


Name of the Programme	<i>Master of Science in Embedded Computing Systems (2 years, 120 ECTS)</i>																																										
	<p style="text-align: center;">Study Program Director Prof. Gigliola Vaglini gigliola.vaglini@iet.unipi.it</p>																																										
Brief presentation	<p>The Master of Science in Embedded Computing Systems is jointly offered by the Institute of Communication, Information and Perception Technologies (TeCIP) of Scuola Superiore Sant'Anna and the Department of Information Engineering of the University of Pisa. It is aimed at providing the basic knowledge for approaching complex software design in embedded computing systems using the most modern design methodologies, and integrating specific knowledge in various research areas, including automatic control, signal acquisition and processing, real-time computing, sensors and actuators interfacing, software engineering, formal methods for software verification, distributed systems, computer architectures, and digital electronics.</p>																																										
Programme Overview	<p>People that graduate in Embedded Computing Systems will have a deep knowledge in the following fields:</p> <ul style="list-style-type: none"> • real-time computing systems, scheduling algorithms and resource management • microprocessor, multiprocessor and multi-core architectures • distributed systems and sensor networks • paradigms, models and tools for software design <p>The structure of the MSc Program is the following:</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #cccccc;"> <th colspan="3">FIRST YEAR</th> </tr> </thead> <tbody> <tr> <td style="width: 60%;">Optimization Methods</td> <td style="width: 20%;">6 ECTS</td> <td style="width: 20%;"></td> </tr> <tr> <td>Dependable and Secure Systems</td> <td>9 ECTS</td> <td></td> </tr> <tr> <td>Computer Architecture and Digital Systems</td> <td>12 ECTS</td> <td></td> </tr> <tr> <td>Digital Control Systems and Mechatronics</td> <td>12 ECTS</td> <td></td> </tr> <tr> <td>Design of Embedded Systems</td> <td>9 ECTS</td> <td></td> </tr> <tr> <td>Real Time and Distributed Systems</td> <td>12 ECTS</td> <td></td> </tr> <tr> <td>TOTAL</td> <td>60 ECTS</td> <td></td> </tr> <tr style="background-color: #cccccc;"> <th colspan="3">SECOND YEAR</th> </tr> <tr> <td>Industrial Applications</td> <td>12 ECTS</td> <td></td> </tr> <tr> <td>Virtual and Augmented Reality</td> <td>6 ECTS</td> <td></td> </tr> <tr> <td>Internet of Things</td> <td>6 ECTS</td> <td></td> </tr> <tr> <td>Computational Intelligence</td> <td>6 ECTS</td> <td></td> </tr> <tr> <td>Free activity</td> <td>9 ECTS</td> <td></td> </tr> </tbody> </table>	FIRST YEAR			Optimization Methods	6 ECTS		Dependable and Secure Systems	9 ECTS		Computer Architecture and Digital Systems	12 ECTS		Digital Control Systems and Mechatronics	12 ECTS		Design of Embedded Systems	9 ECTS		Real Time and Distributed Systems	12 ECTS		TOTAL	60 ECTS		SECOND YEAR			Industrial Applications	12 ECTS		Virtual and Augmented Reality	6 ECTS		Internet of Things	6 ECTS		Computational Intelligence	6 ECTS		Free activity	9 ECTS	
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Academic Calendar	<p>Most courses are taught on a semester base</p> <p>Fall Semester: End of September (approx) → Mid December (approx)</p> <p>Spring Semester: End of February (approx) → End of May (approx)</p>									
Professional perspectives	<p>In the last thirty years, embedded computing systems had an exponential growth in areas like industrial automation, avionics, automotive, telecommunications, consumer electronics, and robotics. The program has been established and is specifically intended to train specialized professionals able to design, develop and analyze highly complex computer systems; these objectives are pursued by providing a thorough education in different fields (real-time operating systems, algorithms, resource management, microcontroller systems, multicore systems, distributed systems, sensor networks, software engineering, programming in a distributed environment, etc.). Graduates in Embedded Computing Systems will easily find employment in small, medium and large companies involved in industrial automation, avionics, automotive systems, telecommunications and robotics.</p> <p>Examples of possible professional profiles are:</p> <ul style="list-style-type: none"> - Responsible for the design and development of software - Analyst / designer of dedicated systems - System integrator 									
Admission	<p>The admission to the Master of Science in Embedded Computing Systems is based on a public competition. The aim is to select at most 40 candidates with a selection process divided into two sessions resulting as follows:</p> <ul style="list-style-type: none"> -Up to 20 positions dedicated to non-EU applicants (citizens of countries not belonging to the European Union) not resident in Italy. -20 positions dedicated to EU applicants (and non-EU applicants resident in Italy). If less than 20 non-EU selected applicants are joining the Master, the number of positions available for the EU applicants session will be increased by the positions left vacant from the non-EU applicants session. <p>Selection of applicants is based, in both sessions, upon the assessment of all the submitted documents and an interview. Applicants admitted to the interview are informed via e-mail (sent to the account indicated in the application form) about the score received, as well as time and date of the interview. Interviews are held through video conference using Skype. A candidate not attending the interview within the scheduled slot will be excluded from the final ranking list.</p>									

