8 op**

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Field of Mechanical Engineering

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Timo Kauppi

**Opintokohteen kielet:** Finnish

**Leikkaavuudet:**

465080S-03	Welding Technology, seminar	0.0 op
465080S-01	Welding Metallurgy, examination	0.0 op
465080S-02	Welding Technology, exercise work	0.0 op
465080S	Welding Metallurgy	8.5 op

Ei opintojaksokuvauksia.