

Module handbook

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Module: Master thesis

Module number	20
Person in charge for module	Prof. Dr. Udo Garmann
Study focus	
Course number and course name	20 Master thesis
Semester	3
Duration of the module	1 semester
Frequency of the module	
Type of the course	compulsory subject
Level	Master
Credit hours	0.0
ECTS	28.0
Workload	Self-study: 800.0 hours Total: 800.0 hours
Language of instruction	German

Aims of the module

Independent professional work;
Professional presentation of work results in the Master thesis

Admission resp. recommended requirements

All examinations of the 1st and 2nd semester successfully taken

Content

Independent writing of a scientific or engineering paper concerning one topic of Media Technology and Production, under the guidance of a lecturer.

20 Master Thesis

Content

Independent writing of a scientific or engineering paper concerning one topic of Media Technology and Production, under the guidance of the lecturer.

Seminar: Lectures/presentations with discussions

Types of examinations

Final grade forming examination seminar paper

Module: Engineering Mathematics

Module number	F-01
Person in charge for the module	Prof. Dr. Peter Faber
Study focus	
Course number and course name	F1101 Mathematics 1 F2101 Mathematics 2
Lecturers	Prof. Dr. Peter Faber Prof. Dr. Gerald Kupris Prof. Dr. Christine Wünsche
Semesters	1, 2
Duration of the module	2 semesters
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	8.0
ECTS	9.0
Workload	Compulsory attendance: 92.0 hours Self-study: 208.0 hours Total: 300.0 hours
Language of instruction	German

Aims of the module

The students are to be able to apply mathematical terms and methods to technical tasks in their studies and profession. Furthermore, it is the aim of the module to encourage analytical thinking and to create an awareness for systematic problem solutions.

Additionally, students gain the following competencies: They have a complete command over algebraic conversions, e.g. the symbolic fractions. They are able to solve elementary geometric tasks in the vector analysis. They command calculations with real and complex numbers, e.g. the conversion into different representations.

They know basic algebraic structures (like the term vector space) and understand the connections between these basic algebraic structures. They know elementary functions (e.g. exponentiation, trigonometric functions), definition, domain, range, special functional values, important calculation rules (e.g. differentiability).

In particular, they are able to examine functions qualitatively (like outlining graphs). They know the definition of derivation and physical, geometric and analytical interpretations. They know differentiation rules and know how to apply them to expressions that are built from elementary functions. They know basic integrals and are able to apply the integration by substitution and the partial integration to simple cases. They are able to apply integral calculus to geometric and physical tasks.

They are able to examine systematically linear functions and linear equation systems, f.i. with the aid of the Gaussian elimination method. They are capable to apply the matrix calculation, to present and examine problems of linear algebra by means of linear functions and/or equation systems.

Admission resp. recommended requirements

The successful attendance of Mathematics 1 is recommended for Mathematics 2.

Content

Mathematics 1 and Mathematics 2 are conducted in similar lectures. The content can be considered as consistent, part A and part B are conducted parallel here:

Part A

1. Sets and numbers
2. Equations with one unknown variable
3. Inequation with one unknown variable
4. Sequences
5. Functions
6. Differential calculation of one variable
7. Integral calculation of one variable
8. Queues
9. Differential calculation of several variables
10. Integral calculation of several variables

Part B

1. Algebraic structures and vector calculation
2. Complex numbers
3. Linear algebra

Instruction and learning methods

Seminar-like lessons with exercises

Literature

- Papula, Lothar: *Mathematik für Ingenieure und Naturwissenschaftler*. Band 1-3. 12. Auflage. Wiesbaden. Vieweg+Teubner, 2009.
- Rießinger, Thomas: *Mathematik für Ingenieure*. 7. Auflage. Berlin: Springer, 2009.

For linear algebra and algebraic structures maybe also:

- Fischer, Gerd: *Lineare Algebra*; Wiesbaden: Vieweg, 1989.

F1101 Mathematics 1

Kinds of examinations

Written exam 90 min

F2101 Mathematics 2

Types of examinations

Part of the module examination

Module: Electrical Engineering

Module number F-02
Person in charge for the module Prof. Dr. Detlef Brumbi
Study focus

Course number and course name

F 1102 Principles of Electrical Engineering 1
F 2102 Principles of Electrical Engineering 2

Lecturers

Prof. Dr. Werner Bogner
Prof. Dr. Detlef Brumbi

Semesters

1, 2

Duration of the module

2 semesters

Frequency of the module

annually

Type of the course

compulsory subject

Level

Bachelor

Credit hours

8.0

ECTS

10.0

Workload

Compulsory attendance: 46.0 hours

Self-study: 104.0 hours

Total: 150.0 hours

Language of instruction

German

Aims of the module

Understanding of the physical principles of Electrical Engineering

Ability to apply general methods for the analysis of networks

Ability to determine parameters of periodic signals

Ability to calculate networks with sinus-shaped excitation under the application of the complex alternating current calculation and vector diagrams

Ability to calculate and dimension electrical filters

Ability to calculate the spectrum of non-sinus-shaped signals

Knowledge of features applications of electronic components

Ability to fundamentally understand and practice-oriented use of electronic components

Ability to analyse and apply analogue semiconductor circuits

Ability to design and dimension simple analogue semiconductor circuits

Content

1. Introduction

- a) Aims
- b) Applications in Media Technology
- c) Engineering Mathematics
- d) History of Electrical Engineering
- e) Physical quantities

- f) International unit system
- g) Derived units
- h) Decimal factors
- i) Greek letters

2. Electric parameters

- a) The electric current
- b) The electric tension
- c) The ohmic law
- d) Work and achievement

3. Continuous current circuits

- a) Conventions
- b) Two-poles
- c) Interconnection of two-poles
- d) Network calculation
- e) Non-linear elements

4. Basic term of the alternating current technology

- a) Periodic time functions
- b) Sinus values
- c) Complex alternating current calculation
- d) Operation of ideal passive two-poles with sinus values
- e) Sine current networks
- f) Complex transfer function

5. Frequency features of networks

- a) Bode diagrams
- b) Electric filters

6. Periodic non-sinus-shaped values

- a) Examples of periodic signals
- b) Fourier series
- c) Overlapping of sinus-shaped values
- d) Effective values
- e) Klirr factor

7. Non-periodic values

- a) Examples of non-periodic values
- b) Fourier transformation
- c) Network transfers of signals
- d) Transfer of digital signals
- e) Stochastic signals
- f) Discreet Fourier tranformation
- g) Application areas of the FT

8. Electronic components and circuits

- a) Passive components
- b) Principles of semiconductors

- c) Semiconductor diodes
- d) Bipolar transistor
- e) Operations amplifiers

Instruction and learning methods

Seminar-like lessons with exercises

Literature

Beuth: *Bauelemente*. Würzburg: Vogel, 2006.

Frohne, Löcherer, Müller: *Grundlagen der Elektrotechnik*, Wiesbaden: Vieweg, 2008.

Führer: *Grundgebiete der Elektrotechnik* (auch Aufgabenbuch), München: Hanser, 2006/2007.

Goerth: *Bauelemente und Grundschaltungen*. Stuttgart: Teubner, 1999.

Hagmann: *Grundlagen der Elektrotechnik* (auch Aufgabenbuch), Wiebelsheim, Aula, 2008.

Linse, Fischer: *Elektrotechnik für Maschinenbauer*. Wiesbaden: Teubner, 2009.

Marinescu, Winter: *Basiswissen Gleich- und Wechselstromtechnik*, Wiesbaden: Vieweg, 2007.

Ose: *Elektrotechnik für Ingenieure, Grundlagen*, Bd. 1, München: Hanser, 2008.

Tietze; Schenk: *Halbleiter-Schaltungstechnik*. 13. Auflage, Berlin: Springer, 2010.

F1102 Principles of Electrical Engineering 1

Types of examinations

Written exam 90 min

F2102 Principles of Electrical Engineering 2

Types of examinations

Part of the module examination

Module: Physics

Module number	F-03
Person in charge for the module	Prof. Dr. Gerhard Krump
Study focus	
Course number and course name	F1103 Physics 1 F 2103 Physics 2
Lecturers	Prof. Dr. Engelbert Hofbauer Prof. Dr. Gerhard Krump
Semesters	1, 2
Duration of the module	2 semesters
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	8.0
ECTS	10.0
Workload	Compulsory attendance: 150.0 hours Self-study: 150.0 hours Total: 300.0 hours
Language of instruction	German

Aim of the module

The students are to be capable to know, understand and describe mathematically physical regularities in order to eventually recognise and analyse independently complex connections in different technical disciplines. On this basis, new products can be tested and judged in an engineering way but can be also developed and produced.

In the first part, the students learn the connections of physical laws as the foundation of the engineering science by means of complex procedures in the mechanics and kymatology. The experimental investigation of mechanical natural laws and their mathematical description as a basic method of scientific working is central.

The mechanic regularities are expanded in the second part to media technology relevant areas and on the basis of application-oriented examples like loudspeakers and the Braun tube the interaction of various disciplines like electricity, magnetism, mechanics and acoustics are discussed in order to train the holistic view of physical connections.

Admission resp. recommended requirements

Basic knowledge in differential, integral and vector calculation

Instruction and learning methods

Lectures and seminar-like lessons with sample calculations and numerous demonstrations and experiments,

exercises, in which respectively the first task of the 7 exercise sheets summarizes again the topics and which is calculated during the lecture of the lecturer in order to profound the topics computationally. The further exercises are to be calculated at home during the self-study and are subsequently discussed in tutorials by students of higher semesters.

Special

The module forms the basis for the subjects sound technology, sound technology practical training, digital media, audio applications

Literature

- Bergmann/Schäfer: *Experimentalphysik, Elektromagnetismus*. W. de Gruyter-Verlag, 2006.
- Bergmann/Schäfer: *Experimentalphysik. Optik*. W. de Gruyter-Verlag, 2004.
- Dobrinski, P.: *Physik für Ingenieure*. Teubner-Verlag, 2007.
- Dorn, F. et al.: *Physik Sekundarstufe I*. Schrödel-Verlag, 2001.
- Dorn, F. et al.: *Physik Sekundarstufe II*. Schrödel-Verlag, 2006.
- Fastl H. und Zwicker E: *Psychoacoustics*. Springer-Verlag, 2010.
- Hering, E. et al.: *Physik für Ingenieure*. Springer-Verlag, 2008.
- Kuchling, H.: *Taschenbuch der Physik*. Leipzig: Fachbuchverlag, 2007.
- Leute, U.: *Physik*. Hanser-Verlag, 2004.
- Lindner, H.: *Physik für Ingenieure*. Leipzig: Fachbuchverlag, 2006.
- Paus, H.: *Physik*. Hanser-Verlag, 2007.
- Stroppe, H.: *Physik*. Leipzig: Fachbuchverlag, 2008.
- Tipler, P.: *Physik*. Elsevier-Verlag, 2009
- Zeitler, J. et al.: *Physik für Techniker*. Leipzig: Fachbuchverlag, 2010.
- Zwicker, E. et al.: *Elektroakustik*. Springer-Verlag, 2003.
- Zwicker, E.: *Psychoakustik*. Springer-Verlag, 1982.