	<p>The selection process is carried out by a Selection Committee, jointly nominated by the Director of the Department of Information Engineering and the Director of the TeCIP Institute.</p> <p>By the end of the selection procedures, the Selection Committee issues a final ranking list of the applicants for each selection session.</p> <p>Selected applicants need to fulfil the requirements enrolling to the Master of Science in Embedded Computing Systems at the University of Pisa, according to the positions available for each session of the selection.</p>
<p>Requirements for Admission</p>	<p>By the stated deadlines applicants must hold a Laurea di I livello (Bachelor of Science - First Cycle Degree) awarded by an Italian University, with a curriculum studiorum including at least the following minimal qualifications in terms of gained credits (CFU):</p> <ul style="list-style-type: none"> -at least 36 CFU in one or more of the following scientific-disciplinary sectors: Mat/03, Mat/05, Mat/08, Mat/09, Fis/01 -at least 48 CFU in one or more of the following scientific-disciplinary sectors: Ing-Inf/05 (at least 12 CFU), INF/01 -at least 18 CFU in one or more of the following scientific-disciplinary sectors: Ing-Inf/03, Ing-Inf/04, Ing-Inf/01, Ing-Ind/31, Ing-Ind/35. <p>At least the following “Lauree di I livello” satisfy such minimal qualifications:</p> <ul style="list-style-type: none"> -Information Engineering (corresponding to Classe 9 - Ingegneria dell’Informazione, according to the Italian system of first cycle degrees classes as per DM 509/99); -Information Engineering (corresponding to Classe L-8 - Ingegneria dell’Informazione, according to the Italian system of first cycle degrees classes as per DM 270/04). <p>Other “Lauree di I livello” awarded by an Italian University in other subjects will be also accepted provided that the applicant possesses the minimal qualifications stated above.</p> <p>Bachelor of Science or equivalent first cycle degree awarded by a foreign University after the completion of at least three-year course of study, in one of the subjects previously listed or equivalent (Bachelor in Computer Science, Computer Engineering, Electrical Engineering, Electronic Engineering, Information Technology, etc.).</p> <p>As far as the selection reserved to EU Applicants, under specific terms and conditions, admission is extended also to non-graduated applicants. In this case, a successful application will be conditional to the subsequent completion of the degree and the transmission of adequate documentation not later than December of the current academic year.</p>

	In addition to the academic degree, applicants must also hold a good knowledge of English, at least corresponding to an intermediate level, which will be verified by the selection committee during the interview.
Deadlines for application	Applicants are requested to apply online following instructions at: http://mecs.sssup.it/howtoapply.htm by Non-EU applicants: May 31, 2012 at 1 pm (GMT) EU applicants: August 3rd, 2012 at 1 pm (GMT)
Websites and contacts	http://ce.iet.unipi.it/mecs Study Program Director – Prof. Gigliola Vaglini, gigliola.vaglini@iet.unipi.it Coordination Manager - Ms. Barbara Mancini, barbara.mancini@ing.unipi.it Administration Office - mecs@sssup.it