Michele Persiani

michele.persiani4@unibo.it • people.cs.umu.se/michelep/ • Phone: +39 3717658819
Citizenship: Italian
From: Bologna, Italy
Resident in: Bologna, Italy
ORCID: 0000-0001-5993-3292

Current Placement

Department of Computer Science - Science and Engineering, University of Bologna, Bologna, Italy
Research fellow

Research topic
Collaborator in the Ms-Rehab project, a web platform to provide cognitive excercises to Multiple Sclerosis (MS) patients. Research involves development of the web platform as well as conducting trials with patients affected from MS.

Education

2017 – 2022	**PhD in Computer Science**, Umeå University, Umeå, Sweden Area of study: *Artificial Intelligence, Human-Robot Interaction, Explainable AI* Theme: Implicit Intent Recognition from Speech and Task Planning for Human-Robot Interaction Supervisors: Prof. Thomas Hellström, Prof. Ola Ringdhal **Thesis** Title: *Expressing and Recognizing Intentions* Contents: The thesis discusses and defines novel methodologies for theory of mind reasoning in artificial agents in the context of Human-Robot Interaction and Explainable AI. As result, the thesis introduces a novel architecture for theory of mind reasoning to aggregate multiple methodologies from the literature in AI and XAI such as intention recognition, transparency, legibility, as well as deceiving agent behaviors like deceptive or obfuscating behaviors. **Licentiate Degree** Title: *Computational Methods for Intent Recognition in Robotic Systems*

2013 – 2016	**Master's Degree in Computer Science**, Politectico di Milano, Milano, Italy Area of study: *Artificial Intelligence, Machine Learning, Data Mining, Robotics* Grade: 102/110 **Thesis** Title: *A Working Memory Model Improves Cognitive Control in Agents and Robots* Contents: The thesis explores the introduction of a new cognitive module inside the bio-inspired robot control system IDRA. The newly introduced module serves to simulate the cognitive processes of working memory of the agent. The thesis shows how the working memory makes the agent exhibits emergent capabilities to solve challenging problems such as planning and navigation. Supervisor: Prof. Giuseppina Gini
2009 – 2013	**Bachelor's degree in Computer Science**, Università di Bologna, Bologna, Italy Area of study: *Computer Science* Grade: 98/110 **Thesis** Title: *Web Control System for UAV Drones* Contents: In the thesis a web platform to control Unmanned Aerial Vehicles (UAV) drones is developed. The platform allowed users to control drones through portable devices' web browsers. This was achieved by defining an HTML server receiving commands through web sockets to which users would send commands to, while sending coupled commands to the drone. Supervisor: Prof. Lorenzo Marconi
2003 – 2008	**High School Diploma**, Istituto Tecnico Odone Belluzzi, Bologna, Italy Area of study: *Computer Science, Industry*

Other Education

2017	3rd International Summer School on Social Human-Robot Interaction

Research experience

2025 – Present	**Research Fellow at University of Bologna** – Bologna, Italy Research fellowship in the MS-rehab project, a web platform to provide cognitive exercises to patients affected with multiple sclerosis. Research tasks involve the development and maintenance of this platform as well as conducting user studies with MS affected patients. Supervisor: Mauro Gaspari (University of Bologna)
2023 – 2024	**Postdoctoral researcher at Umeå University** – Umeå, Sweden This research is in collaboration with Region Vasterbotten and regards the development of an intelligent assistant in the context of health-care to support health professionals in the task of managing pillboxes at local hospitals. The research involves the study and definition of Human-Computer Interaction architectures for Augmented Reality, as well as the creation, maintenance, and querying of OWL ontologies with relevant information. The introduction of eHealth practices is studied through user studies. Supervisor: Juan Carlos Nieves Sanchez (Umeå University)
2022	**Research Engineer in the Interactive Intelligent Systems group at Umeå University** – Umeå, Sweden Research and development of a virtual assistant for tracking activities of older adults in the context of health care. The goal of the research was two-fold: to measure acceptance of older adults of virtual assistant agents, and to create activity-theory models of older adults' daily activities. Supervisor: Helena Lindgren (Umeå University)
2019	**Internship at Franhofer IPA (Stuttgart, Germany)** Research internship founded through SOCRATES. I participated at the development of the planning system based on PDDL for a service robot operating in care houses. Supervisors: Birgit Graf (Fraunhofer IPA), Thomas Hellström (Umeå University)
2017 – 2022	**Research as PhD student at Umeå University** – Umeå, Sweden Research as PhD student in the Intelligent Robotics group. The research contributed to the fields of Artificial Intelligence, Human-Robot Interaction and Explainable AI. Supervisor: Thomas Hellström (Umeå University)
2017 – 2020	**Social Cognitive Robotics in the European Society (SOCRATES)** Research as an Early Stage Researcher in SOCRATES (*http://www.socrates-project.eu*), an European Training Network under the Marie Sklodowska-Curie grant agreement no 721619 in the European Horizon 2020 innovation programme. The project included 8 European universities and involved more that 30 collaborators. The focus of the project was research and development of robots for social and health care. Supervisor: Thomas Hellström (Umeå University)

Teaching experience

2025	**Teaching assistant, Operating Systems (University of Bologna)** Laboratory tutor for Operating Systems students. Correction of assignments and exams. **Teaching assistant, Bioinformatics (University of Bologna)** Laboratory tutor for Operating Systems students. Correction of assignments and exams. **Teaching assistant, Basic Programming Skills (University of Bologna)** Laboratory tutor for Applied Pharmaceutical Sciences students.
2020 – 2021	**Teaching assistant, Human-Robot Interaction (Umeå University)** Robot programming in Python and Choregraphe for Pepper robot. Correction of assignments.
2021	**Tutor for the Master Thesis of students in Human-Robot Interaction (Umeå University)** • *Implementation of Social practices on the Pepper Robot in the Elderly Care Domain - AI Planning with social practices* • *Intelligible dialogue manager for social robots*
2019	**Presenter at the HPC2N workshop "Tensorflow and Deep learning" (Umeå University)** Deep Neural Networks models (Transformers, BERT) for applications in Natural Language Processing.

Other work experience

2022	**AI Consultant at Blast Bit Enterprises** – Umeå, Sweden Design of algorithms for procedural content generation in games, focusing on the procedural generation of game scenarios and AI agents capable of autonomous planning and acting in these scenarios.

Organization of Scientific Events

2024	**TheoriseHAI: Shaping Human-Agent Interactions Through Interdisciplinary Theories** Workshop at the 12th International Conference on Human-Agent Interaction (HAI 2024) focusing on new and old theories for effective HAI.
2018	**International PhD Conference on Safe and Social Robotics** Jointly organized by the SECURE and SOCRATES EU project fellows and co-located with IROS 2018, 29-30 September 2018, Madrid, Spain.

