

EXCHANGE STUDY PACKAGE

MAINTENANCE ENGINEERING & ASSET MANAGEMENT

Effective and efficient use of resources is an important theme in the current, global economy.

Asset owners strive to maximize the availability of their systems, resulting in a high (financial) output by a minimization of cost, while not compromising the reliability and minimizing of waste of materials and energy. This requires a completely different approach of the asset life cycle, essentially changing from a linear approach to a circular approach including an increased responsibility of the OEM in the operational phase of the life cycle.

Successful integration of this approach relies on integration of many disciplines and communication across borders. This program attempts to provide the student with the necessary knowledge to understand the main aspects of some of these fields. A part of these aspects are addressed directly in the courses, while another part is addressed in a more flexible way by project assignments, in which an elective topic is studied in a small project, to be carried out in group.

WHAT IS AN EXCHANGE STUDY PACKAGE?

Exchange Study Packages are balanced, coherent, well-structured, and self-contained sets of courses at a final Bachelor year academic level. Choosing one of these packages means you do not have to worry about selecting the right courses or managing your calendar to fit all of your classes. Simply apply for a package that suits your academic background and interest to be ensured of a well-balanced exchange programme, often consisting of 30 EC. These packages are generally accessible to students who have successfully completed the first two years of their Bachelor programme.

EXCHANGE STUDY PACKAGE

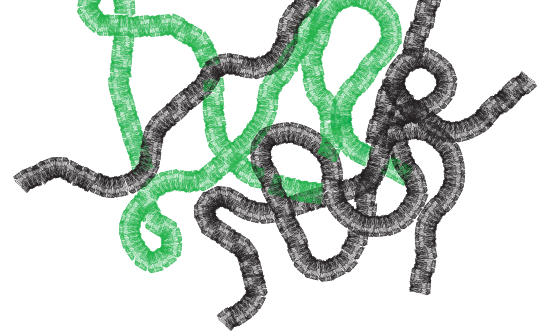
The exchange package on Maintenance Engineering & Asset Management can be divided in two modules. During the two modules an integrated design project covering both themes is done.

Integrated design project (7,5 EC)

We offer a selection of project topics to the students, in which they will work in small groups. The students will first have to get acquainted with the basic elements of maintenance engineering that apply to this case. With the knowledge gained in the courses, the students will further detail the case and formulate a maintenance strategy. Depending on the interest of the students, this can be focused on design, monitoring or management aspects, or a combination of these aspects.

Reliability Engineering & Maintenance Management (5 EC)

The reliability of advanced capital goods is an important issue, given high uptime requirements and the serious consequences of unexpected downtime. In this course, we outline the main aspects related to system upkeep, focusing on balancing system availability of capital goods versus logistics costs during the system life cycle. Specifically, we consider techniques for reliability analysis during system design, approaches to design maintenance concepts and techniques for maintenance optimization.



Integration of many disciplines and communication across borders.

First half of semester	Second half of semester
Integrated design project	
Reliability Engineering & Maintenance Management	Infrastructure management
Design for Maintenance Operations	Structural Health & Condition Monitoring

Design for Maintenance Operations (5 EC)

Design for Maintenance is an important, yet relatively new discipline. In the capital-intensive industry, maintenance expenditures can raise in price several times compared to the initial investment. In order to stay competitive in their business, owners and users of these capital assets take into account the total life cycle cost at investment and the decisions renewal for their installations.

The course gives students the opportunity to learn how to improve the design and a smooth introduction to the maintenance operation of capital assets according to theory and practice from different fields.

Infrastructure Management (7.5 EC)

The focus of this course is on the management of infrastructure facilities and the maintenance and rehabilitation process in particular. The course provides the basic concepts and tools to procure and preserve infrastructure systems most cost-effectively. It shows how to prevent costly deterioration of infrastructure and to ensure an acceptable performance level of the infrastructural asset. The course covers the development of effective maintenance and rehabilitation strategies for portfolios of infrastructure facilities as well as the planning and procurement of single maintenance and rehabilitation projects. It particularly addresses the dynamic relationship of economical, organizational and quality issues during the life cycle of infrastructure facilities.

Structural Health & Condition Monitoring (5 EC)

In this course methods and techniques to assess and monitor the condition of systems are treated. This enables to assure system safety and determine the moment for preventive maintenance. A number of specific topics will be treated: the (dynamic) behavior of the system, signal processing and sensor technologies and

the relation with predictive maintenance policies. A selection of the available Structural Health and Condition Monitoring techniques will be discussed and applied in more detail: vibration analysis (e.g. bearings)

Prior knowledge

Knowledge on Calculus, Probabilities, Statistics and Structural Dynamics/Vibrations is a prerequisite.

MORE INFORMATION TUITION FEES

To be paid at home institution.

ADMISSION CRITERIA

Last year Bachelor-level in Mechanical Engineering or equivalent.

STUDY LOAD

30 EC

START

Spring Semester

For more information about this Exchange Study Package, contact the Departmental Exchange Coordinator of the **Faculty of Engineering Technology**
utwente.nl/go/exchange-coordinators