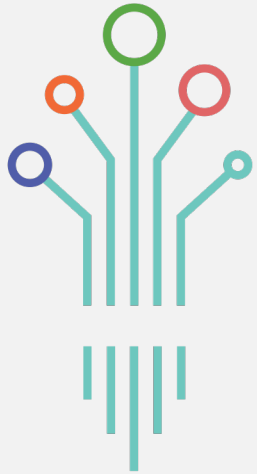
WP2 University-enterprise cooperation and modernization of Telecommunications Engineering Study Programs



BENEFIT

Boosting the telecommunications engineer profile to meet modern society and industry needs

Co-funded by the Erasmus+ Programme of the European Union

01-09-2018

MS 2.1
Identification of specific classes to be modified/added in each WB HEI study program

First Cycle of Study

P5: University of Banja Luka
Faculty of Electrical Engineering

Study program: Electronics and Telecommunications

Enhanced selected courses in ongoing study programmes

- Electrical Measurements
- Digital Signal Processing
- Digital Telecommunications
- Telecommunication Networks
- Antenas and Radio Wave Propagation
- Acoustics and Audio Technique
- Fundamentals of Radar Systems
- Wireless Sensor Networks
- Multimedia Signals and Systems
- Systems for Digital Signal Processing
- Fundamentals of Electrical Engineering I
- Fundamentals of Electrical Engineering II

P6: University of Sarajevo
Faculty of Electrical Engineering

Study program: Telecommunications

Enhanced selected courses in ongoing study programmes

- Software Engineering for Telecommunications
- Antennas and Wave Propagation
- Communication Protocols and Networks

P7: University of Tuzla
Faculty of Electrical Engineering

Study program: Electrical and Computer Engineering

Module: Telecommunications

Enhanced selected courses in ongoing study programmes

- Signals and Systems
- Introduction to Electronics
- Analog Integrated Electronics
- Fundamentals of Communications
- Digital Communications
- Microprocessor Systems in Telecommunications
- Sequential Circuits

Novel specific-knowledge courses

- Telemedicine

P8: University of Belgrade
School of Electrical Engineering

Study program:	Electrical and Computer Engineering
Module:	Telecommunications and Information Technology

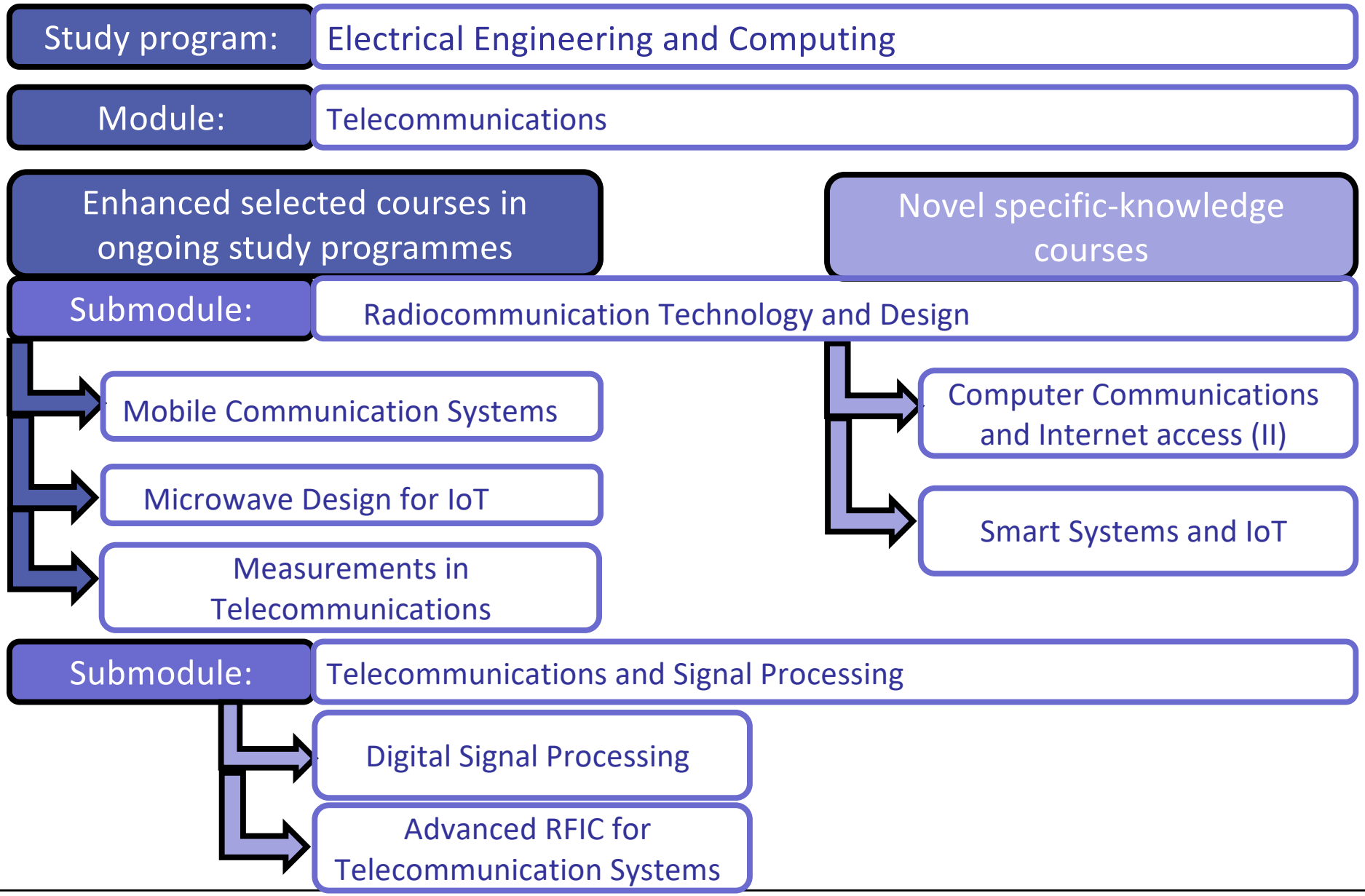
Enhanced selected courses in ongoing study programmes