Academic service

2025	**PC member per European Conference on Artificial Intelligence (ECAI 2024)**

	Reviewer for Paladyn Journal of Robotics, Intelligent Agents, and Artificial Intelligence
2024	**PC member per European Conference on Automated Planning and Scheduling (ICAPS 2024)** **PC member for Medical Informatics Europe (MIE 2024)** **PC member for European Conference on Artificial Intelligence (ECAI 2024)** **Reviewer for Paladyn Journal oh Behavioral Robotics** **Reviewer for Frontiers in Robotics and AI, section Human-Robot Interaction**
2023	**PC member for Medical Informatics Europe (MIE 2023)** **PC member for Variable Autonomy for Human-Robot Teaming workshop (HRI 2023)**
2019 – 2020	**PC member for Quality of Interaction in Socially Assistive Robots workshop (ICSR 2019/2020)**
2019	**Reviewer for Paladyn Journal Special Issue Quality of Interaction in Socially Assistive Robots** **PC member for International Conference on Social Robotic (ICSR 2019)**
2018 – 2021	**Reviewer for the student conference course (Umeå University)**
2018	**PC member for PhD Conference on Safe and Social Robotics (SSR 2018)**

University service

2019 – 2022	**Chair of the PhD section of the student union (Umeå University)** Organization of meeting, seminars and events for PhD students.
2018 – 2019	**Board member of the PhD section of the student union (Umeå University)** Organization of meeting, seminars and events for PhD students.

Technical skills

Computer programming

- Programming languages: Python (Numpy, Sklearn, Tensorflow, Keras, Pandas), Java, C#, C, C++
- Database (SQL, RDF, SPARQL)
- Mobile devices (Android, Universal Windows Platform)
- Web applications (Html, Javascript, Spring, Java Server Pages)
- Unity (Mixed Reality Toolkit)
- Eclipse, IntelliJ, PyCharm, Android Studio

Robot Programming

- ROS
- Matlab
- Choregraphe (Pepper, NAO robot)

Software Engineering

- Object-oriented programming
- Design of database schema
- Version Control Systems (Git)
- Build systems (Gradle, Maven, cmake)
- Protege (OWL)

Language

Italian (mother tongue)
English (fluent)

Appendix: Publications list

[1] M. Persiani, E. Guerrero, A. Brännström, K. Kilic, and T. Kampik, "Fantastic argumentation tools and where to find them," in *5th International Workshop on Systems and Algorithms for Formal Argumentation (SAFA)*, 2024.

[2] M. Persiani, "Pyplaf: Probabilistic logical argumentation frameworks in python," in *10th International Conference on Computational Models of Argument (COMMA)*, 2024.

[3] M. Maitreyee, M. Persiani, R. Chen, and L. Li, "Theorisehai: Shaping human-agent interactions through interdisciplinary theories," in *Proceedings of the 12th International Conference on Human-Agent Interaction*, HAI '24, (New York, NY, USA), p. 462–464, Association for Computing Machinery, 2024.

[4] H. Lindgren, V. Kaelin, A. M. Ljusbäck, M. Tewari, M. Persiani, and I. Nilsson, "To adapt or not to adapt — older adults enacting agency in dialogues with an unknowledgeable agent," in *32nd ACM Conference on User Modeling, Adaptation and Personalization (UMAP)*, 2024.

[5] M. Persiani, H. Norberg, M. Blusi, and J. C. Nieves, "Smap: Smart personalized medication assistant to help nurses in medication adherence," in *Workshop on Intelligent Management Information Systems (IMIS @ECAI)*, 2023.

[6] M. Persiani, *Expressing and recognizing intentions*. PhD thesis, Department of Computing Science, Umeå University, 2022.

[7] M. Persiani and T. Hellström, "The mirror agent model: A bayesian architecture for interpretable agent behavior," in *Explainable and Transparent AI and Multi-Agent Systems* (D. Calvaresi, A. Najjar, M. Winikoff, and K. Främling, eds.), (Cham), Springer International Publishing, 2022.

[8] M. Persiani and T. Hellström, "Informative communication of robot plans," in *International Conference on Practical Applications of Agents and Multi-Agent Systems (PAAMS)*, 2022.

[9] M. Persiani and T. Hellström, "Policy regularization for legible behavior," *Neural Computing and Applications*, vol. 35, no. 23, pp. 16781–16790, 2023.

[10] M. Persiani and T. Hellström, "Policy regularization for legible behavior (extended abstract)," in *Workshop on Human-aligned Reinforcement Learning for Autonomous Agents and Robots (HARL @ICRA)*, 2021.

[11] M. Tewari and M. Persiani, "Towards we-intentional human-robot interaction using theory of mind and hierarchical task network," in *5th International Conference on Computer-Human Interaction Research and Applications (CHIRA)*, 2021.

[12] M. Persiani and T. Hellström, "Inference of the intentions of unknown agents in a theory of mind setting," in *Advances in Practical Applications of Agents, Multi-Agent Systems, and Social Good. The PAAMS Collection: 19th International Conference*, Springer, 2021.

[13] M. Persiani and T. Hellström, "Probabilistic plan legibility with off-the-shelf planners," in *Workshop on Planning and Robotics (PlanRob @ICAPS)*, 2021.

[14] M. Persiani, "Computational models for intent recognition in robotic systems," *Licentiate Thesis. Department of Computing Science, Umeå University*, 2020.

[15] M. Persiani and T. Hellström, "Intent recognition from speech and plan recognition," in *Advances in Practical Applications of Agents, Multi-Agent Systems, and Trustworthiness. The PAAMS Collection: 18th International Conference*, pp. 212–223, Springer, 2020.

[16] M. Persiani, C. Odabasi, F. Graf, M. Kalra, T. Hellstroem, and B. Graf, "Traveling drinksman-a mobile service robot for people in care-homes," in *52th International Symposium on Robotics (ISR)*, 2020.

[17] M. Tewari and M. Persiani, "Variational autoencoding dialogue sub-structures using a novel hierarchical annotation schema," in *6th IEEE Congress on Information Science and Technology (CiSt)*, 2021.

[18] M. Persiani and M. Tewari, "Mediating joint intention with a dialogue management system," in *1st International Workshop on New Foundations for Human-Centered AI (NeHuAI)*, 2020.

[19] M. Persiani and T. Hellström, "Unsupervised inference of object affordance from text corpora," in *22nd Nordic Conference on Computational Linguistics (NoDaLiDa)*, 2019.

[20] M. Persiani, A. M. Franchi, and G. Gini, "A working memory model improves cognitive control in agents and robots," *Cognitive Systems Research*, vol. 51, pp. 1–13, 2018.

[21] M. Persiani and T. Hellström, "Intent recognition for robotic applications," in *Workshop Robots in Contexts (@ECCE)*, 2017.

[22] M. Persiani, A. M. Franchi, and G. Gini, "From working memory to cognitive control: Presenting a model for their integration in a bio-inspired architecture," *Cognitive Robot Architectures*, p. 67, 2017.

Appendix: Ph. D. Diploma supplement

KOPIA

APOSTILLE

(convention de La Haye du 5 octobre 1961)

1. Country: **Sweden**

   This public document

2. has been signed by **Martin Öberg**

3. acting in the capacity of **Official**

4. bears the seal/stamp **Umeå University**

CERTIFIED

5. At Umeå, Sweden

6. **27th of February 2024**

7. by **Anders Johnsson, Notary Public in Umeå, Sweden**

8. Number: **6914**

9. Seal/stamp:

10. Signature:

.....

