



Module Guide

Internet of Things

Faculty Computer Science
Examination regulations 01.10.2017
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IAS-01 Mathematics

Module code	IAS-01
Module coordination	Prof. Dr. Terezia Toth
Course number and name	1101 Mathematics 1 2101 Mathematics 2
Lecturers	Prof. Dr. Wolfgang Dorner Prof. Dr. László Juhász Prof. Dr. Terezia Toth
Semester	1, 2
Duration of the module	2 semester
Module frequency	annually
Course type	required course
Semester periods per week (SWS)	13
ECTS	13
Workload	Time of attendance: 120 hours self-study: 120 hours Total: 240 hours
Language of Instruction	German

Module Objective

1101 Mathematics 1

Type of Examination

written ex. 90 min.



2101 Mathematics 2

Type of Examination

written ex. 90 min.



IAS-02 Physics

Module code	IAS-02
Module coordination	Prof. Dr. Marcus Barkowsky
Course number and name	1102 Physics
Lecturers	Prof. Dr. Richard Hämmerle Prof. Dr. Gerald Kupris NN NN PK AI/IAS/CS
Semester	1
Duration of the module	1 semester
Module frequency	annually
Course type	required course
Level	
Semester periods per week (SWS)	4
ECTS	5
Workload	Time of attendance: 60 hours self-study: 60 hours Total: 120 hours
Type of Examination	written ex. 90 min.
Duration of Examination	90 min.
Weight	
Language of Instruction	German

Module Objective

Develop understanding of physical relationships: mathematical modelling of physical phenomena; learn about basic physical concepts and laws and how to apply them; Solve physical problems; Conduct and evaluate experiments.

Entrance Requirements

Basic knowledge of differential, integral and vector calculus



Learning Content

Introduction of physical methods;
Mechanics (kinematics and dynamics of particles);
Vibration and Waves;
Electrical;
Solid state physics

1102 Physics

Type of Examination

part of module exam



IAS-03 Fundamentals of Electronics

Module code	IAS-03
Module coordination	Prof. Dr. Marcus Barkowsky
Course number and name	1103 Basics of Electrical Engineering 1104 Basics of Digital Engineering
Lecturer	Prof. Dr. Robert Bösnecker
Semester	1
Duration of the module	1 semester
Module frequency	annually
Course type	required course
Level	
Semester periods per week (SWS)	6
ECTS	7
Workload	Time of attendance: 90 hours self-study: 90 hours Total: 180 hours
Type of Examination	course assessment, written ex. 90 min.
Duration of Examination	90 min.
Weight	
Language of Instruction	German

Module Objective

Entrance Requirements

Learning Content

DC Teaching
Electric charge and current density
Electric potential and voltage
Ohm's Law
Specifically Resistivity and conductivity



Temperature dependence from electrical
Resistance types
Electrical work/energy
Electrical power and efficiency
relationally & Arrow systems
Kirchhoff's laws
Ideal and linear electrical sources
Series Connection
Parallel connection
Delta-Star transformation
Network calculation
Superposition theorem
Equivalent voltage source
Alternating electricity theory
Periodic conditions
Sinusoidal sizes
Cursors
Complex calculations
Performance and energy
passive equivalent circuits
Series connection of R,L,C
Parallel-circuit von R,L,C
Branched circuits
Networks and transformations
Simple RC-filter
Transfer functions

1103 Basics of Electrical Engineering

Type of Examination

part of module exam



1104 Basics of Digital Engineering

Type of Examination

part of module exam



IAS-04 Fundamentals of Computer Science

Module code	IAS-04
Module coordination	Prof. Dr. Andreas Berl
Course number and name	1105 Fundamentals of Computer Science 1106 Basics of Programming
Lecturers	Prof. Dr. Andreas Berl Nicki Bodenschatz Markus Eider
Semester	1
Duration of the module	1 semester
Module frequency	annually
Course type	required course
Semester periods per week (SWS)	8
ECTS	10
Workload	Time of attendance: 120 hours self-study: 120 hours Total: 240 hours
Type of Examination	written ex. 120 min.
Duration of Examination	120 min.
Language of Instruction	German