F1103 Physics 1

Content

9. Physical cognitive processes
10. Errors computation: systematic errors, statistic errors
11. Mechanics: velocity, acceleration, force, throw equations, momentum, impact, energy, rotating movements
12. Vibrations: harmonic vibrations, torsional vibration, swing of the pendulum, forced and damped vibrations
13. Waves: kinds of waves, wave propagation, Huygens' principle, deflection, diffraction

Types of examinations

Written exam 90 min

F2103 Physics 2

Content

1. Acoustics: sound field parameters, level calculation, auditory field, resonance systems
Room acoustics: reflection, absorption, reverberation radius, reverberation time
Building acoustics: body-borne sound, acoustic insulation, standardisation, sound propagation
2. Electric fields: charge, Coulomb's Law, potential, voltage, induction, capacitance, energy
3. Magnetic fields: field line, flux density, Lorentz force, magnetomotive force law, magnetic circuit, induction, transformer, energy
4. Applications: Braun tube, tape recorder, loudspeaker and microphone converting technology
5. Optics: light, geometric optics, diffraction, deflection, interference
6. Lighting technology: radiometric and photometric parameters

Types of examinations

Part of the module examination

Literature

Module: Principles of Informatics

Module number	F-04
Person in charge for the module	Prof. Dr. Detlef Brumbi
Study focus	
Course number and course name	F2103 Informatics 1 F3103 Web programming
Lecturers	Prof. Dr. Detlef Brumbi Prof. Dr. Peter Faber Prof. Dr. Udo Garmann Prof. Dr. Goetz Winterfeldt
Semesters	1, 3
Duration of the module	3 semesters
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	6.0
ECTS	8.0
Workload	Compulsory attendance: 66.0 hours Self-study: 174.0 hours Total: 240.0 hours
Language of instruction	German

Aims of the module

- Understand mathematic fundamentals of informatics
- Ability to calculate with different number systems
- Recognise the different types of coding for numbers and texts
- Knowledge of basic functions of digital technology and their combination
- Ability to fundamentally understand and apply in practice computer components
- Understand basic functions of operating systems
- Understand fundamentals of the internet and their jeopardies
- Ability to analyse and design simple HTML-based websites
- Understand the enrichment of websites by interactive and creative elements
- Ability to implement websites with interactive and creative contents

Admission resp. recommended requirements

Mathematic rudimentary knowledge

Literature

Baumgarten, D.: *Kompakt im Doppelpack: HTML und JavaScript*. 1. Auflage. Wiesbaden: Vieweg, 2002.

Bruns, K.; Klimsa, P. (Hrsg.): *Informatik für Ingenieure kompakt*, 1. Auflage. Braunschweig/Wiesbaden: Friedr. Vieweg & Sohn, 2001.

Gumm, H.-P.; Sommer, M.: *Einführung in die Informatik*. 8. Auflage. München: Oldenbourg, 2009.

Henning, P.A.: *Taschenbuch Multimedia*, 4. Auflage. Leipzig: Fachbuchverlag, 2007.

Hering, E.; Gutekunst, J.; Dyllong, U.: *Handbuch der praktischen und technischen Informatik*, 2. Auflage. Berlin: Springer Verlag, 2000.

Herold, H.; Lurz, B.; Wohlrab, J.: *Grundlagen der Informatik*. 1. Auflage. München: Pearson Studium, 2006.

Holzinger, A.: *Basiswissen IT / Informatik. Band 1: Informationstechnik*. 1. Auflage. Würzburg: Vogel Buchverlag, 2002.

Horn, Ch.; Kerner, I.: *Lehr- und Übungsbuch Informatik. Band 1: Grundlagen und Überblick*. 1. Auflage. Leipzig, Fachbuchverlag, 1995.

Pomaska, G.: *Grundkurs Web-Programmierung*. 1. Auflage. Wiesbaden: Vieweg, 2005.

Schneider, W.: *Taschenbuch der Informatik*. 6. Auflage. München: Carl-Hanser-Verlag, 2007.

<http://de.selfhtml.org>, *HTML-Dateien selbst erstellen: SELFHTML*

F2103 Informatics 1

Content

1. Fundamentals

- a) History of informatics and computers
- b) Types of computers
- c) Definitions
- d) Methods in informatics

2. Number systems

- a) Formation principle
- b) Decimal numbers
- c) Binary, octal, hexadecimal numbers
- d) Conversion between number systems
- e) Basic calculating operations
- f) Negative numbers
- g) Rational numbers
- h) Other codings

3. Text encoding

- a) Definitions
- b) ASCII
- c) Unicode
- d) HTML codings
- e) Formatting codes

4. Digital technology

- a) Boolean algebra
- b) Basic operations
- c) Calculation laws
- d) Boolean assertions
- e) Digital circuits
- f) Circuit symbols
- g) Normal form, KV diagram
- h) Digital circuitries

5. Computer hardware

- a) Terms
- b) Processor
- c) Information units
- d) Bus systems
- e) Storage media
- f) Input and output devices
- g) Interfaces
- h) Interconnection

6. Operating systems

- a) Tasks
- b) History
- c) Operating types
- d) Structure
- e) Processes
- f) Examples
- g) Storage organisation
- h) DOS and Unix commands

7. Internet

- a) Development
- b) Structure
- c) Protocols
- d) Packet switching
- e) Applications
- f) http
- g) Domain Name System

8. Network security

- a) Basic terms
- b) Security threats
- c) Cryptography
- d) Symmetric encryption
- e) Public key encryption
- f) PGP
- g) Digital signature

9. HTML

- a) Application
- b) Editors
- c) Browsers
- d) Basic elements

Admission resp. recommended requirements

Mathematic redinary knowledge

Types of examinations

Part of the module examination

Methods

General part (Chapters 1-8): seminar-like lessons = lecture with exercises

HTML (Chapter 9): laboratory exercises on the PC

F3103 Web programming

Content

1. History and motivation

2. Forms and events

3. CSS

- a) Embedding in HTML
- b) Define formats
- c) Features
- d) The Boxing model
- e) Typical applications

4. DOM

- a) Structures of a HTML file
- b) Access to the elements

5. Fundamentals of JavaScript/ECMAScript

- a) Implementation of a JavaScript program
- b) Variables
- c) Expressions and statements
- d) Functions
- e) Occurences and further interactive elements
- f) Libraries
- g) Typical applications

Admission resp. recommended requirements

Mathematic rudinary knowledge

Types of examinations

Proof of academic achievement in written, part of the module examination,
written examination 90 min

Module: Applied Informatics

Module number	F-05
Person in charge for the module	Prof. Dr. Peter Faber
Study focus	
Course number and course name	F3102 Informatics 2 F4102 Informatics 3
Lecturers	Prof. Dr. Peter Faber Prof. Dr. Udo Garmann Prof. Dr. Goetz Winterfeldt
Semesters	3,4
Duration of the module	2 semesters
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	8.0
ECTS	9.0
Workload	Compulsory attendance: 92.0 hours Self-study: 178.0 hours Total: 270.0 hours
Language of instruction	German

Aims of the module

The module's aim is to impart the fundamentals of programming. Here, the programming language Java is treated in the lecture Informatics 2. In Informatics 3 the topic web programming with PHP is discussed.

Generally, the following knowledge and skills are imparted:

- Knowledge about the program structure and execution
- Ability to develop simple programs oneself
- Know the difference between desktop and internet applications

The course "Informatics 2" of the module "Applied Informatics" gives to the students an insight into the software development by means of a higher programming language (e.g. Java). They understand the concepts of data storage in volatile and non-volatile memory, of variables, data structures, functions and know important data structures. They also understand the concepts of object-oriented programming (classes and objects) and are capable to implement small programs as directed to a higher programming language and to analyse errors that emerge during the development.

Special knowledge and skills in Informatics 3 are:

- to know the basic elements of a PHP program
- to be able to implement form evaluations with PHP
- to be able to store data in files
- to recognise XML shapeliness
- to be able to store data in databanks

Admission resp. recommended requirements

Formally: none

As to content: Informatics 1

Instructing and learning methods

Seminar-like lessons with practical exercises

Special

Course administration with Moodle

F3102 Informatics 2

Content

1. Introduction
2. Calculation structures and algorithms
 - a) The term algorithm
 - b) Data structures and calculation structures
 - c) Objects
3. Higher programming languages
 - a) Development environment, compiler, interpreter
 - b) Object-oriented programming
 - c) Control flow in programs
 - d) Collections
 - e) Non-volatile data storage
4. Projects and summary

Admission resp. recommended requirements

Formally: none

As to content: Informatics 1

Types of examinations

Part of the module examination

Methods

Seminar-like lessons with practical exercises

Literature

Broy, Manfred: *Informatik - Eine grundlegende Einführung*. Bd. 1 bzw. 2. 2. Auflage. Berlin: Springer, 1998.

Eckel, Bruce: *Thinking in Java*. 4th Edition. Prentice Hall, 2006.

Ullmann, Christian: *Java ist auch eine Insel*. 8. Auflage. Galileo Press, 2009.

Further literature and online sources are released during the lectures

F4102 Informatics 3

Content

1. Introduction
2. Internet application

- a) Examples
- b) Functional principles
- c) The HTTP protocol
- d) Server-side programming
- 3. PHP
 - a) Introduction
 - b) HTTP and HTML
 - c) Fundamentals
 - d) Arrays
 - e) Functions
 - f) Form evaluation
 - g) Data manipulation
 - h) Object-oriented programming
- 4. XML
 - a) Shapeliness
 - b) Validity
- 6. Databanks
 - a) Terms
 - b) SQL fundamentals

Admission resp. recommended requirements

Formally: none

As to content: Informatics 1

Types of examinations

Proof of academic achievement in written, oral examinations, part of the module examination, written 90 min

Methods

Seminar-like lessons with practical exercises

Literature

Behrendt, Jens; Zeppenfeld, Klaus:*Web 2.0*. E-Book des Springer Verlags. ISBN 978-3-540-73120-7, e-ISBN 978-3-540-73121-4.

Erlenkötter, Helmut:*XML Extensible Markup Language von Anfang an*.rororo Taschenbuch Computer, 2003. ISBN 3-499-61209-7.

Lerdorf, Rasmus; Tatroe, Kevin:*Programmieren mit PHP*.Deutsche Übersetzung von Peter Klicman. 1. Auflage. Oktober 2002. ISBN 3-89721-177-7.

Moussaoui, Hassan El; Zeppenfeld, Klaus:*AJAX, Geschichte, Technologie, Zukunft*.E-Book des Springer Verlags, ISBN 978-3-540-73112-2, e-ISBN 978-3-540-73115-3.

Online sources

PHP.net

SelfHTML von Stefan Münz, de.selfhtml.org

Module: Principles of Audio Technology

Module number	F-06
Person in charge for the module	Prof. Dr. Gerhard Krump
Study focus	
Course number and course name	F3104 Sound technology practical training F2015 Sound technology
Lecturer	Prof. Dr. Gerhard Krump
Semesters	2, 3
Duration of the module	2 semesters
Frequency of the module	annually
Level	Bachelor
Credit hours	8.0
ECTS	9.0
Workload	Compulsory attendance: 120.0 hours Self-study: 150.0 hours Total: 270.0 hours
Language of instruction	German

Aims of the module

The students should be capable to know, understand and describe technically acoustic and sound-technological fundamentals and terms in order to gain a broad basis for creative sound design involving fundamental features of our auditory perception. Additionally to the creative aspect, students are to gain a basis for engineering and scientific working in profession and practice while they are measuring, describing and analysing complex acoustic problems in order to recognise the connections and to develop solutions. Through this module, students are supposed to be able to work in profession both creatively (audio processing) and engineering-oriented (sound counselling) and also scientific oriented (research).