Anders Johnsson

UMEÅ UNIVERSITET

Examensbevis | *Degree Certificate*

Filosofie doktorsexamen

vid Teknisk naturvetenskaplig fakultet

Ämne: Datavetenskap

Degree of Doctor of Philosophy
at Faculty of Science and Technology

Subject: Computing Science

Michele Persiani

19891115-7959

uppfyller i enlighet med bestämmelserna i högskoleförordningen (1993:100) samt rektors beslut kraven för filosofie doktorsexamen.

has been awarded a Degree of Doctor of Philosophy (PhD) in accordance with the provisions of the Higher Education Ordinance (1993:100) and examination regulations issued by the Vice Chancellor of Umeå University.

Umeå den 10 oktober 2022
Umeå 10 October 2022

På rektors vägnar
On behalf of the Vice-Chancellor's office

Maria Rudberg

Examenshandläggare
Degree Officer

Umeå universitet/Umeå University
Tel/Phone +46 90 786 50 00

Kopians överensstämmelse med originalet intygas
We hereby certify that this is a true copy

UMEÅ UNIVERSITY

Marta Åberg

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Michele Persiani
Namn/*Name*

19891115-7959
Personnummer/ *Personal identity number*

uppfyller kraven för filosofie doktorsexamen.
has been awarded a Degree of Doctor of Philosophy.

Kurs *Course*	Högskolepoäng *Credits*
3rd Summer School on Social Human-Robot Interaction, Alentejo Portugal *3rd Summer School on Social Human-Robot Interaction, Alentejo Portugal*	1,0
Oral presentation *Oral presentation*	1,5
Writing Science *Writing Science*	5,0
Human-Robot Interaction 5DV183 *Human-Robot Interaction 5DV183*	7,5
Reading course: Basics of Dialogue management *Reading course: Basics of Dialogue management*	2,0
Human-Robot Interaction *Human-Robot Interaction*	7,5
Research Methodology in Computing Science, Publishing and Presentation Techniques *Research Methodology in Computing Science, Publishing and Presentation Techniques*	7,5
Introduction to research ethics *Introduction to research ethics*	2,0
Philosophy of science *Philosophy of science*	2,0
Trends in interactive intelligent environments *Trends in interactive intelligent environments*	4,0
Algorithms and Systems for Autonomous Vehicles *Algorithms and Systems for Autonomous Vehicles*	7,5
Arbete, teknik och genus *Work, Technology, Gender*	5,0
Doctoral Student Days in Computing Science - Individual Presentations of Ongoing Research in Seminar Format *Doctoral Student Days in Computing Science - Individual Presentations of Ongoing Research in Seminar Format*	7,5
Doktorsavhandling *Doctoral thesis*	180,0

Avhandlingens titel
Title of Doctoral Thesis
Uttrycka och känna igen avsikter
Expressing and Recognizing Intentions

Umeå universitet/Umeå University
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UMEÅ UNIVERSITY

Examen utfärdad: den 10 oktober 2022
Datum för avslutade studier: den 16 september 2022
Date of issue: 10 October 2022
Date of completion of studies: 16 September 2022

Filosofie doktorsexamen utfärdas på forskarnivå och uppnås efter att doktoranden fullgjort en utbildning om 240 högskolepoäng inom ett ämne. I dessa poäng ingår en vetenskaplig avhandling om minst 120 högskolepoäng. För kurs och avhandling ges endast betyget godkänd. Ett års heltidsstudier om 40 veckor motsvarar 60 högskolepoäng.

A Degree of Doctor of Philosophy is awarded after the doctoral student has completed a study programme of 240 credits (ECTS) in a subject area at the third cycle. The doctoral student must have received a passing grade on a thesis worth at least 120 credits. The only grade awarded for examinations and thesis is 'Pass'. An academic year is equivalent to 40 weeks of full-time study and comprises 60 credits.

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DIPLOMA SUPPLEMENT

This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international "transparency" and fair academic and professional recognition of qualifications (diplomas, degrees, certificates etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.

1. Information identifying the holder of the qualification

1.1 Family name(s) Persiani

1.2 Given name(s) Michele

1.3 Date of birth (day/month/year) 15 November 1989

1.4 Student identification number or code (if available) 19891115-7959

2. Information identifying the qualification

2.1 Name of qualification and (if applicable) title conferred (in original language)
Filosofie doktorsexamen (Degree of Doctor of Philosophy)

2.2 Main field(s) of study for the qualification
Computing Science

2.3 Name and status of awarding institution (in original language)
Umeå universitet (Umeå University).

State higher education institution with status of university.

2.4 Name and status of institution (if different from 2.3) administering studies (in original language)
Not applicable.

2.5 Language(s) of instruction/examination
Swedish and English

3. Information on the level of the qualification

3.1 Level of qualification
Forskarnivå/Third-cycle QF-EHEA SeQF 8/EQF 8.For information on the Swedish higher education system, see section 8.

3.2 Official length of programme
240 högskolepoäng (credits)/240 ECTS. Duration of 4 years of full-time studies. A normal 40-week academic year corresponds to 60 credits (högskolepoäng). One credit corresponds to 1 ECTS credit.

3.3 Access requirement(s)
There are general and (additional) specific entry requirements that should be fulfilled for access to higher education within all cycles. The general entry requirements for third-cycle studies are a second-cycle qualification, or completed courses worth at least 240 credits (of which 60 credits are at second-cycle level) or the equivalent level of knowledge acquired in Sweden or abroad. Furthermore, for entry to third-cycle studies, the applicant must be deemed able to benefit from the education.

4. Information on the contents and results gained

4.1 Mode of study
Full-time equivalent.

4.2 Programme requirements
The Swedish Higher Education Act takes account of 1) courses and study programmes based on scholarship or artistic practice and on proven experience, and 2) research and artistic research as well as development work. Reference to research below also applies to artistic research.

According to the Swedish Higher Education Act, third-cycle courses and study programmes shall be based fundamentally on the knowledge acquired by students in first- and second-cycle courses and study programmes, or its equivalent. In addition, third-cycle study programmes shall develop the knowledge and skills required to be able to undertake autonomous research. (For further information, see The Swedish Higher Education Act and The Higher Education Degree Ordinance: www.uhr.se/en)

4.3 Programme details (e.g. modules or units studied), and the individual grades/marks/credits obtained (if this information is available on an official transcript this should be used here)
A Degree of Doctor is awarded after the third-cycle student has completed a study programme of 240 credits in a subject in which third-cycle teaching is offered.

For the Degree of Doctor the third-cycle student shall have been awarded a pass grade for a research thesis (doctoral thesis) of at least 120 credits.
For more information, see Degree Certificate/Official Transcript.

4.4 Grading scheme and, if available, grade distribution guidance
There is no national grading system in Sweden. Higher education institutions may determine which grading system is to be used. For more information, see Degree Certificate/Official Transcript.

4.5 Overall classification of the qualification (in original language)
Not applicable for Swedish qualifications, since no overall grade is awarded for a degree and students are not ranked. For example, Grade Point Average (GPA) and other ranking systems are not used in Sweden.

5. Information on the function of the qualification

5.1 Access to further study
Not applicable. Doktorsexamen is the highest degree in the Swedish higher education system.

5.2 Professional status (if applicable)
Not applicable.

6. Additional information

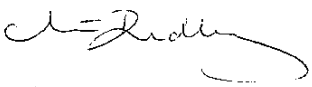
6.1 Additional information
None.