Module Objective

1105 Fundamentals of Computer Science

Type of Examination

part of module exam



1106 Basics of Programming

Type of Examination

part of module exam



IAS-05 Web programming 1

Module code	IAS-05
Module coordination	Prof. Dr. Udo Garmann
Course number and name	2102 Web programming 1
Lecturers	Prof. Dr. Udo Garmann Andreas Weber
Semester	2
Duration of the module	1 semester
Module frequency	annually
Course type	required course
Semester periods per week (SWS)	4
ECTS	5
Workload	Time of attendance: 60 hours self-study: 45 hours virtual learning: 15 hours Total: 120 hours
Type of Examination	course assessment, written ex. 60 min.
Duration of Examination	60 min.
Language of Instruction	German

Module Objective

2102 Web programming 1

Type of Examination

part of module exam



IAS-06 Object-oriented Programming

Module code	IAS-06
Module coordination	Prof. Dr. Peter Jüttner
Course number and name	2132 Object-oriented Programming
Lecturer	Prof. Dr. Peter Jüttner
Semester	2
Duration of the module	1 semester
Module frequency	annually
Course type	required course
Level	undergraduate
Semester periods per week (SWS)	4
ECTS	5
Workload	Time of attendance: 60 hours self-study: 90 hours Total: 150 hours
Type of Examination	course assessment, written ex. 90 min.
Duration of Examination	90 min.
Weight	5/210
Language of Instruction	German

Module Objective

- Knowledge and understanding about object-oriented programming and its concepts and methods
- Comprehensive knowledge of programming C++
- The ability to apply independently this knowledge when creating smaller Programs C++

Entrance Requirements

- Lecture "Introduction to Programming"
- Lecture "Foundations of computer science"



Learning Content

- Introduction: History, Differences to the "traditional" programming, applications
- Basics
 - Data encapsulation
 - Abstract data types
 - Motivation object
 - Motivation class
- Object orientation C++
 - Classes and objects
 - Constructors and destructors
 - Heredity
 - Data encapsulation
 - Polymorphism and Dynamic Binding
 - Peculiarities from C++
 - Input and output (console, file)
 - Overloaded operators
 - Static member and Static Methods
 - Copy constructors

2132 Object-oriented Programming

Type of Examination

part of module exam



IAS-07 Algorithms and Data Structures

Module code	IAS-07
Module coordination	Prof. Dr. Peter Jüttner
Course number and name	2104 Algorithms and Data Structures
Lecturer	Prof. Dr. Peter Jüttner
Semester	2
Duration of the module	1 semester
Module frequency	annually
Course type	required course
Level	undergraduate
Semester periods per week (SWS)	4
ECTS	5
Workload	Time of attendance: 60 hours self-study: 90 hours Total: 150 hours
Type of Examination	written ex. 90 min.
Duration of Examination	90 min.
Weight	5/210
Language of Instruction	German

Module Objective

- Knowledge and understanding of the concept „Algorithms“ and properties of algorithms.
- Knowledge and understanding of the term "recursion“.
- Knowledge and understanding of important algorithms for searching and sorting out data.
- Knowledge and understanding of important dynamic data structures.
- The ability to understand these principles and apply them independently on examples.

Entrance Requirements

Lectures:



- Introduction to Programming
- Foundations of computer science

Teaching Methods

Seminars and practical exercises, partly group work.

2104 Algorithms and Data Structures

Type of Examination

part of module exam



IAS-08 Softskills 1

Module code	IAS-08
Module coordination	Prof. Dr. Roland Zink
Course number and name	2105 Basics of Economics 2106 Rhetoric 2107 Fundamentals of Scientific Working 1 2108 English for Engineers - Basics
Lecturers	Dozenten und Dozentinnen für AWP und Sprachen Prof. Dr. Thomas Geiß Marcus Schlegel Javier Valdes
Semester	2
Duration of the module	1 semester
Module frequency	annually
Course type	required course
Semester periods per week (SWS)	8
ECTS	8
Workload	Time of attendance: 120 hours self-study: 120 hours Total: 240 hours
Language of Instruction	German

Module Objective

2105 Basics of Economics

Type of Examination

written ex. 90 min., written ex. 60 min.



