



Università di Camerino
Scienze e Tecnologie

COMPUTER SCIENCE

Università di Camerino

MASTER DEGREE

Laurea magistrale II livello
classe LM-18
duration 2 years
ECTS 120

School of Science and Technology

prof. David Vitali
direttore.scienze@unicam.it

Computer Science Division

Polo Informatico 'Carla Ludovici'
via Madonna delle Carceri 7
Camerino

Responsible for teaching

prof. Andrea Polini
andrea.polini@unicam.it
+39 0737 402563

web site

<http://computerscience.unicam.it>

fb Studiare Informatica a Camerino

UNICAMente informatica

Degree counsellor

prof. Roberto Gagliardi
roberto.gagliardi@unicam.it
+39 0737 402115

Tutoring

prof. Leonardo Pasini
leonardo.pasini@unicam.it
+39 0737 402562

International Mobility

prof. Leonardo Mostarda
leonardo.mostarda@unicam.it
+39 0737 402592

prof. Michele Loreti

michele.loreti@unicam.it
+39 0737 402587

Stage and Placement

prof. Fausto Marcantoni
fausto.marcantoni@unicam.it
+39 0737 402105

Nowadays, Computer Science has applications in several fields, that are very different from each other and in constant increasing number. UNICAM proposes the Master Degree in Computer Science (Laurea Magistrale) to allow graduate students in Computer Science to specialize their knowledge, competences and skills. Different specialization programmes are proposed within the Master Degree together with the possibility to gain, in addition to the UNICAM degree, a Master degree awarded by a partner University (Double Degree).

The degree, being in collaboration with European and international institutions, is completely taught in English. Students at UNICAM are immersed in an international environment with foreign students coming from different countries. They can participate to international exchange programs such as Erasmus+ or Double Degree and spend a semester or one year abroad for exams and/or thesis. Double Degree programs are available with:

- Middlesex University of London,
- Reykjavik University (RU) in Iceland,
- University of Applied Sciences and Arts Northwestern Switzerland of Olten (FHNW) in Switzerland,
- Universidad Nacional de Catamarca (UNCa) in Argentina.

Scholarships of merit for supporting the mobility are offered to exchange students through UNICAM funds (if available) or, for European locations, through the Erasmus+ program.

Students willing to enroll to the Master of Science in Computer Science must have a Bachelor Degree or an equivalent foreign degree as long as that is known to be valid under current regulations. To be admitted to the Master degree it is required to have a certification for the English language at least of level B1 of the Common European Framework of Reference for Languages, or at least 3 ECTS credits of English courses done during the Bachelor. Students with an Italian Bachelor Degree in Computer Science (L-31 class) access the course with no further checks, while for any other kind of Bachelor Degree the presence of sufficient knowledge, competences and skills of Mathematics and Computer Science will be checked before the student is admitted to the program.

The Master of Science (Laurea Magistrale) in Computer Science allows to access the "Albo Professionale dell'ordine degli ingegneri" (National Engineer's Register), section A, sector "Information Engineering". To access the Register, a student must pass a special exam (Esame di Stato), for which UNICAM is an entitled site (DPR n. 328 in 5/6/2001 published on GU n. 190 in 17/8/2001).

CISCO activities, certified by the Cisco Networking Academy Program, are available as part of the degree program. This is another important opportunity for our students as Cisco Networking Academy Program is introductory for CISCO Industrial certifications, which are highly spendable in the job market.

The Master program obtained the GRIN (Gruppo di Informatica <http://www.grin-informatica.it/opencms/opencms/grin>) certification that guarantees high quality standards with respect to Computer Science Master degrees of Italian Universities.



In the following the programmes that can be chosen within the Master Degree of Computer Science are described in details.

1st Year	CFU	Curricula	Curricula	Curricula			
English Language (B2 or C1 Level)	6	1 - Intelligent and Adaptive Systems (IAS) Modern ICT systems are composed of a large number of interconnected devices that interact with each other and with users to reach a certain goal. IAS aims at forming highly specialized data analysts and software designers capable of developing and managing these complex systems. IAS students will also learn how to use the data collected during systems execution in order to detect and prevent critical situations and to identify the countermeasures that guarantee the expected quality of service and security.	2 - Enterprise Software Systems (ESS) ESS aims at training professionals that can understand the potential of the digital transformation in complex organisations such as small and medium enterprises. In this context ESS graduates will be able to understand the dynamics underpinning the functioning of a company. The ESS graduate will learn the basic methodological and technological tools to define and identify the most appropriate ICT solutions that are essential to achieve the enterprise goals.	3 - Software and Systems for Industries (SSI) Embedded systems are increasingly being joined together into an "Internet of things" or sensor networks to enable several applications such as smart homes, manufacturing, energy distribution and transportation. SSI provides students with a knowledge and understanding of embedded system architectures, the concepts underpinning their interconnection and programming. Security, simulation and verification of distributed systems, where possible tailored to embedded systems, will be also part of the programme.			
Complex Systems Design	12						
Esame Curriculare (gruppo I)	6						
Esame Curriculare (gruppo I)	6						
Esame Curriculare (gruppo I)	6						
Esame Curriculare (gruppo I)	6						
Esame Curriculare (gruppo II)	6						
Esame Curriculare (gruppo III)	6						
2nd Year							
Esame Curriculare (gruppo I)	6				Gruppo I (42 CFU) Fundamentals of Reactive Systems (1° anno) 6 Distributed Calculus and Coordination (1° anno) 6 Systems Verification Lab (1° anno) 6 Machine Learning (1° anno) 6 Logic and Constraint Programming (1° anno) 6 Performance Analysis and Simulation (2° anno) 6 Multiagent Systems Lab (2° anno) 6 Gruppo II (6 CFU) Queueing Networks: Simulation 6 Distributed Systems Compilers 6	Gruppo I (42 CFU) Enterprise and Business Process Modeling (1° anno) 12 Process Mining (1° anno) 6 Enterprise Data Analytics (1° anno) 6 Knowledge Engineering and Business Intelligence (1° anno) 6 Enterprise Software Infrastructures (2° anno) 12 Gruppo II (6 CFU) Knowledge Management and Competence Development 6 Queueing Networks: Simulation 6 IT Security: Foundation 6	Gruppo I (42 CFU) Modeling and Simulation of Embedded Systems (1° anno) 6 Embedded Systems Architecture (1° anno) 6 IoT Digital Lab (1° anno) 6 Distributed Systems (1° anno) 6 IT Security: Foundation (1° anno) 6 Embedded Systems Programming (2° anno) 6 IT Security: Application and Technology (2° anno) 6 Gruppo II (6 CFU) Networking discovery CISCO 6 Queueing Networks: Simulation 6 Compilers 6 Systems Verification 6
Esame Curriculare (gruppo II)	6						
Software Project Management	6						
Free Choice	6						
Free Choice	6						
Tesi	30						