- Telecommunications 1
- Telecommunications 2
- Signal Processing 2
- Fundamentals of Speech Communication

Novel specific-knowledge courses

- IoT Networks
- Smart Devices and Communications

P9: University of Niš
School of Electronic Engineering



P10: University of Novi Sad
Faculty of Technical Sciences

Study program:	Power, Electronic and Telecommunication Engineering
Module:	Information and Communication Technology and Signal Processing

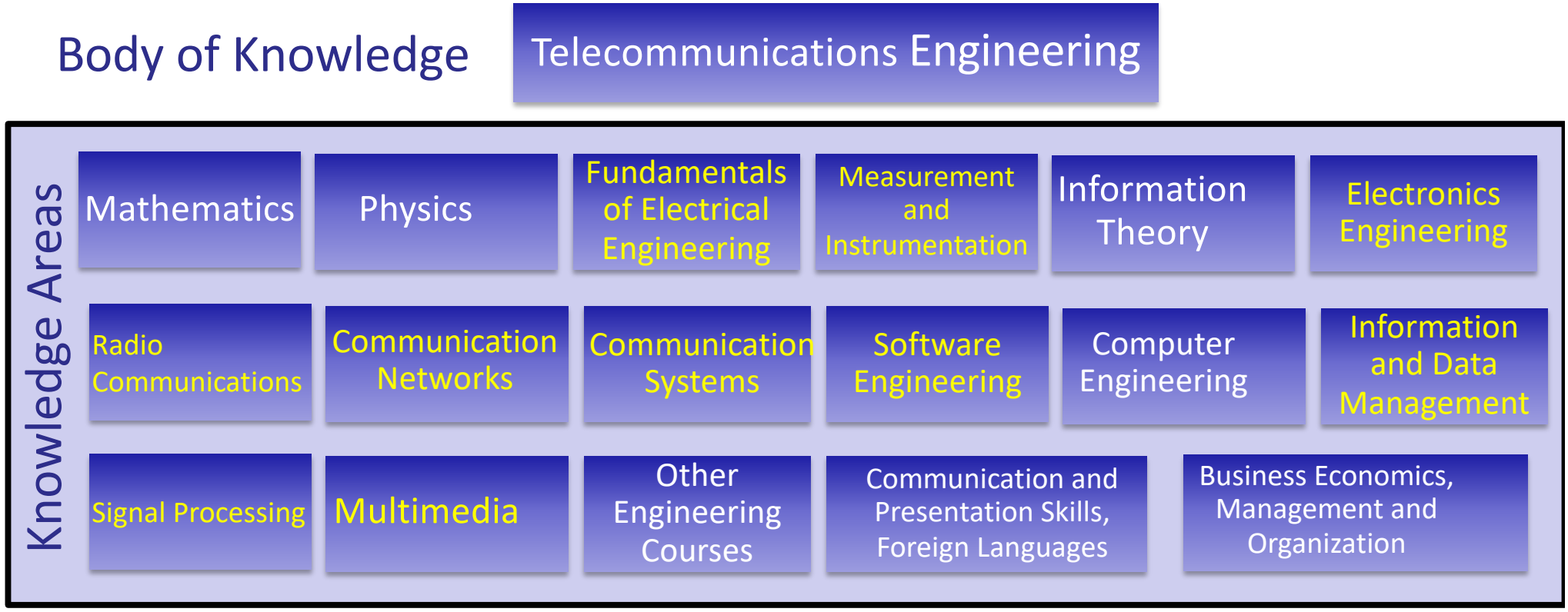
Enhanced selected courses in ongoing study programmes