2106 Rhetoric

Type of Examination

written student research project, written ex. 90 min., oral ex. 30 min.

2107 Fundamentals of Scientific Working 1

Type of Examination

written student research project, written ex. 90 min., written ex. 60 min.

2108 English for Engineers - Basics

Type of Examination

written ex. 90 min., oral ex. 30 min.



IAS-09 General Science, Mandatory Elective 1

Module code	IAS-09
Module coordination	Prof. Dr. Marcus Barkowsky
Course number and name	2109 General Science, Mandatory Elective 1
Semester	2
Duration of the module	1 semester
Module frequency	annually
Course type	required course
Level	undergraduate
Semester periods per week (SWS)	2
ECTS	2
Workload	Time of attendance: 30 hours self-study: 30 hours Total: 60 hours
Type of Examination	written ex. 90 min.
Duration of Examination	90 min.
Weight	10/210
Language of Instruction	German

Module Objective

Entrance Requirements

2109 General Science, Mandatory Elective 1

Type of Examination

written ex. 90 min.



IAS-10 Software-Engineering

Module code	IAS-10
Module coordination	Prof. Dr. Peter Jüttner
Course number and name	3101 Software-Engineering
Lecturer	Prof. Dr. Peter Jüttner
Semester	3
Duration of the module	1 semester
Module frequency	annually
Course type	required course
Level	
Semester periods per week (SWS)	6
ECTS	8
Workload	Time of attendance: 90 hours self-study: 150 hours Total: 240 hours
Type of Examination	course assessment, written ex. 90 min.
Duration of Examination	90 min.
Weight	
Language of Instruction	German

Module Objective

Entrance Requirements

- Foundations of computer science
- Introduction to Programming
- Object-oriented Programming

Learning Content

- Motivation und Definition



- Elements of Software Engineering
- Methodology
 - Requirements Engineering
 - Software design (general)
 - Software design (object oriented analysis and design)
- Implementation
- Code Metrics
- Software Test
- Software quality assurance

3101 Software-Engineering

Type of Examination

part of module exam



IAS-11 Operating Systems

Module code	IAS-11
Module coordination	Prof. Dr. Wolfgang Dorner
Course number and name	
Lecturers	Prof. Dr. Wolfgang Dorner Rainer Pöschl
Semester	3
Duration of the module	1 semester
Module frequency	
Course type	required course
Semester periods per week (SWS)	4
ECTS	5
Workload	Time of attendance: 0 hours Total: 0 hours
Type of Examination	written student research project, course assessment, written ex. 90 min.
Duration of Examination	90 min.
Language of Instruction	German

Module Objective



IAS-12 Networks and Network Technologies

Module code	IAS-12
Module coordination	Prof. Dr. Andreas Fischer
Course number and name	3103 Networks and Network Technologies
Lecturer	Prof. Dr. Andreas Fischer
Semester	3
Duration of the module	1 semester
Module frequency	annually
Course type	required course
Semester periods per week (SWS)	4
ECTS	5
Workload	Time of attendance: 60 hours self-study: 90 hours Total: 150 hours
Type of Examination	written student research project, course assessment, written ex. 90 min.
Duration of Examination	90 min.
Language of Instruction	German

Module Objective

3103 Networks and Network Technologies

Type of Examination

part of module exam



IAS-13 Microcontrollers and Sensors

Module code	IAS-13
Module coordination	Prof. Dr. Marcus Barkowsky
Course number and name	3104 Microcontrollers and Sensors
Lecturers	Prof. Dr. Gerald Kupris Kai Walz
Semester	3
Duration of the module	1 semester
Module frequency	
Course type	required course
Semester periods per week (SWS)	4
ECTS	5
Workload	Time of attendance: 60 hours self-study: 90 hours Total: 150 hours
Type of Examination	written student research project, course assessment, written ex. 90 min.
Duration of Examination	90 min.
Language of Instruction	German