Sound recording, processing and playback are considered in an overall aspect which includes the signal processing of our hearing. Here, the practical relevance and presentations in the shape of demonstrative audio examples are stressed in particular. The profoundment of theoretic fundamentals in the first part (sound technology) is substantiated practice-oriented in the second part (sound technology practical training) by instructed trials in the areas scoring, effect processing, voice recordings, microphone arrangement, as well as measurement engineering, room acoustics, acoustic irradiation and loudspeaker technology and psychoacoustics. A full-day acoustics seminar gives additionally insight into scientific methods of operations and presentation techniques resp. the procedure of a scientific convention as well as concrete problems and problem solutions in research and industry by which the contact of students with relevant economic

enterprises for industrial placement and Bachelor thesis is created.

On this basis, new products can be tested and judged in an engineering way but they can also be developed and produced and basic research can be operated.

Factual knowledge, conceptual knowledge, procedural knowledge and also metacognitive knowledge are imparted.

During the lectures, sample tasks account directly among the learning material and 4 exercise sheets with practice-oriented tasks are treated which are to be calculated by the students themselves at home and are explained later by the lecturer.

In this module, along with the lecture subject Physics 2, all topics that are required in the minimum canons of the Deutsche Gesellschaft für Akustik (German Acoustics Society)(DEGA) for a Bachelor degree with acoustic qualification are taught.

The following competencies are so to be gained inter alia:

- Knowledge of acoustic and sound technological terms
- Knowledge of signal processing of the hearing
- Knowledge of acoustic measurement and recording procedures and their technical description
- Practice in handling and structure of measurement systems as well as independent implementation and evaluation of standard measurements
- Understanding of acoustic connections and their complex interaction with physical and electric systems (e.g. room acoustics, converter technology)
- Application of appropriate recording, sound processing and sound playback procedures in order to be able to implement application and customer-oriented sound and noise design as well as music productions (e.g. creating acoustic logos, radio spots, advertising spots, band tapes, scoring)
- Analysing and evaluating of acoustic and sound technological problems by applying appropriate measurement procedures and description of technical connections and interactions through formulas, charts and functional diagrams (e.g. noise abatement, sound counselling or sound studio designing)
- Measuring, judging, evaluating and supervising customer and standard guidelines (e.g. noise level limitation during events)
- Development of new acoustic approaches to solutions by technological combination of methods, functions and working methods of different disciplines like mechanics, informatics, electrical engineering and acoustics (e.g. vehicle acoustics)
- Creating hearing trials and therefore a scientific analysis of sound and products (e.g. tone of loudspeaker boxes, TVs, product tests)
- Explaining acoustic phenomena and perceptions by the knowledge about signal processing in the hearing and hence the development of new processing and analysis methods (e.g. test, analysis and development of different Codec procedures like MP3)

Instruction and learning methods

Lectures and seminar-like lessons with sample calculations and numerous hearing demonstrations and experiments, 4 exercise sheets with practice oriented tasks that are to be calculated by the students at home and are discussed during the lectures to profound the learning material calculationally. Practical training in small groups with detailed experiment instructions and supervision by lecturers and assistants.

Full-day acoustics seminar with 6 speakers (45 min presentation + 10 min discussions) from research and industry with subsequent talks with students.

Projectors, boards, overhead projectors, audio and video demos.

Special

Comprehensive script (sound technology) and experiment instructions (practical training) with preparatory questions and questions during the experiment

Written exam (90 min sound technology, 2nd semester) and 8 individual examinations (10 min, 3rd semester) after each of the 8 practical experiments in sound technology.

Literature

- Birkner, Ch.: *Surround*. PPVMedien-Verlag, 2002.
- Conrad, J.-F.: *Lexikon Beschallung*. PPVMedien-Verlag, 2004.
- Cremer, L.; et al.: *Technische Akustik*. Springer-Verlag, 2003.
- D'Appolito: *Lautsprecher-Messtechnik*. Elektor-Verlag, 2005.
- Dickason, V.: *Lautsprecherbau*. Elektor-Verlag, 2005.
- Dickreiter, M.: *Mikrofon-Aufnahmetechnik*. Hirzel-Verlag, 2003.
- Dickreiter, M.: *Handbuch der Tonstudioteknik*. Band 1. Saur-Verlag, 2008.
- Dickreiter, M.: *Handbuch der Tonstudioteknik*. Band 2. Saur-Verlag, 2008.
- Friesecke, A.: *Metering*. PPVMedien-Verlag, 2003.
- Görne, T.: *Tontechnik*. Hanser-Verlag, 2008.
- Görne, T.; et al.: *Monitoring*. PPVMedien-Verlag, 2004.
- Henn, H.; et al.: *Ingenieurakustik*. Vieweg-Verlag, 2008.
- Hömberg, M.: *Recording Basics*. PPVMedien-Verlag, 2003.
- Hömberg, M.: *Taschenlexikon Studio*. Band 1. PPVMedien-Verlag, 2001.
- Hömberg, M.: *Taschenlexikon Studio*. Band 2. PPVMedien-Verlag, 2001.
- Kremer, M.: *Audite!*. CD. Wuppertal: Bergische Universität, 1999.
- Kuttruff, H.: *Akustik*. Hirzel-Verlag, 2004.
- Maute, D.: *Technische Akustik und Lärmschutz*. Hanser-Verlag, 2006.
- Meyer, J.: *Akustik*. PPVMedien-Verlag, 2004.
- Müller, G. et al.: *Taschenbuch der Technischen Akustik*. Springer-Verlag, 2004.
- Pawera, N.: *Mikrofonpraxis*. PPVMedien-Verlag, 2004.
- Raffaseder, H.: *Audiodesign*. Hanser-Verlag, 2010.
- Römer, R.; et al.: *Lautsprecher*. Elektor-Verlag, 1989.
- Schwamkrug, G.: *Lautsprecher-Boxen*. Elektor-Verlag, 1989.
- Strickel, A.: *Faszination Gehör*. PPVMedien-Verlag, 2003.
- Terhardt, E.: *Akustische Kommunikation*. Springer-Verlag, 1998.

Veit, I.: *Technische Akustik*. Vogel-Verlag, 2005.
Zölzer, U.: *Digitale Audiosignalverarbeitung*. Teubner-Verlag, 2005.
Zwicker, E.: *Psychoakustik*. Springer-Verlag, 1982.
Zwicker, E.; Fastl, H.: *Psychoacoustics*. Springer-Verlag, 2010.
Zwicker, E.; Zollner, M.: *Elektroakustik*. Springer-Verlag, 2003.

F3014 Sound technology, practical training

Content

1. Analogue studio technology
Structure and connection of analogue effect devices with mixer console, symmetric/unsymmetric signal routing, routing, modulation, mixer console operation.
2. Digital studio technology
Operation and configuration of audio software, audio formats, audio interfaces, level and dynamics, MIDI, sampling, synthesis.
3. Effect processing
Dynamic, temporal and spectral effect processing, normalising, compressor, limiter, expander, Deesser, filter, echo, reverberation, phasing effects.
4. Pro tools
Recording, editing, binning, mastering, automating, video dubbing.
5. Microphone recordings procedures
Recording with intensity, duration and equivalence stereo methods and listening in reverberant and damped rooms, converter technologies, directional characteristic, microphone arrangements, stereo recording methods, disturbing noises.
6. Room acoustics
Measurement of reverberation time, reverberation radius and room modes of rooms, computation of absorption degrees and measurement of sound insulation of walls and doors with/without acoustical bridge.
7. Loudspeaker measurement technology
Measurement of small and large-signal parameters as well as radiation characteristics in the free field, closed box and bassreflexbox. Simulation of frequency responses, listening to loudspeaker boxes in stereo and surround.
8. Psychoacoustics
Measurement and computation of loudness, raucousness, sharpness of a sound, audio masking, signal analysis and examination, listening test arrangement, experiment implementation and evaluation, measurement of level of threshold in quiet.

Types of examinations

Proof of academic achievement in practical training

Methods

Literature

F2015 Sound technology

Content

1. Acoustic communication
2. Acoustic basic terms: wave propagation, acoustic field parameters, level computation, nomogram, signal display, acoustic noise, distortion
3. Psychoacoustics: stimulus and perception, hearing physiology, auditory field, equivalent continuous sound level, norms, TTS, PTS, curves of the same loudness, A-weighted level, frequency group, spectral and temporal masking, loudness, specific loudness, pitch level, degree of fluctuation, raucousness, sharpness, acoustic colour, spatial perception, HRTF, localisation, phantom sources
4. Acoustic sources: organ of speech, formants, speech intelligibility, music instruments, dynamics, radiation characteristic, loudspeakers, headphones, free field movement
5. Frequency and directional characteristics of converters
6. Microphone recording methods: types of microphones, stereo, intensity stereophony, duration stereophony, equivalence stereophony, artificial head, head tracking, surround recording, microphone arrangement
7. Sound processing: mixer console, equaliser, limiter, compressor, expander, dynamics, effects, noise reduction, sound formats
8. Audio technology: room acoustics, reverberation time, reverberation radius, room design, types of boxes, speaker arrangement, surround sound, acoustic feedback

Types of examinations

Written exam 90 min

Module: Media Technology

Module number F-07
Person in charge for the module Prof. Dr. Gerhard Krump

Study focus

Course number and course name

F3101 Digital Media 1

F4101 Digital Media 2

Lecturer

Prof. Dr. Gerhard Krump

Semesters

3, 4

Duration of the module

2 semesters

Frequency of the module

annually

Type of the course

compulsory subject

Level

Bachelor

Credit hours

8.0

ECTS

10.0

Workload

Compulsory attendance: 120.0 hours

Self-study: 180.0 hours

Total: 300.0 hours

Language of instruction

German

Aims of the module

The students are capable to know, understand and describe mathematically the technical fundamentals of digital signal processing, audio and video processing, transmission and storage so that also complex connections can be analysed and can be further developed in production independently.

The transmission of information through signals which are to be constantly adapted to the transmission channel, is ought to be understood and applied in order to avoid signal errors and signal delays and hence information artifacts in professional practice. Therefore, the module should impart in the study course Media Technology the technical core topics of information transmission in the media, so that the students understand signal processing in studios and signal transmission from the production site to the consumer.

The aim in the subject Digital Media 1 is the imparting of the technical fundamentals of digital media, in particular the signal theory and signal change in the digitalisation process as well as the digital signal processing of audio and video signals. Data compression methods and their characteristics are explained under the aspect of signal processing of our visual and auditory perception. Digital storage technologies eventually give an insight into the way of working and capacity of modern storage media.

The aim in the subject Digital Media 2 is the imparting of the functionality, limits and interaction of digital information transmission media like telephone, radio and TV. At first, the technical fundamentals of the most common transmission channels, their features and possibilities as well as different modulation methods

are treated. On this basis, transmission systems that are based on two-wire lines (telephone, DSL, internet radio) or fibreglass (video signals) or on radio transmission like digital audio broadcasting, digital video broadcasting as well as interactive TV in shape of the multimedia home platform are explained further. During the lecture, sample tasks are calculated directly to the learning material and 4 resp. 5 exercise sheets with practice-oriented tasks are treated which are to be calculated by the students at home first and are to be explained later by the lecturer.

In order to profound the theoretic fundamentals through practical measurements, in each subject a practical experiment is to be successfully passed which is to impart the dealing with the oscilloscope, spectrum analyser and signal generators. For example, one is supposed to measure and document the different signal states in the digitalisation process, to weight the spectrum of a signal with different window functions, to determine the crosstalk of a telephone line, to capture metrologically the amplitude and frequency modulation and to analyse a dvd player in view of its frequency response and its distortion products.

