



Double Degree program (to start in 2022/2023)
Master in Informatics and Computer Engineering (IST) / Master of Science in Computer Science
(WMU)

Addendum C
to the
2020 1+1 Dual Degree Graduate Program Agreement
between Western Michigan University and Instituto Superior Técnico

Double Degree
Master in Informatics and Computer Engineering (IST) / Master of Science in Computer Science (WMU)
(to start in 2022/2023)

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- (1) In this document, 1 WMU credit is considered equivalent to 2 ECTS (European Credit Transfer and Accumulation System).
- (2) For a student to enroll in the DD MSCS program, a plan of study should be developed by the student in consultation with the graduate program advisor of the student's home institution and approved by the graduate program advisors at WMU and at IST. An individual study plan for the total duration of the mobility program, including the Master's thesis must be set up and approved by both institutions before admission of the student. The individual study plan may be revised at any time with consent from both home and host institutions.

1 – Application and entrance admission criteria

At WMU:

- Applications
Can be found online and a complete application will be forwarded to and reviewed by the CS Department Admissions Committee on a rolling basis. It is recommended to submit all application materials prior to April 1st.
- Admission Requirements
 1. Get admitted to the WMU Accelerated BS+MS degree program in CS, or
 2. Possess a baccalaureate degree in engineering, sciences or a related discipline. Students without a computer science degree or an engineering degree but with appropriate background in mathematics and science will be required to take one or more prerequisite classes from {CS1110, CS1120, CS1310, CS2230, CS3240, CS3310}.
 3. Meet Graduate College admission requirements.
 4. Possess a grade point average of 3.0 or better.
- Application Materials to be submitted
 - a. GRE test results – highly recommended, but not required
 - b. Official undergraduate transcripts - required
 - c. Online recommendation letters – recommended, not required
 - d. CV - required



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- e. Written statement – required, and this should include the student’s intended study plan
- f. Students must also submit proof of finances and acceptable English language test results as detailed on the WMU webpage: <https://wmich.edu/internationaladmissions/proficiency>
- h. Copy of passport

At IST:

- Application requirements
Students should hold or be enrolled in a BSc degree/1st cycle degree in Computer Science and Engineering, or other BSc degree/1st cycle degree which fulfils the admission requirements to the Master degree/2nd cycle in Computer Science and Engineering at IST (MEIC). The student’s overall grade should be greater than or equal to 14 out of 20. A list with the ranking of the students that meet the requirements will be published following the order of the possible admission.
- Admission requirements
Students will be selected through an evaluation of the scientific affinity between the acquired course and this double degree, their academic records and an overall assessment of their CV. The double degree is only formalized if the students are accepted in MEIC and approved according to those criteria. The candidates must demonstrate an excellent command of spoken and written English.
- Application Materials to be submitted
 - a. Passport photo – The photo will be used to generate IST student card.
 - b. Passport or identity card
 - c. Curriculum vitae in English
 - d. Mobility Learning Agreement
 - e. Motivation letter in English
 - f. Transcript of records – Bachelor Degree+ Master Degree (subjects done until now) in English



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g. Declaration of English level – Students must have at least a B2 level in English. Students can upload a language certificate issued by a language school or a declaration stating that they have good command of the English language signed and stamped by the coordinator of mobility at home University.

2 – Nominations and applications

For students from WMU to IST the nomination and complete application documents must be sent to IST by April 15th of the previous academic year.

For students from IST to WMU the nomination deadline shall be March 1st, and complete application documents must be sent to WMU by April 1st of the previous academic year. No interviews or nominations reviews are required. Students should meet with an advisor after they are admitted.

3 – Academic year start

At WMU: Late August

At IST: Mid/Late September

4 – Curricular plan

There are two curricular options:

(1) 1st year at IST and 2nd year at WMU for IST students;

(2) 1st year at WMU and 2nd year at IST for WMU students.

The detailed curricular options are presented in the following tables.



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(1) 1st year at IST and 2nd year at WMU

	1st Semester						2nd Semester						Summer I or II (WMU)	
	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter				
	Course	ECTS	WMU Cred	Course	ECTS	WMU Cred	Course	ECTS	WMU Cred	Course	ECTS	WMU Cred		
1st year @ IST	MEIC Elective	6	3	MEIC Elective	6	3	MEIC Elective	6	3	MEIC Elective	6	3		
	MEIC Elective	6	3	MEIC Elective	6	3	MEIC Elective	6	3	MEIC Elective	6	3		
	CCEIC I	3	1.5				CCEIC II	3	1.5					
2nd year @ WMU	Course				ECTS	WMU Cred	Course				ECTS	WMU Cred	ECTS	WMU Cred
	One CS6xxx or course from Table 1				6	3	One CS6xxx course or course from Table 1				6	3		
	One CS6xxx course				6	3	One CS6xxx course				6	3		
	CS7100 Independent Research				12	3	CS7000 Master's Thesis						30	6



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(2) 1st year at WMU and 2nd year at IST

	1st Semester						2nd Semester						Summer I or II (WMU)	
	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			ECTS	WMU Cred
	Course	ECTS	WMU Cred	Course	ECTS	WMU Cred	Course	ECTS	WMU Cred	Course	ECTS	WMU Cred		
1st year @ WMU (WMU BSE/MSE)	CS4900			6	3	CS4910			6	3				
	CS4610			6	3	CS5xxx			6	3				
	CS5310			6	3	CS5541			6	3				
	CS5xxx			6	3	CS5xxx					6	3		
2nd year @ IST	Course	ECTS	WMU Cred	Course	ECTS	WMU Cred	Course	ECTS	WMU Cred	Course	ECTS	WMU Cred		
	CCEIC I	3	1.5	MEIC Elective	6	3	CCEIC II	3	1.5	MEIC Elective	6	3		
	MEIC Elective	6	3				MEIC Elective	6	3					
	2nd Cycle Integrated Project in Computer Science and Engineering				12	3	Master Dissertation in Computer Science and Engineering				30	6		

WMU Students in the combined BS+MS (Accelerated) degree program must have successfully completed BS degree by the end of the 1st year.
 WMU Students in the MS degree may satisfy completion of CS4xxx-level courses through their undergraduate degree.
 A couple of WMU CS5xxx courses can be taken during Summer sessions.

