2A FISA	CU 7.4
Semester 7	3 School ECTS - 3 Company ECTS

CU 7.4: QUALITY

Director of studies: Hind BRIL EL HAOUZI

General CU objectives:

• Know quality issues, standards and associated systems.

• Know how to define, measure and analyse the processes of an organisation.

• Know how to steer and implement a continuous improvement approach and drive change.

Consists of:

- Module 1: Management and quality systems
- Module 2: Quality tools
- Module 3: Environmental quality and corporate social responsibility (CSR)
- Industrial assessment

Hourly volume

In-person	*Self-directed study*
22.75 H Lectures	**50.00 H**
20.00 H Tutorials	
0.00 H Practicals	

Positioning of the CU in the School reference system:

Semester 7

Books to read in own time:
• Manage quality for the first time, Jean Margerand & Florence Gillet-Goinard
• Appliquer la maitrise statistique des procédés MSP/SPC, Maurice Pillet
• Les méthodes Taguchi dans l'industrie occidentale, Lance A.EALEY
Lean six-sigma, Le Voyage du Black Belt (Florent FOUQUE).

Units of skills

In accordance with the RNCP sheet

Updated on 31 March 2025

CU 7.4: QUALITY

Module 1: Management and quality systems	**Coefficient 1**
Session leaders: Hind BRIL EL HAOUZI, Marianne DUCHENE (Independent Auditor), other external session leaders.	
Teaching assistants:	
Prerequisites: none	
Teaching materials: Course notes – Presentation slides – Arche page– - Reference book - Tutorials	
Assessment methods: individual Practical examination	

Learning outcomes	**Description**	**Number of student hours (in-person)**		
		Lectures	**Tutorials**	**Practicals**
– Know the principles of Quality management; – Understand the issues and the need for the implementation of a Quality Management System (QMS). – Identify the different types of system and product certifications. – Model an organisation's processes and analyse strengths and weaknesses. – Define performance indicators to monitor, measure and analyse processes. – Define and implement change.	Introduction to quality: – The quality philosophy – The quality concepts	1.75		
	Principles of QSE integration: – Normative issues – HLS system – Advantages/disadvantages of standards – Short presentation of ISO 9001 / 14 001 / 18 001/ 45 001 – Description of the ISO 9001 standard and structure – QSE integration – Conditions for the successful completion of a certification process	1.75		
	General safety and risk management standards: – International standards (ISO, OHSAS, etc.) – Risk assessment and methods – Industrial risks and Regulated Facilities for Environmental Protection	1.75	6.00	
	Diagnostics and modelling: – Modelling of business and organisational processes according to BPMN scoring	1.75	4.00	
		7.00	**10.00**	**0.00**

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Module 2: Quality tools	Coefficient 1
Session leaders: Yinling LIU, Mélanie NOYEL	
Teaching assistants:	
Prerequisites: none	
Teaching materials: Presentation slides– Reading list– Project	
Assessment methods: individual Class assignment– Practical examination	

Learning outcomes	Description	Number of student hours (in-person)		
		Lectures	Tutorials	Practicals
– Implement a continuous improvement approach. – Identify the causes of a problem using quality tools. – Use statistical process control methods. – Set up experience plans to know the behaviour of a process or resource. – Use IT tools for static data processing.	Continuous quality improvement and quality tools: – The different stages of a continuous improvement approach – Loss analysis tools – Problem-solving tools – Testimonial on the use of these tools in a company in the wood furniture sector.	3.50	2.00	
	Reminder of static methods and tools: – Normality study – Sampling – Confidence interval	1.75		
	Statistical process control – Capability analysis – Control chart	1.75	2.00	
	Experimental plans: – Complete plan and Taguchi method – Implementation	1.75	2.00	
		8.75	**6.00**	**0.00**

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Module 3: Environmental quality and corporate social responsibility (CSR)	**Coefficient 1**
Session leaders: Caroline SIMON, Marianne DUCHENE (Independent Auditor), Paul Emmanuel HUET	
Teaching assistants:	
Prerequisites: none	
Teaching materials: Presentation slides	
Assessment methods: individual Class assignment– Practical examination	

Learning outcomes	**Description**	**Number of student hours (in-person)**		
		Lectures	**Tutorials**	**Practicals**
– Know sustainable development issues. – Know the concepts and methodology of the Life Cycle Assessment, the Environmental and Health Declaration Sheet (FDES) and the Carbon Assessment. – Analyse the results of an LCA or carbon assessment. – – Conduct audits for environmental certifications: FSC, PEFC, ISO14001.	Quality tools: Concepts and methodology: – Life Cycle Analysis (LCA) – Environmental Product Declarations (FDES) – Carbon assessment	3.50		
	Introduction to the PEFC (Recognition Program of Forest Certifications): – Definition and objectives – Operation and certification – PEFC challenges and benefits – Application and Examples	1.75		
	– Introduction to Corporate Social Responsibility (CSR) – CSR regulatory framework and implementation	1.75	4.00	
		7.00	**4.00**	**0.00**

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Industrial **assessment**	**Coefficient**
Session leaders: Apprenticeship supervisor (in company)	
Teaching assistants:	
Prerequisites: none	
Teaching materials: Project	
Assessment methods: Individual Report	

Learning outcomes	**Description**	**Number of student hours (in-person)**		
		Lectures	**Tutorials**	**Practicals**
The objective of this module is to train students, through practice, in the six-sigma approach: - Define a continuous improvement project - Measure and analyse the strengths and weaknesses of the studied system - Propose and implement improvements.	Based on an industrial project (apprentice's company, company's customers or provided by the school), this project will put into practice on a concrete example the skills acquired during this teaching unit. Phase 1: Define • Be aware of the manufacturing process and the adjacent problem. • Draft the project charter Phase 2: Measure • Carry out relevant measurement campaigns on the process in order to calculate: the sigma level of the process, the capability indices • Take all the measures necessary for the analysis of the problem Phase 3: Analyse • Carry out a statistical analysis of the data from the measurements in order to identify the cause of the problem Phase 4: Improve • Propose a solution to eradicate the problem Phase 5: Check • Set up a control card to prevent the problem from recurring • Control the process using the control chart.			
		0.00	**0.00**	**0.00**