Therefore, the students gain the following competencies:

- Knowledge of the technical terms of analogue and digital signals, the communication engineering and message transmission
- Knowledge and understanding of mathematical computation methods of the system theory and signal transmission in order to measure, compute and illustrate signals independently.
- Understanding of the complete digitalisation procedure with its signal changing features, advantages and disadvantages as well as possible data reduction methods
- Understanding of analogue and digital modulation methods and the channel adaption of electrical and optical signals for the purpose of the fast and flawless information transmission
- Understanding of essential features of common transmission media like DAB, DMT, DVB, satellite and antenna technologies
- Measuring, analysing and computing of signal sources, transmission channels, reception and storage systems as well as computation of disturbing signal influences
- Supervision and test of communication systems and mediatechnical institutions
- Technical structure, development and operation of studio institutions, audio and video processing systems
- Engineering development of new transmission systems, data compression methods and interactive media

Admission resp. recommended requirements

Completion of the subjects Physics and Sound Technology is recommended, corresponding practical experiments DM1 resp. DM2 must be passed at the examination admission and acts as proof of academic achievement.

Instruction and learning methods

Lectures and seminar-like lessons with sample calculations and exercise sheets in order to profound computationally the learning material.

One practical experiment per subject with instruction and guidance in small groups.

Projectors, board, overhead projector, audio and video demos.

Special

Comprehensive script and experiment description

F3101 Digital Media 1

Content

1. Communication model according to Shannon
2. Signal display: signal definitions, time function and spectrums, Fourier-series, Fourier-transformation, time-bandwidth-product, impulse response, convolution, system responses
3. Digitalisation of audio and video signals: digital transmission path, sampling, sampling theorem, oversampling, retention level, quantisation, quantisation error, linear and non-linear conversion, A/D and D/A converter, bit-stream manipulations, dither, noise shaping, super bit mapping, bit-stream methods, direct stream digital, deglitcher, distortion correction, static and dynamic errors
4. Data reduction methods: bit rate, MPEG standards, source coding of audio signals, coding methods for MPEG-2, MPEG-, MUSICAM, loss-free coding, vocoder
5. Source coding of video signals
6. JPEG: blocking, DCT, quantisation, redundancy reduction, transmission modes
7. Coding for MPEG-1: difference coding, prediction, GOP, data rate control, sampling structures
8. Coding for MPEG-2: MP@ML, scalability
9. MPEG-4, MPEG-4 AVC, MPEG-7, further video codecs
10. Digital surround systems: analogue Dolby, digital Dolby, meta dates, Dolby E, MPEG-2 AAC, spectral band replication, binaural cue coding, DTS, THX, 7.1 formats, Sony dynamic digital sound
11. Digital storage media: magnetic storages, harddisk storages, semiconductor storage, optical sotrage, CD, super audio CD, DVD, Blue ray, magneto-optical storage, digital stereo sound tracks

Types of examinations

Part of the module examination, written 90 min

Literature

Butz, Tilman: *Fouriertransformation für Fußgänger*, Wiesbaden: Vieweg +Teubner, 2007

Dickreiter, M.: *Handbuch der Tonstudiotechnik*, Band 1 und 2, Saur-Verlag, 2008

Görne, Th.: *Tontechnik*, Leipzig: Fachbuchverlag, 2008

Götz-Meyn, E.; et al.: *Grundlagen der Video- und Videoaufzeichnungstechnik*, Heidelberg: Hüthig-Verlag, 2007
 Henning, P.A.: *Taschenbuch Multimedia*, Leipzig: Fachbuchverlag, 2003
 Heyna, A.; et al.: *Datenformate im Medienbereich*, Leipzig, Fachbuchverlag, 2003
 Jähne, B.: *Digitale Bildverarbeitung*, Springer-Verlag, 2002
 Mäusl, R.: *Fernsehtechnik*, Hüthig-Verlag, 2006
 Mahler, G.: *Die Grundlagen der Fernstehtchnik*, Springer-Verlag, 2005
 Reimers, U.: *Digitale Fernstehtchnik*, Springer-Verlag, 2007
 Roppel, C.: *Grundlagen der digitalen Kommunikation*, Hanser-Verlag, 2006
 Schmidt, U.: *Digitale Film- und Videotechnik*, Leipzig: Fachbuchverlag, 2002
 Schmidt, U.: *Professionelle Videotechnik*, Springer-Verlag, 2009
 SRT: *Ausbildungshandbuch audiovisuelle Medienberufe*, Band I-III, Heidelberg: Hüthig-Verlag, 2003
 Strutz, T.: *Bilddatenkompression*, Vieweg-Verlag, 2005
 Tietze, U.; et al.: *Halbleiter-Schaltungstechnik*, Springer-Verlag, 2009
 Webers, J.: *Handbuch der Film- und Videotechnik*, Franzis-Verlag, 2007
 Ziemer A., *Digitales Fernsehen*, Hüthig-Verlag, 2003

F4101 Digital Media 2

Content

1. Transmission media: data transmission, channel coding, multiplex methods, crosstalk, twisted pair, koax cable, optical fibre, dispersions
2. ISDN: functionality, service integration, protocols, Euro.ISDN, DSL
3. Modulation methods: analogue methods (AM,FM), digital methods (ASK, QAM, PSK, FSK), multi-carrier procedures (OFDM, COFDM)
4. Digital audio broadcasting: characteristics, transmission technology, simultaneous broadcasting network
5. Digital video broadcasting: development history, MPEG 2 data stream, transponder, protocols, DVB-T, DVB-C, DVB-S, satellite technology, set-top.box, antennas
6. Multimedia home platform
7. Video technology: field transmission, colour picture technology, features and limits of the human visual sense, FBAS and composite signal, colour errors, television standards, digitalisation of composite and component signals, HDTV, image display procedures

Practical experiment for crosstalk, amplitude and frequency modulation, frequency response and distortion factor measurements at DVD players.

Admission resp. recommended requirements

Comprehensive script and experiment description

Types of examinations

Part of the module examination

Methods

Lectures and seminar-like lessons with sample calculations and exercise sheets in order to computationally profound the learning material.

One practical experiment per subject with instruction and guidance in small

groups.

Projectors, board, overhead projectors, audio and video demos.

Literature

Brückner, V.: *Optische Nachrichtentechnik*, Teubner-Verlag, 2003

Götz-Meyn, E.; et al.: *Grundlagen der Video- und Videoaufzeichnungstechnik*, Heidelberg: Hüthig-Verlag, 2007

Gustedt, D.; Wiesner, W.: *Fiberoptik Übertragungstechnik*, Franzis-Verlag, 1998

Hecht, E.: *Optik*, Oldenbourg-Verlag, 2009

Jungk: *Moderne Satellitenempfangsanlagen*, Technik-Verlag, 1998

Klostermeyer, R.: *Digitale Modulation*, Vieweg-Verlag, 2001

Litfin, G.: *Technische Optik in der Praxis*, Springer-Verlag, 2005

Mäusl, R.: *Fernsehetechnik*, Heidelberg: Hüthig-Verlag, 2006

Mäusl, R.; Göbel, J., *Analoge und digitale Modulationsverfahren*, Heidelberg: Hüthig-Verlag, 2002

Mahler, G.: *Die Grundlagen der Fernsehetechnik*, Springer-Verlag, 2005

Meyer, M.: *Kommunikationstechnik*, Vieweg-Verlag, 2002

Pedrotti, F.; et al.: *Optik für Ingenieure*, Springer-Verlag, 2005

Pehl, E.: *Digitale und analoge Nachrichtenübertragung*, Heidelberg: Hüthig-Verlag, 2001

Stadler, E.: *Modulationsverfahren*, Vogel-Verlag, 2000

Wrobel, Ch.: *Optische Übertragungstechnik in der Praxis*, Heidelberg: Hüthig-Verlag, 2004

Ziemer A., *Digitales Fernsehen*, Heidelberg: Hüthig-Verlag, 2003

Zitt, H.: *ISDN & DSL*, Markt & Technik-Verlag, 2004

Module: Principles of Design

Module number: F-08
Person in charge for the module: Günter Reinhardt

Study focus

Course number and course name

F1106 Principles of Design
F2106 Communication Design

Lecturers

Günter Reinhardt
Johannes Schwarz

Semesters

1, 2

Duration of the module

2 semesters

Frequency of the module

annually

Type of the course

compulsory subject

Level

Bachelor

Credit hours

10.0

ECTS

10.0

Workload

Compulsory attendance: 150.0 hours
Self-study: 150.0 hours
Total: 300.0 hours

Language of instruction

German

Aims of the module

The module is to enable the students to develop strategies that are tailored towards defined target groups in order to solve visual communication tasks of increasing complexity and, correspondingly, to implement that in a concrete product.

The following learning goals are achieved by passing this module:

- They know and understand the perception-specific conditions of creative work
- They are capable to apply this knowledge analytically and practically
- The students are able to formulate their ideas independently and to realise them individually or in a team
- They have the necessary basic knowledge and the creative tools at their disposal to realise their concepts

Instruction and learning methods

Lectures, practical exercises, projects, team works

Special

Tutorial desktop publishing (Photoshop, illustrator, InDesign), voluntary subject
Manual Drawing, PLV Creativity Techniques

Literature

Böhringer, Joachim; Bühler, Peter; Schlaich, Patrick: *Kompendium der Mediengestaltung für Digital- und Printmedien*, Springer, 2008

Caplin, Steve: *How to Cheat in Photoshop CS3-The art of creating photorealistic montages*, focal press, 2005

Forssman, Friedrich: *Detailtypografie. Nachschlagewerk für alle Fragen zu Schrift und Satz*, Schmidt, 2004

Heller, Eva: *Wie Farben wirken*, Rowohlt, 2004

Krisztian, Gregor: *Ideen visualisieren, Scribble - Layout - Storyboard*, Verlag Schmidt, 2004

Pricken, Mario: *Kribbeln im Kopf. Kreativitätstechniken und Brain-Tools für Werbung und Design*, Verlag Schmidt, 2004

Spiekermann, Erik: *ÜberSchrift*, Schmidt, 2004

F1106 Principles of Design

Content

1. Fundamentals
 - a) Art as source
 - b) Visual perception and aesthetics
 - c) Object perception/gestalt laws
 - d) Colour perception/colour mixing system
 - e) General aesthetics
 - f) Chromatics
- 2. Fundamentals of digitalisation**
 - a) Colour models
 - b) Bits and bytes
 - c) Image resolution and image size
 - d) Moiré
 - e) Graphics formats/ file formats
- 3. Fundamentals of printing**
 - a) Printing methods
 - b) Printing technology
 - c) Halftone, solid tone, grids
 - d) AM and FM screens
 - e) Colour separation
 - f) DIN formats and paper
- 4. Fundamentals of typography**
 - a) The type – from medium to message
 - b) Typography – the basic terms
 - c) Font technologies
- 5. Analysis**
 - a) Image samples from art and advertisement
 - b) Analysis of students' working

6. Practical exercises

- a) The point as design element
- b) The line as design element
- c) Colour mixing, tertiary colours, harmony of colours
- d) Colour contrasts, colour effect
- e) Harmony of colours, colour tones
- f) Text as creative mean
- g) Practical exercise composition and layout, text layout

Admission resp. recommended requirements

None

Types of examinations

Practical proof of academic achievement, final grade forming examination seminar paper, written exam 90 min

Methods

Lectures, practical exercises, projects, team works

F2106 Communication design

Content

- 1. Rhetoric of the design
 - a) Design as communication
 - b) Reading typography
 - c) Expressive typography
 - d) Typography and layout
 - e) The picture
 - f) The graphical design
 - g) Design grids
 - h) Picture and text together
- 2. Pre-press
 - a) Colour management
 - b) PDF workflow
- 3. Practical exercises – drawing and illustration/ the generated map
 - a) Contrasts
 - b) Lights and darks
 - c) The linear perspective
 - d) Satin, transparency, structure
 - e) Still life
 - f) Figurative
 - g) Complex setting/storyboard
- 4. Practical exercises – creating a photographic archive with different picture themes
 - a) Shape
 - b) Colour
 - c) Structure
 - d) Architecture

e) Movement

Types of examinations

Practical proof of academic achievement, part of the module examination

Module: Applied Graphic Design

Module number	F-09
Person in charge for the module	Günter Reinhardt
Study focus	
Course number and course name	F3106 Photography F4101 Media Design 1
Lecturers	Prof. Joerg Maxzin Günter Reinhardt Johannes Schwarz
Semesters	3, 4
Duration of the module	2 semesters
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	6.0
ECTS	7.0
Workload	

Compulsory attendance: 90.0 hours

Self-study: 120.0 hours

Total: 210.0 hours

Language of instruction German

Aims of the module

The students have basic knowledge in dealing with photo-technical devices, like photo cameras, photographic lenses and lighting at their disposal.