Module Objective



IAS-14 Usability Interaction and User Interface Design

Module code	IAS-14
Module coordination	Prof. Dr. Marcus Barkowsky
Course number and name	3105 Usability Interaction and User Interface Design
Lecturers	Prof. Dr. Marcus Barkowsky Prof. Dr. Goetz Winterfeldt
Semester	3
Duration of the module	1 semester
Module frequency	
Course type	required course
Level	Undergraduate
Semester periods per week (SWS)	4
ECTS	5
Workload	Time of attendance: 60 hours self-study: 90 hours Total: 150 hours
Type of Examination	written student research project, course assessment, written ex. 90 min.
Duration of Examination	90 min.
Weight	1.0
Language of Instruction	German

Module Objective

The successful application of Interactive Systems and Internet of Things devices depends strongly on the human-machine communication and the interface design that enables this communication. In this lecture, the students learn perceptual and design-oriented competences. Particular emphasis is given on user-centred and usage-situation-centred design. They learn how to design and implement an intuitive workflow using visual, acoustic and haptic user interfaces.

List of competences:



- Knowledge of the visual, auditory and haptic perception of the human
- Knowledge on design guidelines for interfaces
- Knowledge of interaction design for traditional interfaces (keyboard, mouse, touchscreen)
- Knowledge of modern interaction techniques, including but not limited to speech input and output, haptic feedback
- Analysis of existing user interface with respect to utility, usability, user experience and quality of experience, including knowledge of the corresponding national and international standards
- Hands-on Analysis of the visual feedback using eyetracking
- Design and implementation of visual, auditory and haptic user interfaces

Applicability in this and other Programs

Mandatory for IAS, possible FWP for AI

Entrance Requirements

Learning Content

- Introduction to the visual, auditory and haptic perception of the human
- Basics of visual design for user interfaces
- Introduction to utility, usability, user experience and quality of experience regarding user interface and documentation, including test methodologies
- Implementation basics for touch-enabled interfaces using a mobile platform (e.g. Android)
- Designing and conducting an eye-tracking experiment
- Interaction design with haptic feedback
- Architectures and implementation strategies for voice control
- Emotional interaction components with humanoid robots

Teaching Methods

Seminar style, Learning Lab, and projects

Recommended Literature

- Goldstein, B. E. (2006). *Sensation and Perception* (7th ed.). Wadsworth Publishing.
- LaViola, Kruijff, McMahan, Bowman, Poupyrev, (2017), "3D user Interfaces – Theory and Practice", Pearson Education, ISBN: 978-0-13-403432-4



- Grünwied (2017), "Usability von Produkten und Anleitungen im digitalen Zeitalter", Publicis, ISBN: 978-3-89578-730-0
- Jacobsen, Meyer, (2018), „Praxisbuch Usability und UX“, Rheinwerk Verlag, ISBN: 978-3-8362-4423-7
- Semler (2016), „App-Design“, Rheinwerk Verlag, ISBN 978-3-8362-3453-5
- Möller, Raake, (2014), „Quality of Experience – Advanced Concepts, Applications and Methods“, ISBN: 978-3-319-02680-0
- Bojko (2013) "Eye Tracking the User Experience", ISBN: 978-1-933820-10-1

3105 Usability Interaction and User Interface Design

Type of Examination

part of module exam



IAS-15 General Science, Mandatory Elective 2

Module code	IAS-15
Module coordination	Prof. Dr. Marcus Barkowsky
Course number and name	3106 General Science, Mandatory Elective 2
Lecturer	Dozenten und Dozentinnen für AWP und Sprachen
Semester	3
Duration of the module	1 semester
Module frequency	
Course type	required course
Semester periods per week (SWS)	2
ECTS	2
Workload	Time of attendance: 30 hours self-study: 30 hours Total: 60 hours
Type of Examination	written student research project, written ex. 90 min., written ex. 60 min.
Duration of Examination	150 min.
Language of Instruction	German

Module Objective

3106 General Science, Mandatory Elective 2

Type of Examination

part of module exam



IAS-16 Project, Mandatory Elective

Module code	IAS-16
Module coordination	Prof. Dr. Marcus Barkowsky
Course number and name	4101 Project, Mandatory Elective
Lecturer	Prof. Dr. Marcus Barkowsky
Semester	4
Duration of the module	1 semester
Module frequency	annually
Course type	required course
Level	undergraduate
Semester periods per week (SWS)	4
ECTS	5
Workload	Time of attendance: 0 hours Total: 0 hours
Type of Examination	written student research project
Weight	5/210
Language of Instruction	German

Module Objective

A typical challenge in the domain of Interactive Systems and Internet of Things will be provided as project idea. The students first understand the requirements, then they plan, implement and document the project's progress in a typical task force working style.