- Modelling and Simulation of Communication Systems
- Machine Learning 1
- Software in Telecommunication Systems (module: 1)

Novel specific-knowledge courses

- Machine Learning 2
- Wireless Communication Systems
- Design of Industrial IoT Systems

The Telecommunications Engineering Body of Knowledge



The Telecommunications Engineering Body of Knowledge

Body of Knowledge

Telecommunications Engineering

Knowledge Areas

Fundamentals of Electrical Engineering

- Fundamentals of Electrical Engineering I UBL
- Fundamentals of Electrical Engineering II UBL

Measurement and Instrumentation

- Electrical Measurements UBL
- Measurements in Telecommunications UNI

Electronics Engineering

- Introduction to Electronics UNTZ
- Analog Integrated Electronics UNTZ
- Sequential Circuits UNTZ

Information and Data Management

- Machine Learning 1 UNS
- Machine Learning 2 UNS

Signal Processing

- Digital Signal Processing UBL
- Systems for Digital Signal Processing UBL
- Signals and Systems UNTZ
- Signal Processing 2 UB
- Microprocessor Systems in Telecommunications UNTZ
- Digital Signal Processing UNI

Multimedia

- Multimedia Signals and Systems UBL
- Acoustics and audio technique UBL
- Fundamentals of Speech Communication UB

The Telecommunications Engineering Body of Knowledge

Body of Knowledge

Telecommunications Engineering

Knowledge Areas

Software Engineering

- Software engineering for telecommunications UNSA
- Software in Telecommunication Systems UNS

Radio Communications

- Antenas and Radio Wave Propagation UBL
- Fundamentals of Radar Systems UBL
- Mobile Communication Systems UNI
- Microwave Design for IoT UNI
- Wireless Communication Systems UNS
- Antennas and Wave Propagation UNSA

Communication Networks

- Telecommunication Networks UBL
- Wireless Sensor Networks UBL
- Telemedicine UNTZ
- IoT Networks UB
- Smart Devices and Communications UB
- Computer Communications and Internet Access (II) UNI
- Design of Industrial IoT Systems UNS
- Communication Protocols and Networks UNSA

Communication systems

- Digital Telecommunications UBL
- Fundamentals of communications UNTZ
- Digital communications UNTZ
- Telecommunications 1 UB
- Telecommunications 2 UB
- Advanced RFIC for Telecommunication Systems UNI
- Smart Systems and IoT UNI
- Modelling and Simulation of Communication Systems UNS

Second Cycle of Study
(Master Study)

P6: University of Sarajevo
Faculty of Electrical Engineering

Study program: Telecommunications

Enhanced selected courses in ongoing study programmes

- Advanced telecommunication protocols and new generation networks
- Image and video compression
- Telecommunications Network Management

P7: University of Tuzla
Faculty of Electrical Engineering

Study program:	Electrical and Computer Engineering
Module:	Telecommunications

Enhanced selected courses in ongoing study programmes

- Network Security

Novel specific-knowledge courses

- IoT Networks

P8: University of Belgrade
School of Electrical Engineering

Study program:	Electrical Engineering and Computer Engineering
Module:	System Engineering and Radio Communications

Enhanced selected courses in ongoing study programmes

- Wireless Sensor Networks

Novel specific-knowledge courses

- IoT Networks

P9: University of Niš
School of Electronic Engineering

Study program: Master academic studies Telecommunications

Module: Radiocommunication Engineering and Technologies

Enhanced selected courses in ongoing study programmes

- Circuit Design for 5G systems
- Broadband Access Networks

Novel specific-knowledge courses

- Wireless Power Transfer and Energy Harvesting
- Artificial Intelligence and Machine Learning for communication systems

Module: Telecommunications and Signal processing

Enhanced selected courses in ongoing study programmes

- Detection and Estimation
- Principles of Software Radio

Novel specific-knowledge courses

- Intelligent Audio Algorithms
- Advanced Signal and Data Processing
- Computing for IoT Communications
- Telecommunication and Information Technologies in Telemedicine