Furthermore, they are confident in applying techniques of digital photography when taking pictures and when processing pictures in the context of today's computer-based workflows.

The students are capable to look at structural and contentual requirements and tasks analytically and to implement them in design and layout solutions.

They possess the technical competence to apply modern software systems, like e.g. Content Management Systems, and to consider in the interface design current requirements subject to userfriendliness and accessibility.

Admission resp. recommended requirements

Fundamentals of design

Fundamentals of web programming

Special

Both lectures are additionally supported by the iLearn platform.

Literature

Barr, G.: *Besser fotografieren*, 2. Auflage, Heidelberg: dpunkt.-Verlag, 2010

Gulbins, J.:*Die Kunst der RAW-Konvertierung*, 2. Auflage, Heidelberg: dpunkt.-Verlag, 2006

Heinsen, Sven; Vogt, Petra Vogt:*Usability praktisch umsetzen*, Hanser, 2003

Hellbusch, Jan Eric:*Barrierefreies Webdesign*, dpunkt verlag, 2004

Hirsch, R.:*Mit der Kamera sehen*, 1. Auflage, Spektrum, Heidelberg: Akad. Verlag, 2008

Janus, E. (Hrsg.):*Die Rache der Veronika*, 1. Auflage, Zürich: Scalo Verlag, 1998

Kürten, O.:*Das Profi-Handbuch zur Nikon D50*, 1. Auflage, Düsseldorf: Data-Becker, 2005

Merz, R.:*Licht und Belichtung in der Fotografie*, 2. Auflage, Heidelberg: dpunkt.-Verlag, 2009

Münz, Stefan:*Professionelle Websites - Programmierung, Design und Administration von Webseiten*, Addison-Wesley, 2006 (oder kostenfreier Download als PDF)

Puscher, Frank:*Leitfaden Web-Usability - Werkzeuge und Tipps für mehr Benutzerfreundlichkeit*, dpunkt verlag, 2009

Seimert, W.:*Das Einsteigerseminar Adobe Photoshop CS3*, 1. Auflage, bhv, Heidelberg: REDLINE, 2007

Stapelkamp, Torsten:*Screen- und Interfacedesign - Gestaltung und Usability für Hard- und Software*, Verlag Springer, 2007

F3106 Photography

Content

1. Historic Photography
 - a) Precursor of photography
 - b) Development of photography
2. Contemporary photography
 - a) Photo journalism
 - b) Advertising photography
 - c) Artistic photography
3. The possibilities of the camera
 - a) Fundamentals photo optics
 - b) Introduction reflex camera
4. Lights and darks
 - a) Principle light recording
 - b) Light effect in the image
5. Lighting
 - a) Studio lighting
 - b) Light on location
6. Composition and image structure
 - a) General composition rules
 - b) Photographic room
7. Storyboarding for photography
 - a) Picture language

- b) Photo series
- 8. Digital picture processing
 - a) Fundamentals of post-processing
 - b) Digital image file formats
- 9. Black-and-white photography
 - a) Black-and-white historically
 - b) Black-and-white digitally
- 10. Focussed vs. out of focus
 - a) Image effect
 - b) Phototechnical implementation
- 11. Good pictures under adverse conditions
 - a) Analysis of frequent photographic problems
 - b) Solutions

Admission resp. recommended requirements

Fundamentals of design

Fundamentals of web programming

Types of examinations

Proof of academic achievement seminar paper

Methods

Lectures, practical exercises in the studio and on location, exhibition visit.

Subsequent presentation of the semester results.

F4104 Media Design 1

Content

- 1. Site design
 - a) Usability
 - b) Accessibility
 - c) Concepts and strategies of webdesign
- 2. Page design
 - a) Screen typography
 - b) Design grids
 - c) Cascading style sheets
- 3. Content management systems
 - a) Installation
 - b) Templates
 - c) Modules
- 4. Project work
 - a) Briefing
 - b) Pitch presentation/information market
 - c) Final presentation

Types of examinations

Proof of academic achievement seminar paper

Module: Multimedia Applications

Module number F-10
Person in charge for the module Prof. Joerg Maxzin
Study focus
Course number and course name

Lecturers F2014 Multimedia Applications
Gerhard Brändlein
Prof. Joerg Maxzin

Semester 2

Duration of the module 1 semester

Frequency of the module annually

Type of the course compulsory subject

Level Bachelor

Credit hours 4.0

ECTS 4.0

Workload

Compulsory attendance: 60.0 hours

Self-study: 60.0 hours

Total: 120.0 hours

Language of instruction German

Aims of the module

The students have gained an overview about the development of multimedia applications from their historic beginning until today's complex application systems. Additionally, they have gained important general fundamentals of animation.

During own practical exercises, students have independently managed tasks of the area of time-based media in all states of production, from the draft to the elaboration to the post-processing and the final issue.

The students have practiced during the practical work with multimedia applications interdisciplinary working and have additionally gained the ability to work in a team and social competences through the work in groups.

Admission resp. recommended requirements

None

Content

1. Introduction into multimedia applications
 - a) The term multimedia
 - b) History of development
 - c) Application examples
2. History of the moving picture
 - a) The origin of the film
 - b) The origin of the cartoon animation

- c) Colours and sound in films
- 3. Working with time-based media
 - a) Introduction into time-based 2D software
 - b) Practical exercises in 2D software
- 4. Introduction into the stop motion technique
 - a) Finding ideas
 - b) Storyboarding for animation
 - c) Creating animatics
- 5. Designing protagonists
 - a) Inner design – character
 - b) Outer design – appearance
- 6. Designing in rooms
 - a) Design of stages and environments
 - b) Fundamentals of lighting
- 7. Fundamentals of animation
 - a) Dramaturgy for animation
 - b) Principles of animation
- 8. Camera and movement
 - a) Timing and spacing of the animation
 - b) Fundamentals of the recording technique
- 9. Introduction into post-processing
 - a) Introduction into compositing software
 - b) Practical exercises compositing software
- 10. Practice-related application of post-processing
 - a) Working with single frame sequences
 - b) Scoring
 - c) Issuing animation as film

Instruction and learning methods

Lectures with tutorials. Group work. Final presentation of the semester results.

Special

Support by the online iLearn platform.

Link list for basic and further multimedia topics in the iLearn platform.

Exhibition visits.

Literature

Hiltunen, A.: *Aristoteles in Hollywood*, 1. Auflage, Bergisch Gladbach, Bastei Lübbe, 2001

Johnston, O.; Thomas, F.: *The Illusion of Life: Disney Animation*, 1. Auflage, New York, Hyperion, 1995

Kersken, S.: *Praxiswissen Flash CS3*, 1. Auflage, , Beijing, O'Reilly, 2007

Meyer, T.: *After Effects für Einsteiger*, 1. Auflage, Heidelberg, Spektrum Akad. Verlag, 2008

Muybridge, E.: *The Human Figure in Motion*, New York: Dover Publications, 1955
- Original von 1880

Shaw, S.: *Stop Motion - Craft Skills for Model Animation*, 1. Auflage, Amsterdam: Elsevier, 2008

Williams, R.: *The Animator's Survival Kit*, 1. Auflage, London: Faber and Faber, 2001

F2014 Multimedia Applications

Types of examinations

Written proof of academic achievement, final grade forming examination seminar paper

Module: Principles of Film/Video Design

Module number	F-11
Person in charge for the module	Prof. Ernst Jürgens
Study focus	
Course number and course name	F2107 Film/Video Design 1 F1105 Camera and Editing Technique
Lecturers	Gabriele Aigner Prof. Ernst Jürgens
Semesters	1, 2
Duration of the module	2 semesters
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	6.0
ECTS	6.0
Workload	Compulsory attendance: 90.0 hours Self-study: 90.0 hours Total: 180.0 hours
Language of instruction	German

Aims of the module

The students know the camera and editing technical principles of film/video design and learn to apply those creatively. Here, the development of the ability to work in a team and of media analytical methods are important.

The students know the technical-reactional design possibilities of television coverage and are able to apply them. Here, the development of the ability to work in a team and the media-critical-analytical methods/awareness is important.

Learning results:

Knowledge (factual knowledge and international knowledge):

Knowledge of camera-technical preconditions

Listing picture-compositional and film-aesthetic regularities

Recognising and identifying different visualising strategies using the example of the work of famous cameramen

Knowledge of editing-technical preconditions

Listing picture-compositional and film-aesthetic regularities under special consideration of the film editing/montage

Recognising and identifying different visualising strategies using the example of the work of famous editing sequences

Listing the essential design aspects of a script

Listing the design features of diverse film genres

Identifying the film-aesthetic differences of film and video editing

Knowledge of the basic prerequisites of film sound and final sound processing
(voice recording, compositing)

Basic knowledge of filmgraphics (title, lower thirds)

Knowledge of international jargon

Recognising and identifying different TV-journalistic TV formats using the jargon

Listing diverse design features (e.g. of tv magazines)

Explaining the editorial-conditioned content and design features
(editorial focuses: economy, culture, sports, etc.)