Entrance Requirements



IAS-17 Data bases

Module code	IAS-17
Module coordination	Prof. Dr. Wolfgang Dorner
Course number and name	4102 Data bases
Lecturers	Prof. Dr. Wolfgang Dorner Prof. Dr. Udo Garmann
Semester	4
Duration of the module	1 semester
Module frequency	
Course type	required course
Semester periods per week (SWS)	4
ECTS	5
Workload	Time of attendance: 0 hours Total: 0 hours
Type of Examination	written ex. 90 min.
Duration of Examination	90 min.
Language of Instruction	German

Module Objective

4102 Data bases

Type of Examination

part of module exam



IAS-18 Project management

Module code	IAS-18
Module coordination	Prof. Dr. Christina Bauer
Course number and name	4103 Project management
Lecturers	Prof. Dr. Christina Bauer Prof. Dr. Goetz Winterfeldt
Semester	4
Duration of the module	1 semester
Module frequency	
Course type	required course
Semester periods per week (SWS)	4
ECTS	5
Workload	Time of attendance: 0 hours Total: 0 hours
Type of Examination	written ex. 90 min.
Duration of Examination	90 min.
Language of Instruction	German

Module Objective

4103 Project management

Type of Examination

part of module exam



IAS-19 Special Protocols of IoT

Module code	IAS-19
Module coordination	Prof. Dr. Marcus Barkowsky
Course number and name	4104 Special Protocols of IoT
Lecturer	Prof. Dr. Marcus Barkowsky
Semester	4
Duration of the module	1 semester
Module frequency	annually
Course type	required course
Level	Undergraduate
Semester periods per week (SWS)	4
ECTS	5
Workload	Time of attendance: 60 hours self-study: 60 hours Total: 120 hours
Type of Examination	written ex. 90 min.
Duration of Examination	90 min.
Weight	1.0
Language of Instruction	German

Module Objective

The main objective of this lecture is the proficient design and application of communication protocols in IoT architectures. The students know how to understand, analyze and implement standardized protocols. They also know how to extend or improve existing protocols.

The range of IoT protocols includes the identification, registration and configuration of IoT devices, establishing and configuring the infrastructure of IoT devices. The discussion includes security aspects of IoT data transmission channels. The spectrum of topics ranges from Bluetooth, Zigbee, LoRaWan and 5G LTE NB-IoT to MQTT and CoAP as well as EEBus and ETSI's M2M protocols. Important IoT architecture questions such as Micro-Grid, Edge, Fog and Cloud communication are explained.



The following is a list of acquired competences:

- Knowledge of the most important protocols in general and industrial IoT
- Knowledge of the structure of international transmission standards
- Knowledge of typical communication architectures in IoT
- Knowledge of security requirements for IoT communication including the required protocols
- Analyzing and critizing protocols with regard to IoT requirements such as low latency, long distance, low energy consumption, high reliability, reconfiguration
- Designing and implementing protocols and proposing extensions for particular cases
- Knowledge, concepts and implementation of encrypted Machine-to-Machine communication

Applicability in this and other Programs

Mandatory for IAS, possible FWP for AI

Entrance Requirements

IAS12: Networks and Network Technologies

Learning Content

- Introduction to IoT architectures and communication: Machine2Machine Communication, Edge, Fog and Cloud architectures
- Basic structure and design of protocols and the work of standardization bodies: ETSI, IEEE, ISO, ITU, ...
- Criteria for selecting protocols: Latency, Band width, Robustness, Licensing, ...
- Lower OSI-Layers: Bluetooth, WIFI, Zigbee, Z-Wave, LoRaWan, SigFox, NB-IoT, ...
- Identification and registration: uPnP, mDNS, HyperCat, ...
- Data exchange protocols: MQTT, MQTT-SN, CoAP, XMPP-IoT, REST, SOAP, EEBus, ..
- Other Protocols: IEEE P2413, IoTivity, Alljoyn, Weave
- Security standards: Open Trust protocol, X.509, ...
- Routing protocols: Multipath-Routing, Dynmic Routing, sensor networks
- Estimation of complexity and required data security for networked IoT applications
- Implementing IoT applications using various protocols



