

**Appendix B**

**CLUSTER Dual Master Agreement between**  
**Instituto Superior Técnico (IST) and Université Catholique de Louvain – Louvain**  
**School of Management (LSM)**

Degree programme at IST:	<b>Master Program in Industrial Engineering and Management (MEGI)</b> (120 ECTS)
Degree awarded:	M.Sc. in Industrial Engineering and Management
Language of instruction	English (Students enrolled in the programme may also choose to take courses taught in Portuguese at IST-UTL)
Degree programme at UCL:	<b>Master Ingénieur de Gestion (Master in Business Engineering - MBE)</b> (120 ECTS)
Degree awarded:	Master en Ingénieur de Gestion
Language of instruction	English (Students enrolled in the programme may also choose to take courses taught in French at LSM-LLN)
Entrance admission criteria:	Students who had completed the relevant three-year Bachelor's programme in Belgium or the three-year Bachelor's programme in Portugal or an appropriate Bachelor's programme in a third country, fulfilling national requirements and being admitted to the respective LSM-LLN (UCL) and IST Masters' Programmes
Number of students	Each institution has the right to admit up to 5 students per year to the programme. This number can vary by mutual and written agreement





**Schematic Study Plan**

Option 1			
Year	Institution	Studies	Remarks
1	LSM	Compulsory and elective courses	65 ECTS
2	IST	Courses + Master Thesis (co-supervised)	66 ECTS
Total			131 ECTS
Option 2			
Year	Institution	Studies	Remarks
1	IST	Compulsory and elective courses	64,5 ECTS
2	LSM	Courses + Master Thesis (co-supervised)	65 ECTS
Total			129,5 ECTS
<b>The schematic study plan is applicable to students originated from UCL or IST indifferently.</b> <b>The detailed study plan must be defined by the academic coordinators for each student.</b>			

**Contacts:**

<i>Academic responsible for the programme (MEGI):</i> Prof. Ana Póvoa	<i>Academic responsible for the programme (MBE)</i> Prof. Marco Saerens
<i>Contact person:</i> Prof. Miguel Amaral ( <a href="mailto:miguel.amaral@ist.utl.pt">miguel.amaral@ist.utl.pt</a> )	<i>Contact person:</i> Ms. Isabella Fontana ( <a href="mailto:Isabella.fontana@uclouvain.be">Isabella.fontana@uclouvain.be</a> )

**Signatures:**

Date:	Date:
For IST	For UCL
 Prof. Arlindo Oliveira President, Instituto Superior Técnico	 Prof. Alain Vas Dean, Louvain School of Management
 Prof. Ana Póvoa Coordinator	 Prof. Marco Saerens Coordinator

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FIRST YEAR STUDIES			
IST		LSM	
AUTUMN SEMESTER			
<b>Students must take <u>25,5 ECTS</u> from all the following <i>Compulsory courses</i></b>		<b>Students must take <u>5 ECTS</u> from the following <i>Core Courses</i></b>	
Advanced Operation Research	(4,5 ECTS)	Corporate social Responsibility	(5 ECTS)
Simulation of Processes and Operations	(4,5 ECTS)	Social Resp. in Economics life	(5 ECTS)
Introduction to Mechanical Design	(4,5 ECTS)	<b>Students must take <u>15 ECTS</u> from the following <i>Professional Focus Courses</i></b>	
Project Management	(6 ECTS)	Technological project	(10 ECTS)
		Quantitative project	(10 ECTS)
Supply Chain Management	(6 ECTS)	Project management	(5 ECTS)
		<b>Students must take <u>15 ECTS</u> from one the following <i>Options</i> (3 courses)</b>	
		Innovation 1 - LLN: Innovation Management	(15 ECTS)
		Supply Chain Management 1 - LLN	(15 ECTS)
		Management de l'information - NAMUR: Artificial Intelligence for Management	(15 ECTS)
		Supply Chain - MONS: Logistique & transport	(15 ECTS)
SPRING SEMESTER			
<b>Students must take <u>18 ECTS</u> from one of the following <i>Optional groups of courses</i></b>		<b>Students must take <u>5 ECTS</u> from the <i>Core Courses</i></b>	
<b><i>Group I</i></b>		Séminaire d'actualités économiques et managériales (5 ECTS)	
Operations Planning and Control	(6 ECTS)		
Chemical Processes Synthesis	(6 ECTS)	<b>Students must take the following <u>5 ECTS</u> from the <i>Professional Focus Courses</i></b>	
Fundamental Course in Mechanical Processing of Materials	(6 ECTS)	Analyse des données quantitatives - Quantitative data Analysis	(5 ECTS)
<b><i>Group II</i></b>		<b>Students must take <u>15 ECTS</u> from one the following <i>Options</i> (3 courses)</b>	
Multivariate Statistical Methods for Engineering and Management	(6 ECTS)	Innovation 2 - LLN: Innovation in the Knowledge Economy	(15 ECTS)
Management Control	(6 ECTS)	Innovation 3 - LLN: Innovation Managing Start-ups	(15 ECTS)
Telecommunications and Computer Networks	(6 ECTS)	Innovation 4 - LLN Managing innovative organizations	(15 ECTS)
<b>Students must take <u>21 ECTS</u> from all the following <i>Compulsory courses</i></b>		Supply Chain Management 2 -LLN	(15 ECTS)
Project Risk Evaluation and Management	(4,5 ECTS)	Sourcing and Procurement - LLN GSK Biologicals Partnership	(15 ECTS)
IST Project in Industrial Engineering and Management	(12 ECTS)	Information Systems – LLN	(15 ECTS)
Environmental Impacts	(4,5 ECTS)	<b>Students must take <u>5 ECTS</u> from <i>Elective subjects</i></b>	
			(5 ECTS)