Listing the TV formats and identifying their main design features
(documentation, feature, reportage, magazine contribution, message)

Understand (conceptual knowledge):

Understand the necessity of the collaboration between camera and editing

Classifying film genres and explaining the film-historic backgrounds
(sound, colour, digital, 3D)

Summarizing presentation of current techniques of feature film presentation

Discussing the meaning/effect of individual visualising means of design

Understanding the necessity of the collaboration between the editorial team and
production

Classifying of old and new TV formats and explaining the differences of public
and private broadcasting organisations

Summarizing presentation of current editorial focuses and report formats

Discussing the information relevance of individual formats

Deriving and prediction of possible multimedia perspectives and their discussion

Applications (procedure-oriented knowledge):

Implementation of the knowledge (script, shooting, editing) of the production of
a thematically determined short film

Implementation of the production of the contributions (research, exposé,
shooting, editing, sound finishing, approval) for the youth magazine

“Tiefenrausch” (rapture of the deep) which is answered for by the students and
emitted by the private local station “DonauTV”

Discussion of other presentation formats (Event, DJ/VJ)

Implementation of TV-journalistic working methods using the example of
magazine contributions

Production of the contributions (research, exposé, shooting, editing, sound
finishing, approval) for the youth magazine “Tiefenrausch” that is answered for
by the students and emitted by the private local station “DonauTV”

Analysing (procedure-oriented knowledge):

Analysis of classic movies subject to a methodologically proven procedure

Analysis of TV-historic formats and their characterisation in view of socio-cultural
particularities and media-ethic claims

Recognising connections between contemporary and economic production
conditions (technics)

Evaluating (metacognitive knowledge):

Evaluating and discussing film-aesthetic meaning (aesthetically and ethically) of individual movies

Evaluating of the informative and overriding added value of individual emissions (e.g. advisors series)

Testing of the journalistic value of own contributions together with the editorial team of the transmitting station (e.g. DonauTV)

Media-ethic aspects of the TV journalism using the example TV magazine

Synthesising (procedure-oriented knowledge):

Creating own short films

Experimenting with artistic camera and editing-technical possibilities under consideration of film-historic submittals

Creating own TV formats (e.g. BörsenTV) in collaboration with TV editorial teams

Instruction and learning methods

The methodological alignment is a mixture of methods of:

Lectures (seminar-like lessons), in particular with the imparting of historic themes and basic positions of media ethics and media aesthetics

Group work (research, shooting and editing/post-production, presentation)

Student presentations (program analyses)

Excursions (to TV stations)

Generally, the method as theory-based project work is to be outlined, at which the project (semester's final conclusion) is central.

Lectures, outdoor exercises, projects and their presentation, group work

Special

Excursions, guest lectures (discussions), all contributions are broadcasted in the student/scene magazine "Tiefenrausch" at DonauTV

When forming the final grades, the quality of the semester's final conclusion accounts for about $\frac{3}{4}$

A continuous performance control is ensured by the quality of oral contributions, the quality of students' presentation, the viewing material after the shootings and the quality of the rough cut of the movie. During these working phases, an evaluation of individual performances of the group participants is possible.

Literature

Buchholz, Axel; Schult, Gerhard (Hrsg.): *Fernseh-Journalismus - Ein Handbuch für Ausbildung und Praxis*, 7., aktualis. Aufl., 2006

Fries, Christian: *Mediengestaltung*, München: Hanser Verlag, 2002

Marciniak, Carl: *Fernsehjournalismus - Praxiswissen für Einsteiger. Gestaltung, Aufnahme, Schnitt und Moderation*, 2007

Ordolff, Martin: *Fernsehjournalismus*, Konstanz, 2005

Reil, Andreas A.: *Videofilme - professionell gemacht*, 2. aktualisierte und überarbeitete Auflage, Heidelberg: mediabook verlag, 2008

Renner, Karl N.: *Fernsehjournalismus. Entwurf einer Theorie des kommunikativen Handelns*. Konstanz, 2007

Schleicher, Harald; Urban, Alexander (Hrsg.): *Filmemachen im digitalen Zeitalter. Technik - Gestaltung - Kunst. Klassisch und digital*. Frankfurt a. M.: Zweitausendeins, 2005

Witzke, Bodo; Rothaus, Ulli: *Die Fernsehreportage*, 2., überarb. Aufl., 2010

F2107 Film/Video Design 1

Content

1. The German television

- a) Public and private programme suppliers
- b) Historic development (with broadcast examples from the TV history)
- c) International relations by comparison

2. TV formats

- a) Documentation and reportage (based on examples)
- b) Journalistic design standards
- c) TV-aesthetic basic positions conflicting
- d) Magazine contributions
- e) Broadcaster-related market analyses

3. Research

- a) Meaning of research work on an international comparison
- b) Techniques of research work (Internet, telephone, conversation)
- c) Aids of research (sources, archives, reference books)
- d) Solving a research task
- e) Research as preparation for the shooting

4. Story development and exposé

- a) Telling a story – dramaturgic starting point of the story development (with exercises)
- b) Story development from newspaper reports
- c) Dramaturgic necessities (arc of suspense)
- d) Story development from results of own research (exposé)
- e) Analysis of examples from TV magazines
- f) Balancing the own story with the editorial team (e.g. DonauTV)

5. The interview

- a) Preparation
- b) Questioning techniques

6. Film lighting

- a) Three-point light
- b) Using available light sources

7. Shooting

- a) Production schedule and permission to shoot, insurances (liability, material etc.)

- b) the right in one own's image and the journalistic duty to inform (discussion with current examples)
- c) Shooting 1 (teams shoot their story)
- d) Shooting 2
- e) Viewing material and discussion
- f) further viewing material and discussion

8. Editing/Post-production

- a) Discarding
- b) Interview cutbacks
- c) First text version (comment)
- d) Rough cut (second text version)
- e) Acceptance and final discussion
- f) Voice recording comment
- g) Final sound mixing
- f) Graphic processing (e.g. lower thirds)

9. Presentation

- a) e.g. broadcasting with DonauTV
- b) Editorial closing meeting (prn. with an external critic)

Admission resp. recommended requirements

The participant needs to have a lived interest in TV reports and to have a considerable amount of curiosity and creative drive at his or her disposal.

He/she needs to have successfully participated in the module Camera and Editing Techniques.

For the preparation for the module it is recommended to have a close look at, for example, TV magazines; this preparatory research needs to be related to all broadcasting types and air times.

Journalistic curiosity and creative will

Types of examinations

Final grade forming examination seminar paper, part of the module examination, oral proof of academic achievement

F1105 Camera and Editing Techniques

Content

1. Film language

- a) Speaking with images recorded in the film
- b) Design of images recorded in the film (image structure and comparison with examples from visual arts)
- c) Internationality of the language of negative images

2. Camera work

- a) Technical introduction
- b) Visualising regularities of camera work – in movies and TV-journalistic reportages
- c) Profoundment of terms
- d) Analysis of camera work of historic classic movies

e) Independent introductory exercises

Admission resp. recommended requirements

The participant needs to have a lived interest in TV, movies and film design.

It is recommended to know important movies and to consistently watch movies.

Types of examinations

Part of the module examination

Module: Applied Film/Video Design

Module number F-12
Person in charge for the module Prof. Ernst Jürgens

Study focus

Course number and course name

F3107 Film/Video Design

F4105 Film/Video Design

Lecturer Prof. Ernst Jürgens

Semesters 3, 4

Duration of the module 2 semesters

Frequency of the module annually

Type of the cours compulsory subject

Credit hours 10.0

ECTS 11.0

Workload

Compulsory attendance: 120.0 hours

Self-study: 210.0 hours

Total: 330.0 hours

Language of instruction German

F3107 Film/Video Design 2

Types of examinations

F4105 Film/Video Design 3

Types of examinations

Module: Economics

Module number	F-13
Person in charge for the module	Prof. Dr. Goetz Winterfeldt
Study focus	
Course number and course name	F1107 Business Administration F7101 Media Marketing F4106 Project Management
Lecturer	Prof. Dr. Goetz Winterfeldt
Semesters	1, 4, 7
Duration of the module	7 semesters
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	6.0
ECTS	7.0
Workload	Compulsory attendance: 90.0 hours Self-study: 120.0 hours Total: 210.0 hours
Language of instruction	German

Aims of the module

The module introduces into economic topics. The focus of the lectures Business Administration are the financial mathematical fundamentals for Business Administration. Examples that accompany the lectures are from the area media economy.

After having passed this module, the graduates will have reached the following learning aims:

1. They know the structure of balance sheet and profit and loss statement. They are able to distinguish between items of the profit and loss statement (turnover, costs) and cash accounting (cash, investments)
2. They are able to align accounts to the profit and loss statement and balance sheet and know what a chart of accounts is
3. They know how to open a balance sheet, they are capable to do simple accounting transactions and to close p/l statement and balance sheet
4. Based on the principles of accounting, they are able to analyse balance sheets of companies and identify important key figures
5. They know formulas for the computation of interests, present value, final value, recovery factor and reclamation factors
6. They are able to apply their knowledge when evaluating investments and computing simple credits
7. They are able to evaluate the effect of measures of the investment and the financing in view of the balance sheet and p/l statement

In Project Management, the students get to know the basic terminology of Project Management (PMI) and learn to apply methods for the evaluation of projects. They gain practical knowledge in dealing with projects and learn to control projects. Additionally, necessary documents that could be relevant when implementing projects in the media landscape, are presented and students learn how to adjust those for their project. The module takes place together with the module Design.

After having successfully passed this module, graduates will have reached the following learning aims:

1. Understand the principles of Project Management in media technology
2. Be able to know and prepare essential documents in the project (cover letter, costs projection, GTC, pitch presentation, offer, invoice, invoice letter, protocol)
3. To know essential phases in a project
4. To know and perceive tasks of a project manager
5. To understand and be able to apply methods and tools of Project Management
6. To be able to plan costs in a project and supervise project progresses
7. To professionally close projects
8. To formulate aims of the project and present project results

In Media Marketing, students learn the essential terms from the area Marketing in order to better communicate later with business economists and graduates of other study courses. They learn typical procedures for the assessment of markets and how to apply the strategic planning. Furthermore, they get introduced to essential areas of operative marketing and learn, using examples, how to plan, implement and assess projects in the area marketing.

After having successfully passed this module, graduates will have reached the following learning aims:

1. They understand marketing as method of market-oriented company management
2. They know essential terms to describe markets, like market volume, market saturation, market growth and are able to use these terms
3. They know how to investigate strategically a company for its position in the market (Porter, Ansoff, BCG)
4. They know to apply mathematic methods to problems of marketing in order to describe how a company is situated in the market and which options it possesses.
5. They know four large areas of operative marketing: product, price, promotion (communication) and placement (distribution).
6. They are able to define operative aims, identify measures to reach goals, to discuss and analyse measurement methods whether measures have led to the desired result, in all areas

Instruction and learning methods

Lectures with exercises

F1107 Business Administration

Content

1. Accounting
 - a) Balance sheet and profit and loss statement
 - b) Accounts and chart for accounts
 - c) Accounts
 - d) Opening and closing accounts
 - e) Accounting transactions
 - f) Special business transactions
2. Financial mathematical fundamentals
 - a) Interest calculation
 - b) Pension calculation
3. Investment
 - a) Static investment models
 - b) Dynamic investment models
4. Financing
 - a) Debt capital financing
 - b) Owner's equity financing
5. Summary

Admission resp. recommended requirements

None

Types of examinations

Written exam 90 min, part of the module examination

Methods

Lectures with exercises

Literature

Schierenbeck: *Grundzüge der BWL*, ISBN 3-486-27322-1

Wöhe: *Einführung in die BWL*, ISBN 3-8006-2865-1

F7101 Media Marketing

Content

1. Introduction
 - a) Areas of Marketing
 - b) Basic terms of Marketing
2. Strategic Marketing
 - a) Company aims
 - b) Assessment of aims
 - c) Methods of the structured description of the company position
 - d) Porter
 - e) Ansoff
 - f) SWOT analysis

- g) Stars and cows
- 3. Operative Marketing
- a) Mathematic fundamentals
- b) Information collection
- c) Product
- d) Lifecycle
- e) Innovation
- f) Product strategy
- g) Elimination
- h) Price
- i) Price over costs
- j) Product use
- k) Customer feelings
- l) Competition
- m) Communication
- n) Communication strategy
- o) Media mix
- p) Media planning
- q) Types of advertisements
- r) Distribution
- s) Partner strategies
- t) Logistics

Admission resp. recommended requirements

None

Types of examinations

Part of the module examination

Methods

Lectures with exercises

Literature

Meffert:*Arbeitsbuch Marketing*, Gabler Verlag, 2003, ISBN 3409990860.

