



DOUBLE DEGREE COOPERATION AGREEMENT

Between Cranfield University and Università di Pisa

Cranfield University	Università di Pisa
Cranfield, Bedfordshire, UK MK43 0AL	Lungarno Pacinotti, 43, 56126 Pisa, ITALY
represented by the Vice-Chancellor - Professor Simon Pollard	represented by the Rector Professor Riccardo Zucchi
under: the University's Charter	under: the Statute of the Università di Pisa

Given

1. the existing relations between Università di Pisa and Cranfield University
2. the wish expressed by the authorities of both institutions to establish regular collaboration in the fields of mutual interest
3. the benefits such partnership will bring to the promotion of teaching and research and for the further training of professors, scientists, and students

ARTICLE 1: PRINCIPLE

The parties resolve the setting up of a joint programme aimed at awarding a Double Degree: "Laurea Magistrale in Ingegneria Gestionale (Università di Pisa) – Logistics and Supply Chain Management MSc (Cranfield University)".

The programme will be offered each year to a defined quota of selected students. The programme will award the double-degree qualification to students that have completed the first year of the Laurea Magistrale¹ in Ingegneria Gestionale at the Università di Pisa and the MSc Logistics and Supply Chain Management MSc at the School of Management at Cranfield University, including the completion of the final MSc Project and Thesis. The Thesis will be recognised as equivalent to the Italian Tesi di Laurea. The final exam at Cranfield University will be followed by the final exam (Esame di Laurea) at the Università di Pisa, which will end the programme. The MSc qualification is formally awarded during the Graduation Ceremony at Cranfield University in June of the year following the completion of Phase 2 at Cranfield as well as the final examination in Pisa (Esame di Laurea).

ARTICLE 2: SELECTION

Candidates will be accurately selected among the Università di Pisa's students that have completed the first of the two years of the Laurea Magistrale in Ingegneria Gestionale. Selection will be based on the duly completed application form and on selection tests and requirements the two institutions consider appropriate.

ARTICLE 3: DURATION

The agreement's duration is four (4) years, and will come into force following the date of the last signature.

It may be renewed upon the two parties' mutual written consent unless one of the parties gives a two-year notice of termination. This period is required to allow all the selected students to complete their studies. In the event that this Agreement is terminated before its original date of expiry, both Parties will ensure that the enrolled students can complete their studies.

¹ "Laurea Magistrale" is the Italian post-graduate 2-year programme that requires to have completed a 3-year programme "Laurea" (equivalent to a British BSc)



ARTICLE 4: PROGRAMME CONTENTS

The programme contents encompass one year- phases, as follows:

Phase 1 – For the first year of the Laurea Magistrale in Ingegneria Gestionale at the Università di Pisa, the programme contents are those in Annexe A-1

Phase 2 For the programme of the MSc Engineering and Management of Manufacturing Systems of the School Management at Cranfield, the programme contents are those in Annexe A-2.

The syllabuses of both institutions could be annually reviewed. In the event of a change of syllabus taking place at any one of the institutions, the other will be notified immediately. In the event that such a change exceeds more than one third of the programme, the agreement will be renegotiated.

In any case, each change to the syllabus will have to be verified and reapproved according to the internal rules of each University.

ARTICLE 5: LANGUAGE

The programme will be held in Italian during Phase 1 and in English during Phase 2.

ARTICLE 6: TIMETABLE OF THE JOINT PROGRAMME

Each academic year, Phase 1 will start late September and end in late September of the following year. Phase 2 will start the next October and end in September of the following calendar year.

ARTICLE 7: PROGRAMME SITE - LIABILITY

Phase 1 will be performed at the Department of Energy, Systems, Territory and Construction Engineering (Destec) of the Università di Pisa (Italy) under Università di Pisa internal regulations.

Phase 2 will be performed in the Cranfield University campus, Cranfield (UK), and Italian students will be considered as students of the School of Management at Cranfield, under School of Management internal regulations.

The Università di Pisa as students' enrolling institution in the Double Degree will assume their liability.