6.2 Further information sources
Umeå University (Umeå Universitet), SE-901 87 Umeå, phone + 46 90 786 50 00, www.umu.se
The Swedish Council for Higher Education (Universitets- och högskolerådet) has been commissioned to act as the Swedish NARIC and is also part of ENIC. The ENIC-NARIC office provide information on education in Sweden. Please see: http://www.uhr.se
For information on Professional Qualifications Directive, Swedish National Assistance Centre for the Recognition of Professional Qualifications (Professional Qualifications Directive 2005/36/EC): pqinfo@uhr.se
For information on quality assurance, Swedish Higher Education Authority: http://english.uka.se

7. Certification of the supplement

7.1 Date 10 October 2022

7.2 Signature



Maria Rudberg
For a verification of this Degree Certificate contact Umeå University, phone + 46 90 786 50 00, www.umu.se

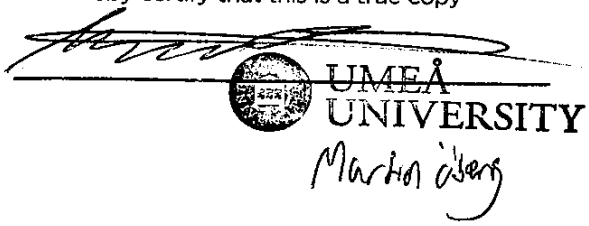
7.3 Capacity Degree Officer

7.4 Official stamp or seal
Not applicable.

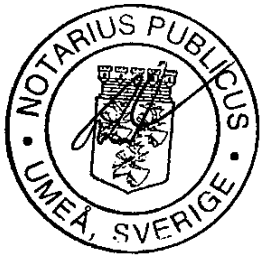
8. Information on the national higher education system

See attached information on the The Swedish higher education system.

Umeå universitet/Umeå University
Tel/Phone: +46 90 786 50 00
Kopians överensstämmelse med originalet intygas
We hereby certify that this is a true copy



Marina Öberg



Swedish Council for Higher Education

europass

The Swedish higher education system

According to legislation **after** 1 January 2007.
The following description is approved by the Swedish Council for Higher Education.

The Swedish higher education system is based on the Swedish Higher Education Act (SFS 1992:1434) and the 1 January 2007 amendments to the Higher Education Ordinance (1993:100). The following description is a short summary based on the legislation regulating the Swedish higher education system.

Qualifications from all higher education institutions (universities, university colleges and independent higher education providers) that are recognized by the Government are of equal official value. The same legislation governs all state higher education institutions. All Swedish degrees are issued in accordance with the same degree ordinances.

Quality assurance

The Swedish Higher Education Authority has been responsible for the quality assurance system for all higher education since 1 January 2013. For more information, please visit www.uka.se. Evaluation reports are available to the public.

National Qualification Frameworks

The Swedish Higher Education Act and the Higher Education Ordinance have been amended in accordance with the agreements reached as part of the Bologna Process, including the Qualifications Frameworks in the European Higher Education Area (QF-EHEA). Legislation for a three-cycle structure of higher education started to apply in July 2007, and is now the only one in use in all Swedish higher education. Transitional provisions apply to courses and programmes that started prior to this. For more information, please visit www.uhr.se/en or enic-naric.net.

In 2015, the Swedish Government decided on a national qualifications framework (SeQF), based on the European Qualifications Framework for Lifelong Learning (EQF). The SeQF has eight levels that are in accordance with the EQF levels. Higher education qualifications are at levels six to eight. For more information, please visit www.seqf.se.

Credit system

Sweden has a system of credits (högskolepoäng); a normal 40-week academic year corresponds to 60 credits. The system is compatible with ECTS credits.

Grading system

There is no national grading system in Sweden. Higher education institutions may determine which grading system is to be used. No overall grade is awarded for a degree and students are not ranked. For example, Grade Point Average (GPA) and other ranking systems are not used in Sweden.

Access and admission

There are general and specific entry requirements for access to higher education within all cycles. The specific entry requirements vary according to the field of higher education and/or should be essential for students to be able to benefit from the course or study programme. The number of places is limited on all study programmes and courses.

The general entry requirements for first-cycle studies are the same for all higher education. General entry requirements can be attained by completing an upper-secondary school programme, via adult education at upper-secondary school level or the applicants achieving a comparable level of learning outcomes through other education, practical experience or other circumstances.

The general entry requirements for second-cycle studies are a first-cycle qualification of at least 180 credits, or a corresponding foreign qualification. An applicant may also be accepted on the basis of a comparable level of learning outcomes obtained through other education, practical experience or other circumstances.

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The general entry requirements for third-cycle studies are a second-cycle qualification, or completed courses worth at least 240 credits (of which 60 credits are at second-cycle level) or the equivalent level of knowledge acquired in Sweden or abroad. Furthermore, for entry to third-cycle studies, the applicant must be deemed able to benefit from the education.

Qualifications

All courses, study programmes and qualifications are on one of three levels: first-, second- or third-cycle. In the Higher Education Ordinance, the Government has determined which qualifications may be awarded, as well as their scope, requirements and intended learning outcomes. There are three categories of qualifications: general; the fine, applied and performing arts; and professional qualifications. For some more information, please see below.

General qualifications

First-cycle (SeQF/EQF 6)

Högskoleexamen (Higher Education Diploma) requires 120 credits and an independent project (degree project).

Kandidatexamen (Degree of Bachelor) requires 180 credits. At least 90 credits must be completed in the main field of study, including an independent project (degree project) worth 15 credits.

Second-cycle (SeQF/EQF 7)

Magisterexamen (Degree of Master (60 credits)) requires 60 credits. At least 30 credits must be completed in the main field of study, including an independent project (degree project) worth 15 credits. In addition, the student must normally hold a kandidatexamen, or a professional degree of at least 180 credits, or an equivalent foreign degree.

Masterexamen (Degree of Master (120 credits)) requires 120 credits. At least 60 credits must be completed in the main field of study, including an independent project (degree project) worth at least 30 credits. In addition, the student must normally hold a kandidatexamen, or a professional degree of at least 180 credits or an equivalent foreign degree.

Third-cycle (SeQF/EQF 8)

Licentiatexamen (Degree of Licentiate) requires at least 120 credits, including a research thesis worth at least 60 credits. A higher education institution may decide that a licentiatexamen can be awarded as a separate qualification or as a step on the way to doktorsexamen (see below).

Doktorsexamen (Degree of Doctor) requires 240 credits, including a research thesis (doctoral thesis) worth at least 120 credits. The thesis must be presented at a public defence.

Qualifications in the fine, applied and performing arts

Qualifications in the fine, applied and performing arts are awarded at all three cycles and corresponding SeQF levels. At first-cycle level: konstnärlig högskoleexamen (Higher Education Diploma) and konstnärlig kandidatexamen (Degree of Bachelor of Fine Arts). At second-cycle level: konstnärlig magisterexamen (Degree of Master of Fine Arts (60 credits)) and konstnärlig masterexamen (Degree of Master of Fine Arts (120 credits)). Two third-cycle qualifications are awarded: konstnärlig licentiatexamen (Degree of Licentiate) and konstnärlig doktorsexamen (Degree of Doctor).