SECOND YEAR STUDIES			
IST		LSM	
AUTUMN SEMESTER			
<b>Students must take 18 ECTS from all the following <i>Compulsory courses</i></b>		<b>Students must take 5 ECTS from the following <i>Core Courses</i></b>	
Advanced Operation Research	(4,5 ECTS)	Corporate social Responsibility	(5 ECTS)
Simulation of Processes and Operations	(4,5 ECTS)	Social Responsibility in Economics life	(5 ECTS)
Introduction to Mechanical Design	(4,5 ECTS)	<b>Students must take 10 ECTS from the following <i>Professional Focus Courses</i></b>	
Strategic Management	(4,5 ECTS)	Technological project	(10 ECTS)
		Quantitative project	(10 ECTS)
<b>Students must take 12 ECTS from the following <i>Optional Courses</i></b>		<b>Students must take 15 ECTS from one the following <i>Options</i> (3 courses)</b>	
Engineering Economics	(6 ECTS)	Innovation 1 - LLN: Innovation Management	(15 ECTS)
Logistics and Distribution	(6 ECTS)	Supply Chain Management 1 - LLN	(15 ECTS)
Devices and Networks for Logistics	(6 ECTS)	Management de l'information - NAMUR: Artificial Intelligence for Mgt	(15 ECTS)
<b>Credited Courses <sup>(1)</sup></b>		<b>Credited Courses <sup>(1)</sup></b>	
Project Management	(6 ECTS)	Project management	(5 ECTS)
Supply Chain Management	(6 ECTS)	Analyse des données quantitative - Quantitative data Analysis	(5 ECTS)
SPRING SEMESTER			
<b>Students must take 6 ECTS from the following <i>Courses</i></b>		<b>Students must take 15 ECTS from one the following <i>Options</i> (3 courses)</b>	
Operations Planning and Control	(6 ECTS)	Innovation 2 - LLN: Innovation in the Knowledge Economy	(15 ECTS)
Chemical Processes Synthesis	(6 ECTS)	Innovation 3 - LLN: Innovation Managing Start-ups	(15 ECTS)
Fundamental Course in Mechanical Processing of Materials	(6 ECTS)	Innovation 4 - LLN Managing innovative organizations	(15 ECTS)
Management Control	(6 ECTS)	Sourcing and Procurement - LLN - GSK Biologicals Partnership	(15 ECTS)
Telecommunications and Computer Networks	(6 ECTS)	Information Systems – LLN	(15 ECTS)
		<b>Credited Courses <sup>(1)</sup></b>	
		Supply Chain Management 2 – LLN: Introduction to Supply Chain Management	(5 ECTS)
<b>Master's Thesis <sup>(2)</sup></b>	<b>(30 ECTS)</b>	<b>Master's Thesis <sup>(2)</sup></b>	<b>(20 ECTS)</b>

# Annex 1 to the agreement on CLUSTER Dual Masters between UCL and IST

<sup>(1)</sup> Credited Courses IST/LSM:

<b>IST</b>		<b>LSM</b>	
Project management	(6 ECTS)	Project management	(5 ECTS)
Multivariate Statistical. Methods for Engineering and Management	(6 ECTS)	Analyse des données quantitatives - Quantitative data Analysis	(5 ECTS)
Supply Chain Management	(6 ECTS)	Supply Chain Management 2 – LLN: Introduction to Supply Chain Management	(5 ECTS)

<sup>(2)</sup> Note: In the framework of this specific agreement; paragraph 4 of Article 15 of the *Cooperation Agreement Concerning Cluster Dual Master's Degree Programmes between Université Catholique de Louvain, Louvain-la-Neuve, Belgium and Instituto Superior Técnico, Lisbon, Portugal*, does not apply.

The paragraph is replaced by the following: "The master thesis related activities represent a student minimum workload of 42 ECTS, supervised by both partners and spread over the two years of the dual master program. The total amount of work for the Master Thesis will be counted as follows:

<b>Year / Institution</b>	<b>Thesis related activities/courses</b>	<b>ECTS</b>
YEAR 1 at IST	12 ECTS (Project)	(42 ECTS)
YEAR 2 at LSM	10 ECTS (Technological project OR Quantitative project)+ 20 ECTS (Thesis)	
YEAR 1 at LSM	10 ECTS (Technological project OR Quantitative project) + 5 ECTS (Séminaire d'actualités économiques et managériales)	(45 ECTS)
YEAR 2 at IST	30 ECTS (Thesis)	