ARTICLE 8: STUDENTS' SELECTION AT THE UNIVERSITA' DI PISA

The Università di Pisa will be in charge of selecting a maximum of 4 of its students among candidates who have completed the first year of Laurea Magistrale in Ingegneria Gestionale and are recommended by Mr. Dimitri Thomopoulos or another contact person the board of the degree programme will appoint.

The following criteria will be assessed:

1. The average mark of the overall results of the first year of the Laurea Magistrale.
2. The candidates English language proficiency It is required: a minimum score of 92 in the TOEFL test, or 800 in TOEIC, or 6.5 in IELTS or Cambridge CAE or equivalent examination.

ARTICLE 9: FINAL ASSESSMENT

The credits obtained at Cranfield University will be recognised by the Università di Pisa.

The final assessment regulations will be those of the Università di Pisa for the Phase 1 and those of the School of Management at Cranfield for the Phase 2.

Therefore, the Università di Pisa is entirely and exclusively responsible for the marks assigned during the first year of the joint programme and the School of Management at Cranfield will be



entirely and exclusively responsible for the marks assigned during the second year of the joint programme.

The final exam at Cranfield University will be followed by the final examination (Esame di Laurea) at the Università di Pisa. The Thesis will be written in English, but it will include a title and an abstract in Italian.

ARTICLE 10: ACADEMIC FAILURE

In the event of Academic failure at the end of Phase 2, the student will be excluded from the joint programme. The Università di Pisa will oversee all resolutions concerning the assessment of individual specific case and circumstance.

ARTICLE 11: DATE OF AWARDING OF THE DOUBLE DEGREE

The Laurea Magistrale degree at the Università di Pisa will be awarded each year in the September-October graduation session, upon the relevant assessment of the Cranfield School of Management and following the completion of Phase 2 and the examination process of article 9.

The Double Degree qualification is awarded at the Graduation Ceremony at Cranfield University in the calendar year following the completion of Phase 2 and the final exam at the Università di Pisa (Discussione della Tesi). It will be the student's liability to provide both institutions with the Thesis documents, meeting their standard format requirements.

ARTICLE 12: REGISTRATION

Students admitted to the joint programme will pay the applicable registration fees as follows: for the first year the fee will be paid to Università di Pisa, for the second year the fees will be paid both to the University of Pisa and Cranfield University according to the additional Partnership agreement signed by the Parties on an annual basis. Cranfield University will provide admitted students with guidance and support for applying to available scholarships to cover the costs of study at Cranfield University.

ARTICLE 13: STEERING COMMITTEE

The agreement's liability will be entrusted to the Presidente del Consiglio Aggregato in Ingegneria Gestionale at the Università di Pisa and Logistics and Supply Chain Management MSc Course Director of the School of Management at Cranfield University.

The Programme Directors will constantly communicate to monitor the progress of the Double Degree programme, thus assuring the programme improvement

ARTICLE 14: AGREEMENT

Two copies of this agreement will be signed, one for each institution. Both may be used for reference purposes.

ARTICLE 15: PARTIES RELATIONSHIP

This Agreement is signed by both parties given that it is a fair and honest statement of intentions and that it has no validity as a binding contract under Law in any legal system. Nothing in this Agreement could be construed as the setting of a legal partnership or joint venture. Neither of the Parties will represent itself as being an agent of the other and neither of the Parties is authorized to commit the other.

Signed on behalf of Cranfield University

Signed on behalf of Università di Pisa

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Professor Simon Pollard

Professor Riccardo Zucchi

Vice-Chancellor
Cranfield University

Rettore
Università di Pisa

Date:.....

Date:.....