Professional qualifications

Professional qualifications are offered at either first- or second-cycle level and corresponding SeQF levels. These qualifications may stretch over two cycles and are awarded in areas that include engineering, health care, agriculture, law, and education. Professional qualifications are regulated by national legislation and are considered regulated education subject to the Professional Qualifications Directive 2005/36/EC.

Titles of qualifications

Translations into English of all titles of qualifications are regulated at the national level. Higher education institutions may decide to add a prefix to a qualification title e.g. filosofie kandidatexamen or medicine doktorsexamen or/ and add a major field of studies e.g. civilingenjörsexamen i maskinteknik.

Appendix: Master's Degree Diploma supplement

PREMESSA

Il presente Supplemento al Diploma è stato sviluppato dalla Commissione Europea, dal Consiglio d'Europa e dall'UNESCO/CEPES. Lo scopo del supplemento è di fornire dati indipendenti atti a migliorare la trasparenza internazionale dei titoli (diplomi, lauree, certificati ecc.) e a consentirne un equo riconoscimento accademico e professionale. E' stato progettato in modo da fornire una descrizione della natura, del livello, del contesto, del contenuto e dello status degli studi effettuati e completati dallo studente identificato nel titolo originale al quale questo supplemento è allegato. Il Supplemento al Diploma esclude ogni valutazione discrezionale, dichiarazione di equivalenza o suggerimenti relativi al riconoscimento. Le informazioni sono fornite in otto sezioni. Qualora non sia possibile fornire alcune informazioni, ne sarà data la spiegazione.

1 DATI ANAGRAFICI

1.1 Cognome

PERSIANI

1.2 Nome

MICHELE

1.3 Data di nascita (giorno, mese, anno)

15/11/1989

1.4 Codice di identificazione personale

819149

2 INFORMAZIONI SUL TITOLO DI STUDIO

2.1 Titolo di studio rilasciato e qualifica accademica

Laurea magistrale in INGEGNERIA INFORMATICA
Dottore magistrale

2.2 Classe o area disciplinare

LM-32 Ingegneria informatica

2.3 Nome e tipologia dell'istituzione che rilascia il titolo di studio

Politecnico di Milano (Università statale), Piazza Leonardo da Vinci 32, 20133 Milano

2.4 Nome e tipologia dell'istituzione che gestisce gli studi, se diversa dalla precedente

NA

2.5 Lingua/e di insegnamento e di verifica del profitto

Italiano

3 INFORMAZIONI SUL LIVELLO DEL TITOLO DI STUDIO

3.1 Livello del titolo di studio

Secondo ciclo / 7° livello del Quadro Titoli Italiani

3.2 Durata normale del corso

Due anni / 120 crediti

3.3 Requisiti di accesso

Laurea, o titolo estero comparabile

4 INFORMAZIONI SUL CURRICULUM E SUI RISULTATI CONSEGUITI

4.1 Modalità di frequenza e didattica utilizzata

Il corso è a tempo pieno e comprende la partecipazione a lezioni e ad attività di laboratorio.

4.2 Requisiti per il conseguimento del titolo

I laureati nei corsi di laurea magistrale della classe devono:
- conoscere approfonditamente gli aspetti teorico-scientifici della matematica e delle altre scienze di base ed essere capaci di utilizzare tale conoscenza per interpretare e descrivere i problemi dell'ingegneria complessi o che richiedono un approccio interdisciplinare;
- conoscere approfonditamente gli aspetti teorico-scientifici dell'ingegneria, sia in generale sia in modo approfondito relativamente a quelli dell'ingegneria informatica, nella quale sono capaci di identificare, formulare e risolvere anche in modo innovativo problemi complessi o che richiedono un approccio interdisciplinare;
- essere capaci di ideare, pianificare, progettare e gestire sistemi, processi e servizi complessi e/o innovativi;
- essere capaci di progettare e gestire esperimenti di elevata complessità;
- essere dotati di conoscenze di contesto e di capacità trasversali;
- avere conoscenze nel campo dell'organizzazione aziendale (cultura d'impresa) e dell'etica professionale;
- essere in grado di utilizzare fluentemente, in forma scritta e orale, almeno una lingua dell'Unione Europea oltre l'italiano, con riferimento anche ai lessici disciplinari.

4.3 Curriculum, crediti e voti conseguiti

	CODICE	INSEGNAMENTO	CFU / ECTS	VOTO	DATA
	080931	ALGEBRA AND MATHEMATICAL LOGIC	5.00	22	03/02/2014
	089182	FORMAL LANGUAGES AND COMPILERS	5.00	21	05/03/2014
	089228	ENTERPRISE DIGITAL INFRASTRUCTURES	5.00	26	01/07/2014
	089184	SOFTWARE ENGINEERING 2	5.00	29	10/07/2014
	088804	MECCANICA (PER ING. INFORMATICA)	5.00	26	22/07/2014
	088805	FISICA TECNICA	5.00	27	19/09/2014
	089216	SOFT COMPUTING	5.00	27	02/02/2015
	089183	DATA BASES 2	5.00	21	05/02/2015
	089169	AUTONOMOUS AGENTS AND MULTIAGENT SYSTEMS	5.00	26	11/02/2015
	089214	ARTIFICIAL INTELLIGENCE	5.00	26	26/02/2015
	089167	DATA MINING AND TEXT MINING (UIC 583)	5.00	25	29/06/2015
	089185	HIGH PERFORMANCE PROCESSORS AND SYSTEMS (UIC 569)	5.00	30	03/07/2015
	089012	KNOWLEDGE ENGINEERING	5.00	30	03/07/2015
	086067	ALGORITMI E PRINCIPI DELL'INFORMATICA	10.00	23	03/02/2016
	091316	COGNITIVE ROBOTICS	5.00	30 con lode	09/02/2016
	088877	TEORIA DEI SISTEMI (DINAMICA NON LINEARE)	5.00	26	09/02/2016
	088983	FOUNDATIONS OF OPERATIONS RESEARCH	5.00	30	18/02/2016
	089165	COMPUTER SECURITY	5.00	26	28/06/2016
	097683	MACHINE LEARNING	5.00	26	07/07/2016
	089254	PROVA FINALE (INF)	20.00	--	17/09/2016

4.4 Sistema di votazione e distribuzione dei voti ottenuti

I voti nei singoli insegnamenti vanno da 18 a 30. La sufficienza e' 18, il massimo e' 30 con lode.

TABELLA DI DISTRIBUZIONE DEI VOTI

VOTO	Numero voti	%	% cumulata
18	533	4,12	4,12
19	265	2,05	6,17
20	398	3,08	9,25
21	474	3,67	12,92
22	545	4,22	17,14
23	629	4,86	22,00
24	872	6,74	28,74
25	1006	7,78	36,52
26	1130	8,74	45,26
27	1328	10,27	55,53
28	1328	10,27	65,80
29	1059	8,19	73,99
30	1738	13,44	87,43
30 con lode	1625	12,57	100,00

Numero complessivo di voti considerati: 12930

La tabella mostra le distribuzioni delle votazioni ottenute nel periodo dal 01/11/2012 al 31/10/2015, considerando gli insegnamenti erogati in corsi di studio appartenenti alla stessa Classe di Laurea del laureato.

4.5 Votazione finale conseguita

102/110, conseguita il 28/09/2016
I voti finali vanno da 66 a 110 con lode.