In any case, it won't be allowed for a student to take two equivalent courses, as specified in Table 2.

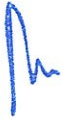


Table 1 – 5xxx courses available to IST students

WMU CS Course
CS 5260 - Parallel Computations
CS 5610 - Advanced R Programming for Data Science
CS 5700 - Computer Security and Information Assurance
CS 5750 - Secure Software Development
CS 5950 - Advanced Topics in Computer and Information Science
CYCS 5710 - Network Security Fundamentals
CYCS 5730 - Secure System Administration
CYCS 5740 - Web Application Security
CYCS 5750 - Software Development for Cybersecurity
CYCS 6730 - Installation Hardening
CYCS 6740 - Wireless Ethical Hacking
CYCS 6750 - Network Penetration Testing

CYCS are online courses. IST students can only take one per semester

Table 2 – Courses with direct equivalency between WMU and IST

WMU CS Course	IST Course
CS5260 - Parallel Computations	Parallel and Distributed Computing
CS5700 - Computer Security and Information Assurance	Network and Computer Security
CS5750 - Secure Software Development	Software Security
CS6310 - Advanced Design and Analysis of Algorithms	Advanced Algorithms
CS6320 - Intractable Problems and Approximation Algorithms	Computability and Complexity
CS6430 Database Management System Implementation	Data and Information Systems Management
CS6530 Data Mining	Data Analysis and Integration
CS6530 Data Mining	Data Science
CS6550 Advanced Operating Systems	Design and Implementation of Distributed Applications



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CS6560 - Advanced Computer Networks: Anatomy of the Internet	Performance Evaluation and Dimensioning of Networks and Systems
CS6580 - Pervasive Computing	Mobile and Ubiquitous Computing
CS6610 - Software Testing	Software Testing and Validation
CS6600 Software Engineering	Software Architecture
CS6700 - Advanced Computer and Information Security	Network and Computer Security
CS6800 - Advanced Theory of Computation	Programming Languages
CS6821 - Information Retrieval	Information Processing and Retrieval
CYCS5710 Network Security Fundamentals	Security and Management of Information Systems
CYCS5750 Software Development for Cybersecurity	Software Security
CYCS6730 Installation Hardening	Forensics Cyber-Security

Table 3 – The following IST courses are considered by WMU as CS5950 Topics in CS or CS6030 Advanced Topics in CS respectively:

WMU CS Course	IST Course
CS5950 Topics in CS	Artificial Intelligence in Games
CS5950 Topics in CS	Enterprise Architecture
CS5950 Topics in CS	Enterprise Integration
CS5950 Topics in CS	Game Design
CS5950 Topics in CS	Information Systems Project Management
CS5950 Topics in CS	Information Visualization
CS5950 Topics in CS	Introduction to Robotics
CS5950 Topics in CS	Multimedia Content Production
CS5950 Topics in CS	Programming Languages
CS5950 Topics in CS	Social Robotics and Human-Robot Interaction
CS5950 Topics in CS	User-Centered Design and Evaluation
CS5950 Topics in CS	Visual Computing
CS6030 Advanced Topics in CS	Algorithms for Computational Logic
CS6030 Advanced Topics in CS	Ambient Intelligence
CS6030 Advanced Topics in CS	Applications and Computation for the Internet of Things
CS6030 Advanced Topics in CS	Autonomous Agents and Multi-Agent Systems



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CS6030 Advanced Topics in CS	Biomedical Decision and Information Technology
CS6030 Advanced Topics in CS	Cloud Computing and Virtualization
CS6030 Advanced Topics in CS	Computational Biology
CS6030 Advanced Topics in CS	Game Development Methodology
CS6030 Advanced Topics in CS	Highly Dependable Systems
CS6030 Advanced Topics in CS	Management and Administration of It Infrastructures and Services
CS6030 Advanced Topics in CS	Natural Language
CS6030 Advanced Topics in CS	Network Science
CS6030 Advanced Topics in CS	Robotic Systems in Manipulation
CS6030 Advanced Topics in CS	Search and Planning
CS6030 Advanced Topics in CS	Software Specification
CS6030 Advanced Topics in CS	Spoken Language Processing
CS6030 Advanced Topics in CS	Three-Dimensional Vizualization and Animation
CS6030 Advanced Topics in CS	Virtual Reality

5 – Auxiliary Data

IST MSc program in Computer Science and Engineering

<https://fenix.tecnico.ulisboa.pt/cursos/meic-a/descricao>

WMU Master of Science in Computer Science

http://catalog.wmich.edu/preview_program.php?catoid=37&poid=11664&returnto=1633

WMU Master of Science in Computer Science (Accelerated)

http://catalog.wmich.edu/preview_program.php?catoid=37&poid=11665&returnto=1633

6 – Dissertation

The master's dissertation will be, preferably, co-supervised by professors from IST and WMU, and evaluated by both parties after a common oral defence, with a jury ideally containing members of both institutions.



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7 – Academic and administrative representatives

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9/23/2021
Date

Instituto Superior Técnico, University of Lisbon

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21.10.2021
Date