ANNEX A-1

STRUCTURE AND CONTENTS OF THE FIRST YEAR AT THE “LAUREA MAGISTRALE IN INGEGNERIA GESTIONALE” (UNIVERSITA’ DI PISA)

Exam	Aim and contents	Credits (Italian system)
Statistica II (Statistics II)	To provide students with knowledge, methods, interpretive skills, and programming ability with statistical software, for topics in computational statistics, such as the analysis of multivariate data and time series of interest in industrial engineer.	6
Ricerca Operativa (<i>Operational Research</i>)	To provide knowledge about how to: • model and solve decision-making problems in production, logistics, and management using LP, ILP, and network flow models; • use optimization software; • analyze solutions and interpret them within the addressed application contexts; • evaluate correctness, robustness, and efficiency of solutions and models.	6
Gestione integrata della produzione (<i>Integrated manufacturing systems</i>)	To provide knowledge, methods and applications on modern integrated manufacturing systems, needed to carry out an efficient firm management. The following competences will be provided: 1) components of integrated manufacturing systems, 2) programming methods for the management of	12



	manufacturing systems, 3) basics of sizing and balancing of production lines, 4) examples of automated manufacturing processes	
Strategie di business and management accounting (<i>Business strategy and management accounting</i>)	General objectives of teaching are to understand the fundamental concepts (characteristics, feasibility, introduction issues) of management control systems, processes and techniques such as enablers of strategy implementation and dynamic re-definition.	9
Modellistica e simulazione dei processi di produzione discreti (<i>Modeling and simulation of discrete manufacturing processes</i>)	- To model discrete manufacturing processes such as communication systems, traffic management systems, services management systems, event based dynamical systems; - To appropriately use simulation tools; - To use queue theory and Markov chain theory in order to model and solve various industrial issues and the associated decision making problems.	6
Curriculum Digital Product Innovation		
Industrial Data Design e Applicazioni gestionali data driven (<i>Industrial Data Design and Data-Driven Management Applications</i>)	The students will acquire knowledge that are transversal to the Master Degree in Data Science and Business Informatics. In particular, the students at the end of the course will: - Be aware of the whole process of value generation in a data science process; - Know available methods for designing data-driven products and services; - Understand the differences between research projects and a development process; - Be aware of the business, environmental and social impact of data science solutions.	12



9 credits to be selected among those approved by the degree course board		9
Curriculum Fabbrica digitale - Smart Industry - Digital Operations		
Tecnologie informatiche per la gestione aziendale (<i>Information technology for business management</i>)	The student will be provided with: • Basic knowledge of business information systems and management processes. • Familiarity with fundamental concepts of business organization and supply chain management. • Ability to read and interpret economic and managerial data. • Skills in using basic digital tools and software applications. • A collaborative attitude and effective communication skills.	9
Finanza per la supply chain (<i>Supply Chain Finance</i>)	The objectives of the course is to provide students with the financial tools for taking decisions regarding equity, debts and the firm's financial structure.	6
6 credits to be selected among those approved by the degree course board		6

ANNEX A-2

STRUCTURE AND CONTENTS OF THE SECOND YEAR AT CRANFIELD UNIVERSITY – Logistics and Supply Chain Management MSc”.

Exam	Aim and contents	Credits (UK system)	Credits (Italian system)
Supply Chain Strategy and Sustainability	This module is intended to provide you with a sound foundation to the course by introducing the main concepts and principles that underpin Logistics and Supply Chain Management, including the important issue of sustainability. It presents the fundamental principles of contemporary logistics and supply chain management within a business context. This unit will explore the ways in which good practice in these fields can contribute to achieving sustainable	10	3



	competitive advantage. Overarching aspects of Supply chain sustainability are explored, such as corporate responsibility and ethics. Further the Global Supply Chain Game will enable students to understand through an interactive and competitive business game the principles of building an efficient global sourcing and supply chain under conditions of uncertainty so as to achieve high levels of profit and product availability. Global marketplaces are characterised by shortening product life cycles, increasing product variety, and highly variable demand that is difficult to forecast. The module explores how the competitive landscape is constantly changing, and the role of logistics and supply chain management in meeting the challenges raised. Research from Cranfield faculty is integrated with our own case studies, originating from a network of companies in a range of sectors to demonstrate particular concepts around agile and lean supply chains.		
Principles of Strategic Procurement	The course will explore the subject of procurement and supply in the industrial and commercial context, explaining its role and purpose within the supply chain. You will learn how procurement has developed, the skills and information needed by procurement professionals, the academic theory and knowledge accumulated on the subject area and the use of specific tools and techniques employed in managing the procurement function. In addition, we will explore and use some of the recently emerged technologies within e-procurement which are designed to improve both process and cost management.	10	3
Inventory and Operations Management	To provide you with a comprehensive overview of the role of operations in the organisation's collaborative/constructive working environment, business models and performance, within the overall context of supply chain management/external environment and enable you to analyse and design effective supply chain operations with the ultimate goal to improve the match between demand and supply.	10	3
Accounting and Finance for Supply	The aim of the Accounting and Finance module is to introduce a number of traditional and contemporary accounting approaches that will increase the	10	3