TABELLA DI DISTRIBUZIONE DEI VOTI FINALI

VOTO	Numero voti	%	% cumulata
77	2	0.34	0.34
78	2	0.34	0.68
80	1	0.17	0.85
82	1	0.17	1.02
83	2	0.34	1.36
84	3	0.50	1.86
85	4	0.67	2.53
86	6	1.01	3.54
87	3	0.50	4.04
88	7	1.17	5.21
89	7	1.17	6.38
90	12	2.01	8.39
91	9	1.51	9.90
92	10	1.68	11.58
93	10	1.68	13.26
94	10	1.68	14.94
95	10	1.68	16.62
96	26	4.36	20.98
97	10	1.68	22.66
98	17	2.85	25.51
99	18	3.02	28.53
100	37	6.21	34.74
101	28	4.70	39.44
102	22	3.69	43.13
103	33	5.54	48.67
104	20	3.36	52.03
105	35	5.87	57.90
106	24	4.03	61.93
107	30	5.03	66.96
108	10	1.68	68.64
109	18	3.02	71.66
110	41	6.88	78.54
110 con lode	128	21.46	100.00

Numero complessivo di voti finali considerati: 596

La tabella mostra le distribuzioni delle votazioni finali ottenute nel periodo dal 01/11/2012 al 31/10/2015 in corsi di studio appartenenti alla stessa Classe di Laurea del laureato.

5 INFORMAZIONI SULL'AMBITO DI UTILIZZAZIONE DEL TITOLO DI STUDIO

5.1 Accesso ad ulteriori studi

La qualifica da` accesso al Dottorato di Ricerca, al Corso di Specializzazione di secondo livello e al Master Universitario di secondo livello

5.2 Status professionale conferito dal titolo

Il titolo dà accesso agli esami di stato per conseguire l'abilitazione all'esercizio della professione di: INGEGNERE DELL'INFORMAZIONE, INGEGNERE DELL'INFORMAZIONE IUNIOR

6 INFORMAZIONI AGGIUNTIVE

6.1 Informazioni aggiuntive

INSEGNAMENTI AGGIUNTIVI

	CODICE	INSEGNAMENTO	CFU / ECTS	VOTO	DATA
	089013	ROBOTICS	5.00	24	07/09/2015

6.2 Altre fonti di informazioni

http://www.polimi.it/; http://www.miur.it/;

7 SOTTOSCRIZIONE DEL SUPPLEMENTO

7.1 Data del rilascio (giorno/mese/anno) (*)

7.2 Nome e firma (*)

Dott.ssa Assunta Marrese

7.3 Funzione

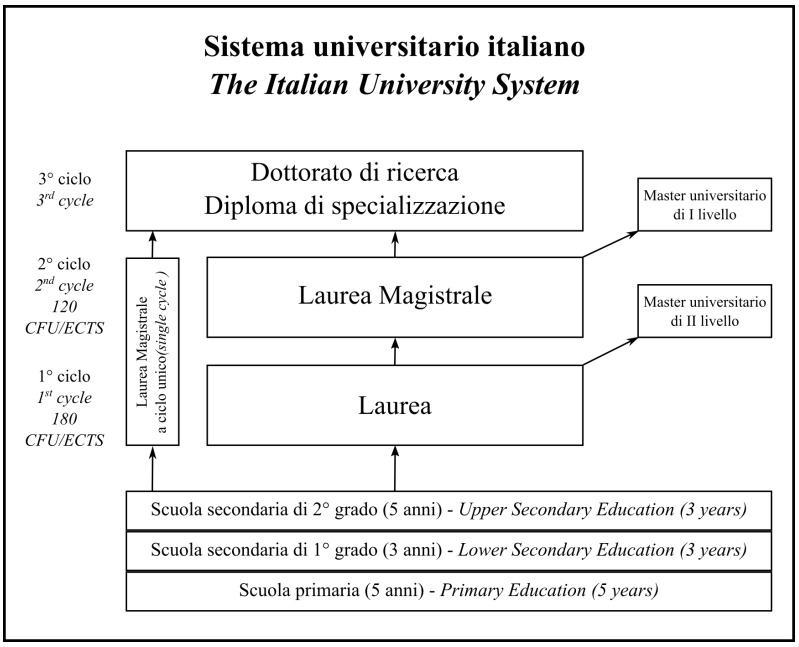
Il Dirigente dell'Area Servizi agli Studenti e ai Dottorandi

7.4 Timbro ufficiale (*)

(*) Data, firma e timbro sono presenti solo se richiesti dal titolare del Diploma Supplement

8 INFORMAZIONI SUL SISTEMA NAZIONALE DI ISTRUZIONE SUPERIORE

Il sistema universitario italiano si articola sui 3 cicli del Processo di Bologna: i principali titoli italiani sono la Laurea (1° ciclo), la Laurea Magistrale (2° ciclo) e il Dottorato di Ricerca (3° ciclo). Il sistema italiano offre anche altri corsi accademici con i relativi titoli.



PRIMO CICLO

E' costituito esclusivamente dai Corsi di Laurea. Essi hanno l'obiettivo di assicurare agli studenti un'adeguata padronanza di metodi e contenuti scientifici generali e l'acquisizione di specifiche conoscenze professionali. Requisito minimo per l'accesso è il diploma finale di scuola secondaria, rilasciato al completamento di 13 anni di scolarità complessiva e dopo il superamento del relativo esame di Stato, o un titolo estero comparabile; l'ammissione può essere subordinata alla verifica di ulteriori condizioni. I corsi hanno durata triennale. Per conseguire il titolo di Laurea, lo studente deve aver acquisito 180 Crediti Formativi Universitari (CFU), equivalenti ai crediti ECTS; può essere richiesto un periodo di tirocinio e la discussione di una tesi o la preparazione di un elaborato finale. Il titolo di Laurea dà accesso alla Laurea Magistrale e agli altri corsi di 2° ciclo.

SECONDO CICLO

I principali corsi di 2° ciclo sono quelli di Laurea Magistrale; essi offrono una formazione di livello avanzato per l'esercizio di attività di elevata qualificazione in ambiti specifici. L'accesso ai corsi è subordinato al possesso di una Laurea o di un titolo estero comparabile; l'ammissione è soggetta a requisiti specifici decisi dalle singole università. I corsi hanno durata biennale. Per conseguire il titolo di Laurea Magistrale, lo studente deve aver acquisito 120 crediti (CFU) e aver elaborato e discusso una tesi di ricerca.
Alcuni corsi (Medicina e chirurgia, Medicina veterinaria, Odontoiatria e protesi dentaria, Farmacia e Farmacia industriale, Architettura e Ingegneria edile-Architettura, Giurisprudenza, Scienze della formazione primaria) sono definiti "Corsi di Laurea Magistrale a ciclo unico": requisito di accesso è il diploma di scuola secondaria superiore o un titolo estero comparabile; l'ammissione è subordinata a una prova di selezione; gli studi si articolano su 5 anni (6 anni e

360 CFU per Medicina e Chirurgia e per Odontoiatria e protesi dentaria). Per conseguire il titolo di Laurea Magistrale lo studente deve quindi aver acquisito 300 CFU ed aver elaborato e discusso una tesi di ricerca.
Il titolo di Laurea Magistrale dà accesso al Dottorato di Ricerca e agli altri corsi di 3° ciclo.

