

# German-Argentinean Programm Bi-National Master with Double Title

## **Industrial Informatics (II)** *Spezialisierung: Industrial Cyber-Physical Systems*

Bi-National Master in Industrial Informatics  
Spezialisierung: Industrial-Cyber-Physical Systems

## Where are Emden and Santa Fe?



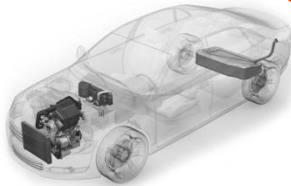


## Santa Fe, ~470 km North-West from Buenos Aires





# Santa Fe, Region (Province)



## Basic Knowledge composing the curriculum of the Bi-national Master II - ICPS

### ❖ Digitalisierung der Produktion

- Cyber-physikalische Komponenten
- (I4.0-Komponent) / Dinge / Dienste
- Internet-der-Dinge (IoT)
- Internett-der-Dienste (IoS)

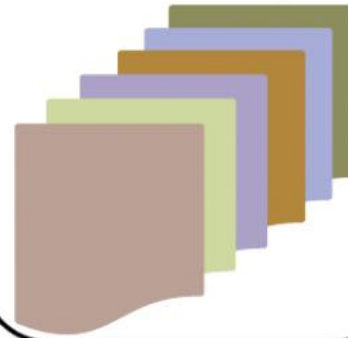
### ❖ Referenzarchitekturen

- RAMI4.0  
(Referenzarchitekturmodell Industrie 4.0)
- IIRA (Industrial Internet Reference Architektur)
- ISA '88
- ISA '95

### ❖ Engineering Industrie 4.0-fähige Lösungen

- Lifecycle Engineering
- Virtualisierung von industriellen Systemen
- Simulation (Methoden und Werkzeugen)

## Education 4.0 Ausbildung 4.0 Weiterbildung 4.0



### ❖ Big Data

- Analytics
- IMS, MES, WMS, EMS (Funktionen mit Big Data)
- Cloud Computing
- Serviceorientierte Architektur (SoA)
- Multiagent Technology

### ❖ Vernetzung der Produktion

- Industrial Internet Reference Architektur
- Systeme-aus-Cyber-physikalischen Systemen
- Konnectivität und Interoperabilität
  - - Vertikale – Enterprise
  - - Horizontale – Value Chain
  - - Lifecycle Engineering
- Daten- und Informationsmodelle (OPC-UA, B2MML, PackML, AutomationML, VASS, FAST, ISA95-ML)

### ❖ Information-Kommunikation-Kontrolle-Technologien (IKT)

- Mensch-Maschine-Integration 4.0
- Industrie 4.0, Innovationsprozesse
- Industrie 4.0 Businessmodelle



## Integrated Curriculum between HSE/L and UTN-FRSF



### Course of Studies: Master Industrial Informatics

### Specialization: Industrial Cyber-Physical Systems (English)

Master's Thesis 30 CP				
Robotic Systems 5 CP	Engineering ICPS 5 CP	Analytics & Mathematics 5 CP	Compulsory Optional Subject 2 5 CP	III-Project 2 10 CP
Industrial Cyber-Physical Systems 5 CP	Digitalization & Virtualization of ICPS 5 CP	Industrial Data Transport Technologies 5 CP	Compulsory Optional Subject 1 5 CP	III-Project 1 10 CP

### Compulsory Optional Subjects

Digital Economy & Society 5 CP	Offering from external international university 5 CP	Offering from external international university 5 CP	Industrielle Bildverarbeitung *) 5 CP	Hardware-Entwurf für Cyber-Physical Systems *) 5 CP
Innovation Management 5 CP	Offering from external international university 5 CP	Offering from external international university 5 CP	Mathematik in der Robotik *) 5 CP	Digitale Signalverarbeitung *) 5 CP

\*) language requirements German B2 or equivalent

UTN \* SANTA FE

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UTN \* SANTA FE

UTN \* SANTA FE

Study-Path for a HSE/L  
Student

Die folgende Tabelle zeigt den Studienplan in jedem Semester und ihre jeweiligen Credits an der HSE / L  
und Stunden an der UTN-FRSF:

Study-Path for a UTN-FRSF  
Student

Studienplan	HSE/L-I2AR	UTN-FRSF
<b>Semester 1 (an der Heimathochschule)</b>	<b>Credits</b>	<b>Stunden</b>
Sistemas Robóticos (Robotic Systems)	5	60
Ingeniería de Sistemas Físico-Cibernéticos Industriales (Engineering ICPS)	5	60
Minería en Grandes Volúmenes de Datos (Analytics and Mathematics)	5	60
Motivación para el Cambio (Investigación + Desarrollo + Innovación) (Digital Economy & Society)	5	60
Proyecto 1 (MII-Project 1 or 2)	10	120
<b>Semester 2 (an der ausländischen Hochschule)</b>	<b>Credits</b>	<b>Stunden</b>
Modelos de Organizaciones y Sistemas Físico-Cibernéticos Industriales (Industrial Cyber-Physical Systems)	5	60
Digitalización de Sistemas Físico-Cibernéticos Industriales (Digitalization of Industrial Cyber-Physical Systems)	5	60
Tecnologías para la integración de datos industriales (Industrial Data Transport Technologies)	5	60
Metodología de la Investigación (Innovation Management)	5	60
Proyecto 2 (MII-Project 1 oder 2)	10	120
Tutoría, actividades de investigación, y desarrollo de tesis (Master Thesis)	30	360

3<sup>rd</sup> Semester

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## Some practical information about the program

- Maximum 3 students per year of the degree course Master in Industrial Informatics / Specialisation Industrial-Cyber-Physical-Systems
- Student has to be immatriculated in Emden (MII – ICPS)
- Student approves the Semester 1 in Emden
- Semester 2 or Semester 2 and 3 (including Master Thesis) in Argentina
- The student gets Double Title (from German and Argentinean University). *Both programs have been accredited*
- Language of Instruction in Argentina: English
- Prerequisites: Spanisch language, at least A1 before departure
- Students get 1.500 Euro travel grant and 1.075 Euro per month for subsistence expenses
- Exchange of teachers and staff is financed as well



## Some practical information about the program

### ➤ Application Procedure

- ✓ Interested students have to contact the responsible professor at the home institution expressing their intention to apply for the program until Middle of October / Middle of March
- ✓ Official application until end of October / end of May in order to start the 2<sup>nd</sup> semester in the other country
- ✓ Beginning of November/Beginning of June: selection committee decides about admission
- ✓ Status quo: October 25th, 2019 (changes are possible)

## Contact at HSEL

On Faculty level

Prof. Dr- Ing. Armando Walter Colombo

Tel. 04921 8071972

[awcolombo@technik-emden.de](mailto:awcolombo@technik-emden.de)

International Office

Andrea Meyenburg, Head

Tel. 04921 807 1375

[Andrea.Meyenburg@hs-emden-leer.de](mailto:Andrea.Meyenburg@hs-emden-leer.de)

# Vielen Dank!!

# Muchas gracias!!

