

# Annex 6 to the Addendum for Double Master's Degrees between Università di Bologna and Universität Stuttgart

## Double Master's Degree Scheme

The attached MACROPLAN depicts the 2-year MSc double degree structure in **Automation Engineering at Bologna** and in **Technische Kybernetik at U Stuttgart**. It shows the compulsory and elective courses in each semester as well as the prerequisites for students wishing to spend their 2<sup>nd</sup> year at the partner institution.

Semester 1		Semester 2		Semester 3		Semester 4	
Bologna students at Bologna	Stuttgart students in Stuttgart	Bologna students at Bologna	Stuttgart students in Stuttgart	Bologna students in Stuttgart	Stuttgart students in Bologna	Bologna students in Stuttgart	Stuttgart students at Bologna
Mathematical Methods for Automation Engineering (M) (6 ECTS) --- System Theory and Advanced Control (M) (9 ECTS) --- Real Time Systems for Automation (M) (6 ECTS) --- Elective C (6 ECTS)	Concepts of Automatic Control (M) (6 ECTS) --- Project in the Field of Engineering Cybernetics (M) (1,5 ECTS) --- Area of Specialisation with Computer Science/Computer Engineering focus (6 ECTS) --- Area of Specialisation with control focus or Maschinendynamik (6 ECTS) --- Internship (7.5 ECTS)	Industrial Robotics (M) (6 ECTS) --- System Analysis II and Modelling II: Learning and Estimation of Dynamical Systems (M) (6 ECTS) --- Mechanics of Machines for Automation (M) (9 ECTS) --- Real Time Systems for Automation (M) (6 ECTS) --- Elective B (6 ECTS)	Advanced Control: Nonlinear Control (SC) (6 ECTS) --- Project in Engineering Cybernetics (M) (1,5 ECTS) --- Dynamics of Distributed Parameter Systems (M) (6 ECTS) --- System Analysis II and Modelling II: Modelling and Identification of Dynamical Systems (SC) (6 ECTS) --- Control Technology of Machine Tools and Industrial Robots (6 ECTS) --- Internship (7.5 ECTS)	Advanced Control: Optimal Control (SC) (6 ECTS) --- Advanced Control: Data-driven Control or Adaptive Control (3 ECTS) --- Area of Specialisation with control focus (6 ECTS) --- Internship (15 ECTS)	Advanced Control: Optimal Control (M) (6 ECTS) --- Modelling and Simulation of Mechatronic Systems (M) (6 ECTS) --- Elective B (12 ECTS) --- Elective C (6 ECTS)	Area of Specialisation with control focus (3 ECTS) --- --- Master's Thesis (30 ECTS)	Modelling and Simulation of Mechatronic Systems (M) (3 ECTS) --- --- Master's Thesis (30 ECTS)
<b>Σ ECTS = 27</b>	<b>Σ ECTS = 27</b>	<b>Σ ECTS = 33</b>	<b>Σ ECTS = 33</b>	<b>Σ ECTS = 30</b>	<b>Σ ECTS = 30</b>	<b>Σ ECTS = 33</b>	<b>Σ ECTS = 33</b>

**US students** must choose "Maschinendynamik" if they have not taken it in the B.Sc..

**US students** must include a course of Computer Science/Computer Engineering as one of their 12 ECTS Area of Specialisation.

Course code: M = mandatory; SC = semicomulsory; E = elective

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