- Design and implementation of a protocol for a particular application or an extension to an existing protocols

Teaching Methods

Seminar style with exercises, in particular implementation and analysis of protocols and practical aspects of security

Recommended Literature

- Tannenbaum, Wetherall: Computernetzwerke, Pearson Studium, 2012, ISBN: 978-3868941371
- Gessler, Krause: Wireless-Netzwerke für den Nahbereich, Springer Vieweg, 2015, ISBN: 978-3834812391
- Müller: Bluetooth, MITP, 2001, ISBN: 978-3826607387
- Rehmani, Pathan: Emerging Communication Technologies Based on Wireless Sensor Networks: Current Research and Future Applications, 2016, ISBN: 978-1498724852
- Claudia Eckert: IT-Sicherheit: Konzepte - Verfahren – Protokolle, 2018, ISBN: 978-3110551587
- Fadi Al-Turjman: Multimedia-enabled Sensors in IoT: Data Delivery and Traffic Modelling, 2018, ISBN: 978-0815387114

4104 Special Protocols of IoT

Type of Examination

part of module exam



IAS-20 Mandatory Elective Module 1: Product Management and Marketing

Module code	IAS-20
Module coordination	Prof. Dr. Marcus Barkowsky
Course number and name	4105 Mandatory Elective Module 1: Product Management and Marketing
Semester	4
Duration of the module	1 semester
Module frequency	annually
Course type	required course
Level	undergraduate
Semester periods per week (SWS)	8
ECTS	10
Workload	Time of attendance: 150 hours self-study: 150 hours Total: 300 hours
Weight	10/210
Language of Instruction	German

Module Objective

The students choose one or several lectures given at the Deggendorf Institute of Technology (or in accordance with the study coordinator from other institutions such as VHB). The topics and the learning objectives of the lectures shall be aligned to the title and topic of this lecture. The number of ECTS credits for this module shall correspond to the sum of ECTS given for the individual lectures.



Entrance Requirements

4105 Mandatory Elective Module 1: Product Management and Marketing

Type of Examination

written examination, student research project



IAS-21 Internship

Module code	IAS-21
Module coordination	Prof. Dr. Udo Garmann
Course number and name	5101 Internship 5102 Internship Seminar 5103 Internship Addendum
Lecturer	Prof. Dr. A Admin
Semester	5
Duration of the module	1 semester
Module frequency	
Course type	required course
Semester periods per week (SWS)	4
ECTS	30
Workload	Time of attendance: 0 hours Total: 0 hours
Language of Instruction	German

Module Objective

5101 Internship

Type of Examination

course assessment



5102 Internship Seminar

Type of Examination

written student research project

5103 Internship Addendum

Type of Examination



IAS-22 Entrepreneurship

Module code	IAS-22
Module coordination	Prof. Dr. Thomas Geiß
	Unternehmensgründung
Course number and name	6101 Entrepreneurship
Lecturer	Prof. Dr. Thomas Geiß
Semester	6
Duration of the module	1 semester
Module frequency	annually
Course type	required course
Semester periods per week (SWS)	4
ECTS	5
Workload	Time of attendance: 0 hours Total: 0 hours
Type of Examination	written student research project, course assessment
Language of Instruction	German

Module Objective



IAS-23 Software Project

Module code	IAS-23
Module coordination	Prof. Dr. Marcus Barkowsky
Course number and name	6102 Software Project
Lecturers	Prof. Dr. Gökçe Aydos Prof. Dr. Marcus Barkowsky Prof. Dr. Peter Faber
Semester	6
Duration of the module	1 semester
Module frequency	annually
Course type	required course
Semester periods per week (SWS)	8
ECTS	10
Workload	Time of attendance: 120 hours self-study: 180 hours Total: 300 hours
Type of Examination	written student research project
Language of Instruction	German

