

ALMATONG

AUTOMATION ENGINEERING, CURRICULUM AUTOMATION ENGINEERING (ALMATONG PROGRAMME)

The Bachelor Degree in Automation Engineering allows students to choose an international curriculum the AlmaTong Programme. It is Bachelor Double Degree Programme in Automation Engineering between Tongji University (Shanghai, China) and University of Bologna (Bologna, Italy). It is designed for students from the University of Bologna and for the ones from the Tongji University of Shanghai. At the end of the Programme each University will grant to participating students its Degree, respectively:

- Laurea in Ingegneria dell'Automazione at University of Bologna;
- Bachelor of Science in Automation Engineering at Tongji University.

ALMATONG

FIRST CYCLE DEGREE PROGRAMME/BACHELOR UNIVERSITY OF BOLOGNA

PROGRAMME DIRECTOR:
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TUITION FEE: about € 1,610.00



corsi.unibo.it/1Cycle/AutomationEngineering/Pages/bachelor-degree.aspx

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ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA
SCHOOL OF ENGINEERING AND ARCHITECTURE

**SCHOOL OF ENGINEERING
AND ARCHITECTURE**

ALMATONG PRO GRA MME

FIRST CYCLE
DEGREE
PROGRAMME/
BACHELOR
BOLOGNA

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COURSE STRUCTURE

First year	HRS	ECTS
ANALISI MATEMATICA T-1	90	9
ANALISI MATEMATICA T-2	90	9
FISICA GENERALE T-1	90	9
FISICA GENERALE T-2	60	6
FONDAMENTI DI INFORMATICA T	90	9
GEOMETRIA E ALGEBRA T	60	6
MECCANICA RAZIONALE T	60	6
LINGUA STRANIERA: INGLESE (B2)		6
Second year (in Shanghai)	HRS	ECTS
AUTOMATIC CONTROL 1	90	9
AUTOMATIC CONTROL 2	90	9
ELECTRICAL CIRCUITS	60	6
FOUNDATIONS OF ELECTRONICS	120	12
FOUNDATIONS OF MECHANICS 1	60	6
FOUNDATIONS OF MECHANICS 2	90	9
LOGIC DESIGN OF DIGITAL SYSTEMS	60	6
Third year	HRS	ECTS
ELECTRIC DRIVES	90	9
AUTOMATIC MACHINES	90	9
ELECTROMAGNETIC COMPATIBILITY AND LABORATORY TECHNIQUES T	60	6
CONTROL SYSTEMS TECHNOLOGIES	90	9
COMPUTER ARCHITECTURES	60	6
RESTRICTED ELECTIVE ACTIVITIES TYPE F – (6 ECTS)		
LABORATORY OF AUTOMATIC MACHINES	30	3
LABORATORY OF ELECTRIC DRIVES	30	3
INTERNSHIP T	150	6
Restricted elective activities type D – (12 ECTS)		
FOUNDATIONS OF INDUSTRIAL ROBOTICS	60	6
PRINCIPLES OF MANAGEMENT	60	6
THESIS		6

Requirements and admission procedures

University of Bologna's students must present a request to be admitted to the "AlmaTong Programme" during the first year of study in Bologna. Since it may be followed only by a limited number of students, a selection process will be applied. The selection will be based on criteria such as: students' curriculum, knowledge of the English language and personal motivations to follow the Programme. A grant will be provided to support them during the stay in Shanghai.

Structure of the Programme and Learning Outcomes

The Programme is organized as follows:

On the 1st year, courses are taught in Italian at the University of Bologna. Students attend their 2nd year in Shanghai (Tongji University) together with Chinese students participating to the Programme. The courses are taught in English by Professors from both Tongji and Bologna University.

Classes of 3rd year are held in Italy in English. Additional period – up to 6 months in Shanghai: an additional period of study or training in Shanghai is required in order to obtain the Chinese Bachelor of Science Degree from the Tongji University. During this period students will primarily focus on research or cooperation with industries. This period can be postponed to the AlmaTong Master Programme. The goal of the Automation Engineering Programme is to provide the graduate students with a strong background in fundamental scientific disciplines, such as Mathematics and Physics as well as in classical engineering fields, such as Mechanics, Electric Drives, Automatic Control and in the disciplines of the Information Technology, like Computer Science and Electronics.

Career opportunities

The Automation Engineer is an expert who can actively participate and take the lead in the executive design and development of products and systems; who may take on full responsibility for installing, testing and maintaining complex machines and systems. Thanks to the interdisciplinary nature of her/his studies, the Automation Engineer will be able to design or manage systems resulting from the integration of highly diverse components and technologies. This flexibility both in the attitude and in the competences is believed to be a significant asset of the Automation Engineer, in view of the large variety of possible applications, of the continuous and rapid evolution of the technologies, as well of the job market. Students attending the AlmaTong Programme have also the chance to experience an international educational setting and to acquire considerable transversal communication and interpersonal skills.

Pursuing your studies

Bachelor Degree in Automation Engineering gives access to second cycle studies (Master Degrees) and to professional Master Programmes. For graduates willing to pursue their studies in the Automation Engineering field, the University of Bologna provides the Master Degree in Automation Engineering, a two-year Programme fully delivered in English. Within this Master Degree Course, interested students have 2 possibilities:

1. Master Degree in Automation Engineering in English for 2 years in Bologna;
2. Double-Degree Master Programme with Tongji University (AlmaTong Programme).

Classes of the 1st year will be held in Bologna; then students will attend classes in Shanghai starting on the 2nd year for a period of 3 semesters.