P10: University of Novi Sad
Faculty of Technical Sciences

Study program: Power, Electronic and Telecommunication Engineering

Modules: 1- Information and Communication Technology

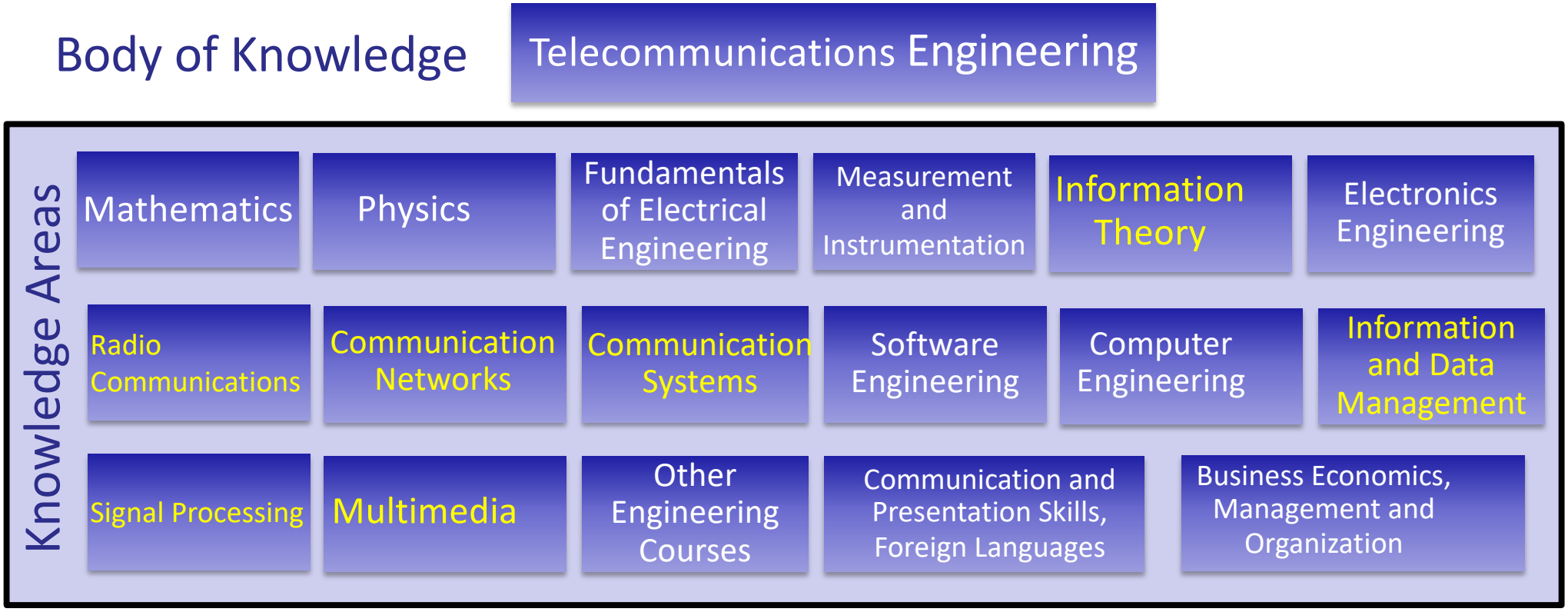
2- Signal Processing

Enhanced selected courses in ongoing study programmes

Novel specific-knowledge courses

- Big Data - Management and Analysis (module: 1, 2)
- Cognitive Radio (module: 1)
- Network Science (module: 1, 2)
- Security and Cryptography (module: 1, 2)

The Telecommunications Engineering Body of Knowledge



The Telecommunications Engineering Body of Knowledge

Body of Knowledge

Telecommunications Engineering

Knowledge Areas

Information Theory

- Security and Cryptography UNS
- Network Security UNTZ

Multimedia

- Intelligent Audio Algorithms UNI

Radio Communications

- Cognitive Radio UNS
- Wireless Power Transfer and Energy Harvesting UNI

Signal Processing

- Advanced Signal and Data Processing UNI
- Image and video compression UNSA
- Principles of Software Radio UNI

The Telecommunications Engineering Body of Knowledge

Body of Knowledge

Telecommunications Engineering

Knowledge Areas

Information and Data Management

- Artificial Intelligence and Machine Learning for communication systems UNI
- Detection and Estimation UNI
- Big Data - Management and Analysis UNS
- Network Science UNS

Communication Networks

- IoT Networks UNTZ
- Wireless Sensor Networks UB
- IoT Networks UB
- Broadband Access Networks UNI
- Telecommunications Network Management UNSA

Cmmunications Systems

- Telecommunication and Information Technologies in Telemedicine UNI
- Computing for IoT Communications UNI
- Circuit Design for 5G Systems UNI
- Advanced telecommunication protocols and new generation networks UNSA