TERZO CICLO

I principali corsi di 3° ciclo sono quelli di Dottorato di Ricerca; essi hanno l'obiettivo di far acquisire una corretta metodologia per la ricerca scientifica avanzata, adottano metodologie innovative e nuove tecnologie, prevedono stage all'estero e la frequenza di laboratori di ricerca. L'ammissione richiede una Laurea Magistrale (o un titolo estero comparabile) e il superamento di un concorso; la durata è di minimo 3 anni. Il dottorando deve elaborare una tesi originale di ricerca e discuterla durante l'esame finale.

ALTRI CORSI

- Corsi di Specializzazione: corsi di 3° ciclo aventi l'obiettivo di fornire conoscenze e abilità per l'esercizio di attività professionali di alta qualificazione, particolarmente nel settore delle specialità mediche, cliniche e chirurgiche. Per l'ammissione è richiesta una Laurea Magistrale (o un titolo estero comparabile) e il superamento di un concorso; la durata degli studi varia da 2 (120 CFU) a 6 anni (360 CFU) in rapporto al settore disciplinare. Il titolo finale rilasciato è il Diploma di Specializzazione.
- Corsi di Master universitario di primo livello: corsi di 2° ciclo di perfezionamento scientifico o di alta formazione permanente e ricorrente. Vi si accede con una Laurea o con un titolo estero comparabile. La durata minima è annuale (60 CFU); non consente l'accesso a corsi di Dottorato di Ricerca e di 3°ciclo, perché il corso non ha ordinamento didattico nazionale e il titolo è rilasciato 2 sotto la responsabilità autonoma della singola università. Il titolo finale è il Master universitario di primo livello.
- Corsi di Master Universitario di secondo livello: corsi di 3° ciclo di perfezionamento scientifico o di alta formazione permanente e ricorrente. Vi si accede con una Laurea Magistrale o con un titolo estero comparabile. La durata è minimo annuale (60 CFU); non consente l'accesso a corsi di Dottorato di Ricerca e di 3° ciclo, perché il corso non ha ordinamento didattico nazionale e il titolo è rilasciato sotto la responsabilità autonoma della singola università. Il titolo finale è il Master universitario di secondo livello.

CREDITI FORMATIVI UNIVERSITARI (CFU)

I corsi di studio sono strutturati in crediti. Al Credito Formativo Universitario (CFU) corrispondono normalmente 25 ore di lavoro dello studente, ivi compreso lo studio individuale. La quantità media di lavoro accademico svolto in un anno da uno studente a tempo pieno è convenzionalmente fissata in 60 CFU. I crediti formativi universitari sono equivalenti ai crediti ECTS.

CLASSI DEI CORSI DI STUDIO

I corsi di studio di Laurea e di Laurea Magistrale che condividono obiettivi e attività formative sono raggruppati in "classi". I contenuti formativi di ciascun corso di studio sono fissati autonomamente dalle singole università; tuttavia le università devono obbligatoriamente inserire alcune attività formative (ed il corrispondente numero di crediti) determinate a livello nazionale. Tali requisiti sono stabiliti in relazione a ciascuna classe. I titoli di una stessa classe hanno lo stesso valore legale.

TITOLI ACCADEMICI

La Laurea dà diritto alla qualifica accademica di "Dottore"; la Laurea Magistrale dà diritto a quella di "Dottore magistrale"; il Dottorato di Ricerca conferisce il titolo di "Dottore di ricerca" o "PhD".

TITOLI CONGIUNTI

Le università italiane possono istituire corsi di studio in cooperazione con altre università, italiane ed estere, al termine dei quali sono rilasciati titoli congiunti o titoli doppi/multipli.

MAGGIORI INFORMAZIONI

Quadro dei titoli italiani - QTI http://www.quadrodeititoli.it

Appendix: Bachelor's Degree Diploma supplement

ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

AL CERTIFICATO
DEVE ESSERE APPOSTO IL
BOLLO
L'imposta è a carico del richiedente o del destinatario del certificato, che devono procedere all'annullamento ai sensi dell'art. 12 del D.P.R. ottobre 1972 n. 642.

TRANSCRIPT OF RECORDS - DEGREE CERTIFICATE

ARCHIVE NUMBER: 92479 *reg. 498235*

MATRICULATION NUMBER: 0000350174

NAME OF THE STUDENT: Family Name: PERSIANI First Name: MICHELE GENDER: M

DATE, PLACE AND COUNTRY OF BIRTH: Date (dd/mm/yyyy): 15/11/1989 Place BOLOGNA Country ITALIA

CLASS (MAIN FIELD OF STUDY FOR THE QUALIFICATION): Class n. L-8 Information technology engineering
DEGREE PROGRAMME: Computer Engineering (First cycle degree programme)
OFFICIAL LENGTH OF THE PROGRAMME: 3 academic years
ADMINISTRATIVE OFFICE: Bologna
LANGUAGE OF INSTRUCTION : Italian

MATRICULATION DATE (dd/mm/yyyy): 11/09/2008

FIRST ACADEMIC YEAR OF ENROLLMENT: 2008/2009

QUALIFICATION AND TITLE AWARDED
Qualification: Laurea in Computer Engineering
Grade: 98(1) - Average grade: 25,65/30 (94,05/110)
Date (dd/mm/yyyy): 25/03/2013
Title: Dottore

FINAL EXAMINATION
Type: DISSERTATION AND RELATIVE DISCUSSION
Title: Sistema di controllo WEB per droni UAV
Supervising Professor: MARCONI LORENZO
Subject: Automatic Controls T (SSD: ING-INF/04)

LEARNING ACTIVITIES SUCCESSFULLY COMPLETED IN THE LAST ATTENDED PROGRAMME

Learning activities	Grade	ECTS Scale	Date (dd/mm/yy)	SSD	CFU/ECTS
Applied Mathematics T	20	E(2)	07/01/2010	MAT/07	6
Automatic Controls T	30	B(2)	21/12/2011	ING-INF/04	9

Date (dd/mm/yyyy): Bologna, 12/09/2021

Head of University's Registry Office

Dott. Michele Menna

ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

Learning activities	Grade	ECTS Scale	Date (dd/mm/yy)	SSD	CFU/ECTS
Computer Law T	30	B(2)	13/06/2012	IUS/20	6
Computer Networks T	28	B(2)	23/01/2013	ING-INF/05	9
Economics and Business Organization T	25	C(2)	11/07/2012	ING-IND/35	6
Electronic Calculators T	25	C(2)	09/03/2011	ING-INF/05	6
Electronics T	27	C(2)	22/10/2012	ING-INF/01	9
Electrotechnics T	23	D(2)	29/05/2012	ING-IND/31	6
English as Foreign Language	ID		09/02/2009		3
Foundations of Informatics T-1	25	C(2)	03/03/2009	ING-INF/05	12
Foundations of Informatics T-2	19	E(2)	16/09/2009	ING-INF/05	12
Foundations of Telecommunications T	30	B(2)	12/09/2011	ING-INF/03	9
General Physics T-1	22	D(2)	14/09/2010	FIS/01	6
General Physics T-2	26	C(2)	10/01/2012	FIS/01	6
Geometry and Algebra T-1	23	D(2)	27/04/2009	MAT/03	6
Information Systems T	25	C(2)	26/01/2011	ING-INF/05	9
Laboratory of System Administration T	ID		25/02/2013		9
Logic Design T	25	C(2)	24/09/2009	ING-INF/05	6
Mathematical Analysis T-1	27	C(2)	12/06/2009	MAT/05	9
Mathematical Analysis T-2	27	C(2)	14/06/2010	MAT/05	6
Operating Systems T	25	C(2)	22/11/2011	ING-INF/05	9
Reliability and Quality Control	27	C(2)	10/07/2012	ING-INF/07	6
Software Engineering T	29	B(2)	19/12/2012	ING-INF/05	9
Final examination	Successfully Completed		25/03/2013		6