Meffert:*Marketing*, Gabler Verlag, 2005.

Nischlag:*Marketing*, Berlin: Duncker&Humbolt Verlag , ISBN 20023-428-10930-9.

F4106 Project Management

Content

1. Project Management
 - a) Basic terms of Project Management
 - b) Project leader
 - c) Stakeholder
 - d) Phases in a project
2. Initialisation

- a) Aims of a project
 - b) Request for proposal
 - c) Project calculation
 - d) Pitch presentation
 - e) Offer
 - f) General terms and conditions
3. Planning
- a) Roadmapping
 - b) Cost estimation
 - c) Resource planning
 - d) Network plan
4. Implementation and supervision
- a) Milestone supervision
 - b) Cost supervision
 - c) Earned Value analysis
5. Conclusion
- a) Final presentation
 - b) Invoicing

Admission resp. recommended requirements

None

Types of examinations

Part of the module examination

Methods

Lectures with exercises

Literature

A Guide to the Project Management Body of Knowledge(PMBOK® Guide), Fourth Edition, 2008, ISBN 9781933890517.

Schelle: Projekte zum Erfolg führen, Beck Wirtschaftsberater DTV, 2004, ISBN 3-423-05888-9

Module: Journalism

Module number	F-14
Person in charge for the module	Dr. Martin Balle
Study focus	
Course number and course name	F3105 Journalism 1 F5102 Journalism 2
Lecturer	Dr. Martin Balle
Semesters	3, 5
Duration of the module	3 semesters
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	4.0
ECTS	4.0
Workload	Compulsory attendance: 60.0 hours Self-study: 60.0 hours Total: 120.0 hours
Language of instruction	German

Aims of the module

The basic presentation forms in journalism are learnt:

Dispatch, reportage and commentary; also, the fundamental media-ethic questions in journalism as well as communication-scientific attempts to describe media, politics and society.

Media-theoretic knowledge concerning newspaper journalism in Germany. Which newspapers serve which target groups? Which newspapers are reputable, which are not? What parameters for the evaluation of integrity do exist? The seminar is an absolute theoretical seminar.

Admission resp. recommended requirements

None

Content

1. Presentation forms in journalism
2. Discussion of media-ethic questions
3. Examination of the essential print products for Germany Frankfurter Allgemeine Zeitung, Süddeutsche Zeitung, Die Welt, Die Zeit, Stern, Focus und Spiegel, but also Bild and Abendzeitung. Marginally, also less known print products like Neon or GEO are discussed. At the end of the semester, a five-day excursion to Straßburg or Brussels takes place where the relation of media and European politics is discussed.

Instruction and learning methods

Lectures

Special

Journalism 1: Excursion to Straubinger Tagblatt

Journalism 2: Excursion to Straßburg or Brussels. For those who are interested, additional internship places with Straubinger Tagblatt/Landshuter Zeitung are offered.

F3105 Journalism 1

Types of examinations

Final grade forming examination seminar paper, part of the module examination

F5102 Journalism 2

Types of examinations

Part of the module examination

Module: Modelling

Module number	F-15
Person in charge for the module	Prof. Joerg Maxzin
Study focus	
Course number and course name	F4103 3D Modelling
Lecturers	Gerhard Brändlein Prof. Joerg Maxzin
Semester	4
Duration of the module	1 semester
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	4.0
ECTS	4.0
Workload	Compulsory attendance: 60.0 hours Self-study: 120.0 hours Total: 180.0 hours
Language of instruction	German

Aims of the module

The students have learnt to confidently apply various methods of 3D modelling in a 3D software. Furthermore, they are capable to differently describe surfaces of 3D geometries and to compute images of produced 3D scenes.

The students are able to simulate lights and darks situations in the virtuality and to capture 3D scenes with virtual cameras. Additionally, they have general and 3D-specific basic knowledge of animation at their disposal. The students are able to create and post-process own, sound-added, 3D animation sequences.

Admission resp. recommended requirements

Fundamentals of Design and Photography

Content

1. Introduction into the term 3D
 - a) General introduction to the virtual 3D space
 - b) Overview about 3D operations
 - c) Specific introduction into 3D software user surfaces
2. Modelling – Fundamentals 1
 - a) Creating parametric base bodies
 - b) Modifying parametric base bodies
3. Modelling – Fundamentals 2
 - a) Creating line-based geometries

- b) Modifying line-based geometries
- 4. Modelling – Fundamentals 3
 - a) Creating editable polygon bodies
 - b) Modifying editable polygon bodies
- 5. Rendering – computing images
 - a) General overview about the computation of virtual images
 - b) Specific introduction into rendering in 3D software
- 6. Surface rendering
 - a) Procedural materials
 - b) Mapping methods
- 7. Surface processing and texturing
 - a) Processing and editing UVW coordinates
 - b) Generating image-based textures and masks
- 8. Virtual cameras
 - a) Generating 3D cameras
 - b) Animating 3D cameras
- 9. Lights and darks
 - a) Fundamentals of virtual lighting
 - b) Generating 3D lighting
- 10. 3D controllers
 - a) Introduction into edition curves
 - b) Applying different controller types
- 11. Tone and 3D
 - a) Scoring 3D sequences
 - b) Animating by tone
- 12. Principles of animation
 - a) General principles of animation
 - b) Specific principles of 3D animation
- 13. 3D animation
 - a) Key-image-based animations
 - b) Automised animations
- 14. Digital post-processing
 - a) Post-processing of 3D renderings
 - b) Issuing digital moving-image sequences

Instruction and learning methods

Lectures, practical exercises in the 3D laboratory. Final presentation of the semester results.

Special

Support by the online iLearn platform.

Link list for 3D themes on the iLearn platform.

Excursions to specialist conferences.

Literature

Brinkmann, R.: *The Art and Science of Digital Compositing*, 1. Auflage, Amsterdam: Elsevier, 2008.

Derakhshani, D.: *Introducing 3ds Max 9*, 1. Auflage, Indianapolis: Wiley, 2007.

Digital Tutors: *Introduction to Lighting in 3ds Max (DVD)*, Oklahoma City: Digital Tutors, 2008.

Digital Tutors: *Introduction to mental ray in 3ds Max (DVD)*, Oklahoma City: Digital Tutors, 2008.

Jones, A.: *Thinking Animation*, 1. Auflage, Boston: Thomson Course Technology, 2008.

F4103 3D Modelling

Types of examinations

Proof of academic achievement seminar paper, final grade forming examination seminar paper

Module: Media Analysis

Module number	F-16
Person in charge of the module	Prof. Dr. Peter Firsching
Study focus	
Course number and course name	F5101 Media Analysis
Lecturer	Prof. Dr. Peter Firsching
Semester	5
Duration of the module	1 semester
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	4.0
ECTS	5.0
Workload	Compulsory attendance: 60.0 hours Self-study: 90.0 hours Total: 150.0 hours
Language of instruction	German

Aims of the module

Working out method competence in the area of descriptive statistics.

Working out application competence for case examples in the area media.

Expansion of the method competence to general probability calculation and inductive statistics.

Admission resp. recommended requirements

Mathematical basic knowledge recommended

Content

1. Descriptive statistics
 - a) Basic terms
 - b) One-dimensional frequency distributions
 - c) Cumulative frequencies
 - d) Distribution functions
 - e) Location parameters
 - f) Control parameters
 - g) Two-dimensional frequency distributions
 - h) Correlation calculation
 - i) Regression calculation
2. Probability calculation
 - a) Fundamentals of combinatorics
 - b) Coincidence and incident algebra

- c) Probability/Laplace theory
 - d) Independent incidents and conditional probability
 - e) Coincident variable and probability distributions
 - f) Expected value and variance of a distribution
 - g) Distributions
3. Inferential statistics
- a) Estimation theory
 - b) Confidence intervals for parameter estimation
 - c) Hypothesis tests
 - d) Parametric tests
 - e) Non-parametric test

Instruction and learning methods

Seminar-like lessons, exercises

Special

Contributions of external specialists are included in the course.

Literature

Bol, G.: *Deskriptive Statistik*, 6. Auflage, Oldenbourg Verlag, 2004.

Sachs, M.: *Wahrscheinlichkeitsrechnung und Statistik*. Leipzig, Fachbuchverlag, 2003.

Granados, G.: *Lehrbuch der praktischen Statistik*, Oldenbourg Verlag, 2004.

Radke, H.D.: *Statistik mit Excel*, Ebook, Verlag Markt & Technik.

F5101 Media Analysis

Types of examinations

Written exam 90 min

Module: Media Law

Module number F-17
Person in charge for the module Prof. Dr. Josef Scherer
Study focus
Course number and course name

Lecturers F7102 Media Law
Johann Maier
Prof. Dr. Josef Scherer

Semester 7
Duration of the module 1 semester
Frequency of the module annually
Type of the course compulsory subject
Level Bachelor
Credit hours 2.0
ECTS 3.0
Workload

Compulsory attendance: 23.0 hours
Self-study: 67.0 hours
Total: 90.0 hours
German

Language of instruction

Aims of the module

The participants are to gain basic knowledge in the area contract management and are to be capable to supply an operational, organisatory solution to practice-relevant problems of these areas, if they are standard problems p.r.n. in the shape of procedural instructions. Furthermore, after having passed this module, students are expected to be able to explain understandably the contents in their own words.

The participant is to gain basic knowledge in the area media and are to be capable to supply an operational, organisatory solution to practice-relevant problems of these areas, if they are standard problems p.r.n. in the shape of procedural instructions. Furthermore, after having passed this module, students are expected to be able to explain understandably the contents in their own words.

Admission resp. recommended requirements

BR-Alpha scripts, Serie Wirtschaftsrecht,
Episode 1, 2, 3, 4, 10, 11

Content

Part of Prof. Dr. Josef Scherer:

1. Contract management
 - a) Contract relations of the company
 - b) General information to contract management
 - c) Principles of formal contract design (general terms and conditions)

- d) Design of form contracts in detail
- e) Quality assurance agreements
- f) Claim securing in a contract
- g) Contract dissolution
- h) Turnover controlling
- i) Record keeping
- j) Risk management and contract management
- k) EDV application and software solutions in the area contract management
- l) Negotiation techniques

Part of lecturer Johann Maier:

1. Overview about the problem areas of media law
 - a) Sources of law
 - b) Copyright law
 - c) Personality and data protection law
 - d) Right in one's own picture
 - e) Brand law
 - f) Competition law
 - g) Advertising law
 - h) Right of publishing
 - i) Teleservices law
 - j) Using foreign multimedia elements
 - k) Protection subject
 - l) Protection object
 - m) Point in time
 - n) Determined types of work
 - o) Scope of protection of copyright
 - p) Personality rights
 - q) Appropriate remuneration
 - r) Catalogue of exploitation and usage law
 - s) Types of usage
2. To which extent and by whom can rights be acquired?
 - a) Principles of transfer of rights
 - b) Simple and exclusive rights of use
 - c) Limitation of rights of use
 - d) Construction of contracts
 - e) no acquisition of rights of use in good faith
 - f) Contracts about future works
3. Where can rights be acquired?
 - a) Preliminary note
 - b) Commercial rights holders
 - c) Collecting societies

4. International media law

Instruction and learning methods

Seminar-like lessons, exercises, excursions, presentations

Special

The course contains online shares, BR-Alpha course Wirtschaftsrecht, Episodes 1-4, 10,11

Literature

Scherer; Friedrich; et. al.: *Verträge - Praxiswissen Vertragsmanagement*, 2005

Scherer; Mühlbauer; Unterwiener; et. al.: *Den Rücken frei: No risk, much fun! Praxiswissen Risiko- und Compliancemanagement*, 2007.