Chain Management	visibility of financial information and support management decision making.		
Analytical Techniques for Supply Chain Management	Managerial decisions in logistics and supply chain management are heavily based on quantitative analysis using models from the management science discipline. Data, models, and available software have dramatically changed the operations in manufacturing, services, and logistics sectors. The module aims to provide you with an introduction to the role and the relevance of analytical techniques in logistics and supply chain management. From simple graphs to deterministic and stochastic optimisation models, it offers transferable skills to use associated techniques for the practice of these disciplines. You will develop the ability to model and solve realistic decision problems in the context of logistics and supply chain management. This process will be facilitated by spreadsheet-based software packages where you will have an opportunity to build your own spreadsheet models with emphasis on appropriate application of methods and interpretation of model outputs.	10	3
Freight Transport	The Freight Transport module provides a sound foundation in road, rail, air and sea freight transport. The focus is primarily from a user perspective in order to provide a logistics and supply chain management viewpoint. However, in road freight, the module also covers more detailed fleet management and operational aspects, recognising that many organisations operate their own road transport fleets but also reflecting the importance of road freight as the primary inland freight mode in most geographies for national and urban freight traffic.	10	3
Information Systems and eBusiness	To provide theoretical and practical knowledge about: The value of information and the role of information systems (IS) for supply chain management. The role and impact of information systems in e-business. The opportunities and implementation challenges provided by information systems in supply chain management.	10	3



Project Management Introduction	This is an introduction to the subject. However, it is our contention that projects are the building blocks of strategy. Also, the module provides a logical and simple process by which students may approach their own modules and objectives, and may well be a valuable source of confidence for taking on major elective projects later in the year. Project Management Introduction (PMI) demonstrates how management respects no boundaries (either in terms of functional silos – departments, etc. or theoretical disciplines). PMI provides additional opportunities to practice personal communication skills, and generally the module provides a basis for personal development and increased confidence and self-awareness.	10	3
Physical Network Design	The heart of any logistics and supply chain operation is its physical network. The location of factories, distribution centres, suppliers, customers and so forth and the means by which they are linked, fundamentally affects the efficiency with which an organisation's network operates. This module aims to introduce the concepts and techniques of network theory and analysis and use these to demonstrate how physical networks are designed, redesigned and optimised and how current supply chain trends and challenges are influencing this design. All aspects of the module are illustrated by the use of practical examples, ranging from manual calculations through to computerised network optimisation software.	10	3
Warehousing	The module provides a thorough grounding in the role and operation of warehouses including the range of storage and handling equipment, the design of warehouses and the use of information technology. It emphasises on the strategic use of methods to analyse the wide range of available options. Additionally, the module focuses on developing the students' ability to discern and use appropriate warehouse design techniques. This module is taught in light of the wider context of an organisation's supply chain strategy and, thus, equips students with the means to tackle the warehousing aspects of complex supply chain problems.	10	3



Four of the elective modules from those approved by the degree course board		20	6
Individual thesis project	The individual thesis tests the ability of the student: (a) to define the project by reference to the scientific, technical and/or commercial literature, to undertake a critical appraisal of such literature and to provide a justification for the research. (b) to plan and manage the research programme. (c) to define the work to be carried out and to report the results in a clear manner. (d) to analyse the work, relate it to the work of others where appropriate and to be self critical. (e) to communicate the work, its results and analysis in a technical document	60	24