Esami comuni ai 3 *curricula*

Gruppo III (6 CFU)	
Theory of Complexity	6
Queueing Networks: Modeling	6
Financial Management and Strategy	6
Advanced Topics in Software Engineering	6
Networking fundamentals CISCO (I-II)	6

Information for admissions, courses and other services
at <http://international.unicam.it>

Didactic Manager

Anna Maria Santroni
+ 39 0737 402849
annamaria.santroni@unicam.it

a.y. 2017/2018

In the following the programmes that can be chosen within the Master Degree of Computer Science are described in details.

1st Year	CFU	2nd Year	CFU
English Language (B2 or C1 Level)	6	Esame Curriculare (gruppo I)	6
Complex Systems Design	12	Esame Curriculare (gruppo I)	6
Esame Curriculare (gruppo I)	6	Software Project Management	6
Esame Curriculare (gruppo I)	6	Free Choice	6
Esame Curriculare (gruppo I)	6	Free Choice	6
Esame Curriculare (gruppo I)	6	Tesi	30
Esame Curriculare (gruppo II)	6		
Esame Curriculare (gruppo III)	6		

Curricula

1 - Intelligent and Adaptive Systems (IAS)

Modern ICT systems are composed of a large number of interconnected devices that interact with each other and with users to reach a certain goal. IAS aims at forming highly specialized data analysts and software designers capable of developing and managing these complex systems. IAS students will also learn how to use the data collected during systems execution in order to detect and prevent critical situations and to identify the countermeasures that guarantee the expected quality of service and security.

Gruppo I	(42 CFU)
Fundamentals of Reactive Systems (1 st year)	6
Distributed Calculus and Coordination (1 st year)	6
Systems Verification Lab (1 st year)	6
Machine Learning (1 st year)	6
Logic and Constraint Programming (1 st year)	6
Performance Analysis and Simulation (2 nd year)	6
Multiagent Systems Lab (2 nd year)	6
Gruppo II	(6 CFU)
Queueing Networks: Simulation	6
Distributed Systems	6
Compilers	6

Curricula

2 - Enterprise Software Systems (ESS)

ESS aims at training professionals that can understand the potential of the digital transformation in complex organisations such as small and medium enterprises. In this context ESS graduates will be able to understand the dynamics underpinning the functioning of a company. The ESS graduate will learn the basic methodological and technological tools to define and identify the most appropriate ICT solutions that are essential to achieve the enterprise goals.

Gruppo I	(42 CFU)
Enterprise and Business Process Modeling (1 st year)	12
Process Mining (1 st year)	6
Enterprise Data Analytics (1 st year)	6
Knowledge Engineering and Business Intelligence (1 st year)	6
Enterprise Software Infrastructures (2 nd year)	12
Gruppo II	(6 CFU)
Knowledge Management and Competence Development	6
Queueing Networks: Simulation	6
IT Security: Foundation	6

Curricula

3 - Software and Systems for Industries (SSI)

Embedded systems are increasingly being joined together into an "Internet of things" or sensor networks to enable several applications such as smart homes, manufacturing, energy distribution and transportation. SSI provides students with a knowledge and understanding of embedded system architectures, the concepts underpinning their interconnection and programming. Security, simulation and verification of distributed systems, where possible tailored to embedded systems, will be also part of the programme.

Gruppo I	(42 CFU)
Modeling and Simulation of Embedded Systems (1 st year)	6
Embedded Systems Architecture (1 st year)	6
IoT Digital Lab (1 st year)	6
Distributed Systems (1 st year)	6
IT Security: Foundation (1 st year)	6
Embedded Systems Programming (2 nd year)	6
IT Security: Application and Technology (2 nd year)	6
Gruppo II	(6 CFU)
Networking discovery CISCO	6
Queueing Networks: Simulation	6
Compilers	6
Systems Verification	6

Esami comuni ai 3 curricula

Gruppo III	(6 CFU)
Theory of Complexity	6
Queueing Networks: Modeling	6
Financial Management and Strategy	6
Advanced Topics in Software Engineering	6
Networking fundamentals CISCO (I-II)	6

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