1A FISE	CU 5.5
Semester 5	6 School ECTS

CU 5.5: PRODUCT REPRESENTATION AND PROCESS LEARNING

Director of studies: Marc JAFFRES

General CU objectives:

• Develop the detailed digital design model.

• Ensure product's technical feasibility.

• Check the proposed product's compliance with the specifications.

• Collate the definition file (General drawings, definition drawings, BOMs, sketches, etc.)

• Integrate the product into its environment.

• Develop and organise technical databases of interior, exterior and construction products.

• Ensure the exchange of information with the design.

• Implement machinery and tools

Consists of:

- Module 1: Characterisation of products and structures– Representation systems
- Module 2: Design of a digital model for construction
- Module 3: Basic Process Learning– Safety
- Module 4: Not applicable

Hourly volume

In-person	*Self-directed study*
22.75 H Lectures	**100.00 H**
20.00 H Tutorials	
40.00 H Practicals	

Positioning of the CU in the School reference system:

Semester 5

Units of skills

In accordance with the RNCP sheet

Updated on 2 June 2025

CU 5.5: PRODUCT REPRESENTATION AND PROCESS LEARNING

Module 1: Characterisation of products and structures– Representation systems	**Coefficient 2**
Session leaders: Pierre-Jean MÉAUSOONE, Alain RENAUD, Marc JAFFRES	
Teaching assistants:	
Prerequisites: none	
Teaching materials: Course notes – Presentation slides– Reading list – Reference book – Files	
Assessment methods: individual In-class exam– File	

Learning outcomes	**Description**	**Number of student hours (in-person)**		
		Lectures	**Tutorials**	**Practicals**
Define components based on an assembly drawing and a specification file. Represent an element, from views, from an assembly... Decode and analyse a definition file, a construction file. Define products Complete the views. Ensure feasibility. Dimensionally and geometrically characterise a product. Outline the details.	The representation of the works: – Representation rules and conventions. – Rules and standards for different types of structures – Constructive provisions relating to connections and assemblies – Representation of materials and products used in construction	1.75	2.00	
	Types of representations: – The different types of graphic representations are: – Sketch – Diagram – Outline – Architect's file – General drawing – Specification drawing – Layout plan. – Fittings register, masonry reservation plan – Workshop drawings: scaled-down layout – Perspectives, integration into the site – Exploded perspective	3.50	6.00	

CU 5.5: PRODUCT REPRESENTATION AND PROCESS LEARNING

Define the assembly, Set up a database and information on timber materials and products used in interior and exterior design. Set up a database and information on timber materials and products used in construction. Know the constructive systems. Understand the principles of element connections in construction. Define principles to improve the sustainability of constructions.	Product definition: – Dimensional specifications and tolerances. – geometric specifications and tolerances. – surface condition – BOMs (flat, by mounting level, tree structure, etc.) – Components characterisation. – Characterisation of joints (permanent, mobile, removable).	3.50	2.00	
	Modes of assembly of exterior and interior fittings: – The materials – The different products – Joints – Methods	1.75	2.00	
	Configuration of joints on software (Cabinet Vision)		2.00	
	Functional rating: Functional clearance – Dimension chains. – Geometric defects of parts. – Functional conditions of assemblies and guides.	1.75	2.00	
	Construction products and materials. Basic product overview: – Timber-based engineering materials – Exterior woodwork – Wall components in construction – Sustainability: constructive prevention – Assemblies	5.25		
		17.50	**16.00**	**0.00**

Updated on 2 June 2025

CU 5.5: PRODUCT REPRESENTATION AND PROCESS LEARNING

Module 2: Design of a digital model for construction	**Coefficient 1**
Session leaders: Sébastien AUCHET, Alain RENAUD	
Teaching assistants:	
Prerequisites: none	
Teaching materials: Course notes – Presentation slides – Reference book - Project	
Assessment methods: individual File	

Learning outcomes	**Description**	**Number of student hours (in-person)**		
		Lectures	**Tutorials**	**Practicals**
Define the characteristics of a modeller. Design a digital model of a product (furniture, fittings, interior joinery, etc.) using a volume modeller. Understand the design issues applied to wood material and intended for a company in the timber industry.	Design with CAD software	1.75		
	Volume modeller (SolidWorks): – Configuration – Construction tree diagram – Assembly constraints – Different design methods (in the assembly, by part, by functional surfaces, by plan mode, by diagram mode, etc.). – Use of technical libraries and a business database (PDM).			16.00
	Use of configurable product design software package (Cabinet Vision).			4.00
		1.75	**0.00**	**20.00**

Updated on 2 June 2025

CU 5.5: PRODUCT REPRESENTATION AND PROCESS LEARNING

Module 3: Basic Process Learning– Safety	Coefficient 2
Session leaders: Pierre-Jean MÉAUSOONE, Sébastien AUCHET, Alain RENAUD, Marc JAFFRES	
Teaching assistants: Cyril DEHARBE, Hervé DELAMARRE	
Prerequisites: none	
Teaching materials: Course notes – Presentation slides – Reference book	
Assessment methods: Individual File– Product made	

Learning outcomes	Description	Number of student hours (in-person)		
		Lectures	Tutorials	Practicals
Define and characterise the different processes and means of production of the 2st processing. Apply safety procedures, Implement the production means. Check products and machines.	The second wood transformation Study of wood machining processes Definition of machining operations.	3.50		
	Characterisation of furniture and joinery manufacturing circuits.		4.00	
	Safety rules, employees' safety obligations and safety procedures, PPE Traditional woodworking machines, logical manufacturing circuit. Production of products according to pre-established manufacturing files with a group work logic. Measurement and inspection of parts.			20.00
		3.50	**4.00**	**20.00**

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