USEFUL CREDITS (RECOGNISED AND/OR OBTAINED IN THE LAST DEGREE PROGRAMME): 180

Date (dd/mm/yyyy): Bologna, 12/09/2021

Head of University's Registry Office

Dott. Michele Menna

ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

Notes

(1)
Final Examination taken at the Faculty of 0021 - Engineering

The Board evaluates the candidate through his/her study curriculum and the final examination; the Board expresses its evaluation as a mark out of one hundred and ten. The examination is passed with a minimum score of 66/110. In the event of the maximum score being awarded (110/110), the Board may unanimously decide to award the "cum laude" honour.

ECTS Scale	Grade	
A	110 e lode	14
B	103 - 110	24
C	96 - 102	31
D	87 - 95	25
E	66 - 86	6

(2)
Exam taken at the Faculty of 0021 - Engineering
ECTS grading scale - Institutional grading system of the Faculty of 0021 - Engineering

ECTS Scale	Grade	
A	30 e lode	6
B	28 - 30	32
C	25 - 27	27
D	21 - 24	22
E	18 - 20	13
F	0 - 17	0

Date (dd/mm/yyyy): Bologna, 12/09/2021

Head of University's Registry Office

Dott. Michele Menna

Passing grade for each exams or learning activity can range from 18 to 30. The highest possible grade is "30 e lode" (30L), i.e. 30 with honours.
For some exams and activities there is no grade, but only an "approved" (ID).
The percentages of students obtaining a given grade are rounded up to the nearest whole number. The highest percentage is calculated by the difference between 100 and the sum of the percentages of the students obtaining the other grades.
1 CFU = Credit Unit = 1 ECTS = 25 working hours (teaching, independent study, examinations, tutorials)
N.A. = Not applicable in a different Faculty in the Univesity system before 1999 reform or in a different University.
SSD = Scientific field/Discipline
RC = Recognised
RP = Replaced
SO = Sobstitute

Date (dd/mm/yyyy): Bologna, 12/09/2021

Head of University's Registry Office

Dott. Michele Menna

ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

The Italian University System

(DM 509/99 and DM 270/2004)

Since 1999, Italian university studies have been reformed so as to meet the objectives of the "Bologna process". The university system is now organised in 3 cycles: the Laurea, the 1st cycle academic degree, grants access to the 2nd cycle, and the *Laurea specialistica/magistrale*, the main degree of the 2nd cycle, gives access to 3rd cycle courses awarding the *Dottorato di ricerca*. In addition to the three sequential degrees mentioned above, the system offers other programmes with their respective degrees.

First cycle. First cycle studies consist exclusively in *Corsi di Laurea*, aimed at guaranteeing students an adequate command of general scientific methods and contents as well as specific professional skills. The general access requirement is the school leaving qualification awarded on completion of 13 years of global schooling and after the relevant State examinations; also comparable foreign qualifications may be accepted. Admission to individual degree courses may be subject to specific course requirements. *Laurea* courses last 3 years. The *Laurea* (1st degree) is awarded to students who have earned 180 credits; the completion of a training period and the defence of a thesis may also be required. The *Laurea* grants access to competitions for the civil service, to regulated and non-regulated professions, and to 2nd cycle courses.

Second cycle. Second cycle studies include the following typologies:
A) *Corsi di Laurea specialistica/Corsi di Laurea magistrale*; they are aimed at providing students with an advanced level of education for the exercise of a highly qualified activity in specific areas. Access is usually by a Laurea or a comparable foreign degree; admission is subject to specific course requirements determined by individual universities; workload: 120 credits; length: 2 years. The awarding of the degree, *Laurea specialistica/magistrale* (2nd cycle degree of the “Bologna process”) is conditional on the defence of a thesis. The change of the name from *Laurea specialistica* into *Laurea magistrale* was decided in 2004.
A limited number of 2nd cycle programmes (dentistry, human medicine, pharmacy, veterinary medicine, architecture, law), are defined *Corsi di Laurea specialistica/magistrale a ciclo unico* (one-block LS/LM courses); access is by the school leaving diploma or a comparable foreign qualification; admission is subject to selective entrance exams; each degree course is organised in just one-block of 5 years and 300 credits (only human medicine requires 6 years and 360 credits). All *Lauree specialistiche/magistrali* grant access to competitions for the civil service, to regulated and non-regulated professions, research doctorate programmes and all the other degree courses of the 3rd cycle.
B) *Corsi di Master universitario di primo livello*. They consist in advanced scientific courses or higher continuing education studies open to the holders of a *Laurea* or a comparable foreign degree; admission may be subject to additional conditions. Length: minimum 1 year; workload: 60 credits at least. The *Master universitario* di primo livello does not give access to the 3rd cycle.

Third cycle. Third cycle studies include the following typologies:
A) *Corsi di Dottorato di Ricerca* aim at training students for very advanced scientific research; they adopt innovative teaching methodologies, updated technologies, training periods abroad and supervised activities in specialized research centres. Admission requires a *Laurea specialistica/ magistrale* (or a comparable foreign degree) and to pass a specific competition; studies last a minimum of 3 years; the doctoral student must work out an original dissertation to be defended in the final examination.
B) *Corsi di specializzazione* are devised to provide students with knowledge and abilities as requested in the practice of highly qualified professions; they mainly concern medical, clinical and surgical specialities. Admission requires a *Laurea specialistica/magistrale* (or a comparable foreign degree) and the passing of a competitive examination; course length varies in relation to subject fields. The final degree, *Diploma di specializzazione*, gives the right to the title as *Specialista.*
C) *Corsi di Master universitario di secondo livello* consist in advanced scientific courses or higher continuing education studies, open to the holders of an LS or a comparable foreign degree. Length: minimum 1 year; workload: 60 credits at least.

Credits: degree courses are usually structured in credits. A university credit generally corresponds to 25 hours of global work per student, time for

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personal study included. The average workload of a full time student is conventionally fixed at 60 credits per year.

Classes of degree courses: all degree courses sharing educational objectives and teaching-learning activities are organised in groups called *classi*. The content of individual degree courses is autonomously determined by universities; however, when establishing a degree course, individual institutions have to adopt some general requirements fixed at national level. Degrees belonging to the same class have the same legal validity.

Academic titles: the *Laurea* confers the title "*Dottore*", the *Laurea specialistica/magistrale* that of *Dottore magistrale*, the *Dottorato di ricerc*a that of "*Dottore di ricerca*".

Joint degrees: Italian universities may establish degree courses in cooperation with foreign partner universities; on completion of integrated curricula joint or double/multiple degrees are awarded.

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