Module Objective

6102 Software Project

Type of Examination

part of module exam



IAS-24 Web Programming 2

Module code	IAS-24
Module coordination	Prof. Dr. Udo Garmann
Course number and name	6103 Web Programming 2
Lecturers	Prof. Dr. Udo Garmann Andreas Weber
Semester	6
Duration of the module	1 semester
Module frequency	
Course type	required course
Semester periods per week (SWS)	4
ECTS	5
Workload	Time of attendance: 0 hours Total: 0 hours
Type of Examination	written student research project, course assessment, written ex. 90 min.
Duration of Examination	90 min.
Language of Instruction	German

Module Objective

6103 Web Programming 2

Type of Examination

part of module exam



IAS-25 Mandatory Elective Module 2: Mobile Interactive Systems

Module code	IAS-25
Module coordination	Prof. Dr. Marcus Barkowsky
Course number and name	6104 Mandatory Elective Module 2: Mobile Interactive Systems
Lecturer	Prof. Thomas Limbrunner
Semester	6
Duration of the module	1 semester
Module frequency	
Course type	required course
Level	undergraduate
Semester periods per week (SWS)	8
ECTS	10
Workload	Time of attendance: 0 hours Total: 0 hours
Type of Examination	written student research project, course assessment, written ex. 90 min.
Duration of Examination	90 min.
Weight	10/210
Language of Instruction	German

Module Objective

The students choose one or several lectures given at the Deggendorf Institute of Technology (or in accordance with the study coordinator from other institutions such as VHB). The topics and the learning objectives of the lectures shall be aligned to the title and topic of this lecture. The number of ECTS credits for this module shall correspond to the sum of ECTS given for the individual lectures.



Entrance Requirements

6104 Mandatory Elective Module 2: Mobile Interactive Systems

Type of Examination

part of module exam



IAS-26 Mandatory Elective Module 3: Architecture and Implementation of Safe Network Infrastructure

Module code	IAS-26
Module coordination	Prof. Dr. Marcus Barkowsky
Course number and name	7101 Mandatory Elective Module 3: Architecture and Implementation of Safe Network Infrastructure
Lecturer	Prof. Dr. A Admin
Semester	7
Duration of the module	1 semester
Module frequency	annually
Course type	required course
Level	undergraduate
Semester periods per week (SWS)	8
ECTS	10
Workload	Time of attendance: 0 hours Total: 0 hours
Type of Examination	written student research project, course assessment, written ex. 90 min.
Duration of Examination	90 min.
Weight	10/210
Language of Instruction	German

Module Objective

The students choose one or several lectures given at the Deggendorf Institute of Technology (or in accordance with the study coordinator from other institutions such as VHB). The topics and the learning objectives of the lectures shall be aligned to the title and topic of this lecture. The number of ECTS credits for this module shall correspond to the sum of ECTS given for the individual lectures.

Entrance Requirements



IAS-27 Softskills 2

Module code	IAS-27
Module coordination	Prof. Dr. Roland Zink
Course number and name	7102 Fundamentals of Scientific Working 2 7103 English for Engineers - Presenting in English
Lecturers	Dozenten und Dozentinnen für AWP und Sprachen Prof. Dr. Roland Zink
Semester	7
Duration of the module	1 semester
Module frequency	
Course type	required course
Semester periods per week (SWS)	4
ECTS	5
Workload	Time of attendance: 0 hours Total: 0 hours
Language of Instruction	German, English

Module Objective



IAS-28 Bachelor Thesis

Module code	IAS-28
Module coordination	Prof. Dr. Marcus Barkowsky
Course number and name	7104 Bachelor Thesis 7105 Bachelor Colloquium
Lecturer	Prof. Dr. A Admin
Semester	7
Duration of the module	1 semester
Module frequency	
Course type	required course
Semester periods per week (SWS)	4
ECTS	15
Workload	Time of attendance: 0 hours Total: 0 hours
Language of Instruction	German

Module Objective

7104 Bachelor Thesis

Type of Examination

bachelor thesis

7105 Bachelor Colloquium

Type of Examination

oral ex. 30 min.