Script für media law by Rechtsdirektor Johann Maier

F7102 Media Law

Content

Types of examinations

Written exam 90 min

Module: Optional Module

Module number	F-18
Person in charge for the module	Prof. Dr. Gerhard Krump
Study focus	
Course number and course name	Z3100 General Scientific Elective Subject 1 Z5100 General Scientific Elective Subject 2 F7100 Technical Elective Subject
Semesters	3, 5, 7
Duration of the module	5 semesters
Frequency of the module	
Type of the course	compulsory subject
Level	Undergraduate
Credit hours	8.0
ECTS	8.0
Workload	Compulsory attendance: 120.0 hours Self-study: 120.0 hours Total: 240.0 hours
Language of instruction	German

Aims of the module

By means of the AWP-module (general scientific elective subject), students are capable to gain knowledge and skills in subject areas that reach beyond the chosen course of study, so called Studium Generale (extracurricular studies). The eligible spectrum of subjects is wide-ranging. General scientific elective subject courses are offered centrally at Deggendorf University by the Sprachenzentrum/AWP (center of languages). Students can choose both attendance courses and courses at the Virtual University of Bavaria (VHB). The contents of the courses concern mainly the following areas:

- Linguistic area (is dominating)
- Didactic-pedagogic area
- Social science area
- Psychological-sociological area
- Technical scientific area
- Philosophic-social-ethic area
- Business area (not for courses of the faculty Business Administration/Business Informatics)

The concrete aims can be seen in the course descriptions of the concrete AWP courses.

Admission resp. recommended requirements

Number of participants is restricted (normally 40 with non-linguistic courses and 25 with foreign languages).

For selected continuative language courses, the required language competence needs to be proofed (by e.g. successfully passing a lower level or an entrance test). Other than that, no admission requirements.

Content

The concrete contents can be seen in the respective course descriptions.

Instruction and learning methods

Mostly seminar-like lessons, exercises or project processing

Special

Some AWP courses form coherent theme areas that build on one another and with which the students can, for example, gain an additional qualification (e.g. additional qualification Foundation Management and Company Succession by attending the courses Foundation Management, Foundation Plan Game and Company Succession). Also in the area of languages, courses with levels that build on one another are offered.

Language courses are partly additionally offered as holiday courses.

The courses can additionally be taken as voluntary general scientific elective subjects.

Course-specific specialties can be seen in the respective course descriptions.

A technical elective subjects can be replaced by a project work or by a compulsory subecjt with the same or a higher number of credit hours of another study focus or another study course.

Literature

Literature recommendations can be seen in the respective course descriptions.

Z3100 General Scientific Elective Subject 1

Types of examinations

Written exam 60 min, examination Center of languages/AWP

Z5100 General Scientific Elective Subject 2

Types of examinations

Written exam 60 min, examination Center of languages/AWP

F7100 Technical Elective Subject

Types of examinations

Module: Bachelor Thesis

Module number	F-19
Person in charge for the module	Prof. Dr. Gerhard Krump
Study focus	
Course number and course name	F7105 Bachelor Thesis F7106 Oral Examination Bachelor
Lecturer	Prof. Dr. Gerhard Krump
Semester	7
Duration of the module	1 semester
Frequency of the module	half-annually
Type of the course	compulsory subject
Level	Undergraduate
Credit hours	0.0
ECTS	15.0
Workload	Self-study: 450.0 hours Total: 450.0 hours
Language of instruction	German

Aims of the module

In the Bachelor thesis, students are to prove their ability to apply independently the knowledge they have gained of the area Media Technology to complex problems. Therewith, they prove that they have successfully finished their Bachelor studies and that they have gained the ability to work independently and scientifically.

Admission resp. recommended requirements

Everyone who has reached at least 150 ECTS credits is allowed to register for the Bachelor thesis.

Content

The Bachelor thesis is a written elaboration. It is issued by a person in the study course that is authorised to do so (University teacher/lecturer) and it is guided and evaluated by him/her. The student can make proposals for the topic.

The process time is normally 3 months – however, at most 6 months as off the issuance until handing back the thesis (acc. to §11 APO). The Bachelor thesis can be elaborated to every subject that can contentually be assigned to one of the modules of the course.

Instruction and learning methods

The contents and results of the Bachelor thesis are shortly presented by the students in an oral examination.

Special

The Bachelor thesis is to be written according to the guidelines of the "Rahmenprüfungsordnung (RaPO) and the "Allgemeine Prüfungsordnung" (APO) of Deggendorf University.

Literature

The thesis needs to contain a complete index of the used literature, the obtained information and other sources (regarding the formal requirements there is a reference to: Lück Wolfgang, Technik des wissenschaftlichen Arbeitens, 4. Auflage, Seite 10 ff.).

F7105 Bachelor Thesis

Types of examinations

Final grade forming seminar paper

F7106 Oral Examination Bachelor

Types of examinations

Oral exam

Module: Applied Audio Technology

Module number F-20
Person in charge for the module Prof. Dr. Gerhard Krump

Study focus

Course number and course name

F4107 Audio Applications 1
F5103 Audio Applications 2

Lecturer Prof. Dr. Gerhard Krump

Semesters 4, 5

Duration of the module 2 semesters

Frequency of the module annually

Type of the course compulsory subject

Level Bachelor

Credit hours 8.0

ECTS 10.0

Workload

Compulsory attendance: 150.0 hours

Self-study: 150.0 hours

Total: 300.0 hours

Language of instruction German

Aims of the module

The students are to be capable to link up gained theoretic and practical knowledge in different media types resp. in diversified types of presentation of a media type with creative and contentual aspects to a production-oriented product.

The project that is oriented to applications of audio technology, connects specific knowledge with team work, independent working, self-responsible planning and in particular creative and contentual features. As a result, students gain the ability to apply their knowledge technically (technically mature) but also creatively (contentually appealing).

The acoustic training the course Media Technology is therefore parted into three parts: In the subject Sound Technology the students learn the theoretic bases. In Sound Technology practical training, practical knowledge is transmitted by means of 8 experiments with intense guidance and supervision. In the subjects Audio Applications 1 and Audio Applications 2, students apply the gained competencies independently and link them up with creative contents to a product-oriented result that is presented to the public so that the project work strongly corresponds to the later occupation.

The project orients itself upon the medium radio so that the collaboration with two local radio stations both the daily work of a presenter and radio editors and all elements of broadcasting like radio contributions, radio advertisement, news, presentation and interview techniques, music mixture, packing elements and creation of broadcasts is learnt. Also the analysis of radio formats through determining the target group, programme concept, addressing attitudes, style of music of a radio station is implemented and applied.

By means of experts from practice, students gain for example speech training, training for the creation of jingles and advertisement spots as well as presentation and interview lessons with radio.

The results are not only broadcasted via FM broadcasting via the two radio stations with which the students produce and present weekly a one-hour programme but they are also internationally available in the university internet radio in two-hour radio programmes which are continuously newly created every 14 days. Furthermore, special programmes with discussion groups and live programmes are implemented.

As the highest form of creative working in the area sound design, students create in the two-semester module acoustic logos, jingles, advertisement spots and hearing samples. In small groups, students hence get to know individual radio elements and alternate with one another in order to get to know all working areas of broadcasting and the creative audio technology.

Among other things, the following competences are to be gained:

- Knowledge of essential basics and terms of all radio elements like contributions, advertisement, news, packaging element, presentation and programme
- Knowledge of the professional occupation field of editor, presenter and programme producers resp. all occupation fields in the medium radio as well as knowledge of the radio operations under live-conditions
- Knowledge of presentation forms of different media and adaption of information transfer to the specific information transmission of the relevant medium like e.g. conversion of a written text (print medium) into a speaking text resp. dialogue (hearing medium radio, hearing sample)
- Teamwork, project planning, independent, systematic and deadline-oriented working to create a presentable production result
- Aim-oriented information exchange and collaboration of different task groups (news, editor, presentation, advertisement with programme production)
- Analysis of radio formats and implementation as well as statistic evaluation of surveys
- Creating radio contributions, news, spots, packaging elements, presentations and complete programmes
- Application of recording, sound processing and sound display methods for the development of a public presentable media product
- Independent working in the sound studio
- Development and production of contentually sophisticated radio programmes and hearing samples
- Practice and customer-oriented working (advertisement spot creation for Deggendorf companies) as well as organisation of events (discussion groups, interviews, live-programmes)
- Presentation of own production results

- Combination of gained technical competence with creative and contentual abilities to a sophisticated product
- Creative development and technical implementation of an idea to a product

The project connects factual knowledge and conceptual knowledge with method and production knowledge to a metacognitive knowledge by way that students recognise and apply their talent in the area audio production.

Admission resp. recommended requirements

Successfully passed exams in the subjects Sound Technology and Sound Technology practical training as well as knowledge of Project Management

Content

1. Introduction internet radio: Aim setting, usage statistics internet, packaging elements, radio formats, legal bases, realisation, contribution, presentation, advertisement, news, programme, programme monitor, music formats, technics, archiving
2. Speech training: speaker's text, syntax, pronunciation, correct speaking, voice cosmetics, speaking in the sound studio, practical exercises and speech training in the sound studio
3. Radio contribution: contribution, interview, reportage, research, contribution structure, formulation, message, types of questions, original sound, background noise, noise, dramaturgy, music, check list, frequent mistakes
4. The magazine programme: structure, programme monitor, presentation, music, packaging elements, technics, frequent mistakes
5. Advertisement spot: idea development, types of advertisement, types of design, sound effects, reminder, legal bases
Practical exercises in workshops
6. Presentation and interview techniques: Posing questions, contents, techniques
Practical exercises in workshops via video recording

Instruction and learning methods

Seminar-like lessons with script and numerous audio and video demos as well as practical exercises and homework.

Independent working in small groups. Project planning and systematic project progress control through project reviews.

Training, presentations and workshops by experts (e.g. speech coach, editors, presenters) with respective professional practice in the sound studio.

Guided working in the sound studio.

Special

Scripts, workshops, presentations by experts, working in the sound studio, live-conditions

Project grade is formed by arithmetic means of at least 5 individual grades by grading individual project results (radio contributions, spots etc) as well as commitment grade.

Literature

Albrecht, C.:*Der Tonmeister*, Schiele & Schön-Verlag, 2010.
Bauernfeind, W.:*Das Radio-Feature*, UVK Verlagsgesellschaft, 2007.
Bloom-Schinnerl, M.:*Der gebaute Beitrag*, UVK Verlagsgesellschaft, 2002.
Breitkopf, K.:*Rundfunk. Faszination Hörfunk*, Hüthig-Verlag, 2006.
Bronner, K.:*Audio-Branding*, Fischer-Verlag, 2009.
Kühn, M.:*Der digitale terrestrische Rundfunk*, Hüthig-Verlag, 2007.
La Roche, W.:*Radio-Journalismus*, List-Verlag, 2004.
Lensing, J.:*Sound-Design*, Schiele & Schön-Verlag, 2009.
Lexikon Hörfunk Fernsehen Internet, Tr Verlagsunion, 2000.
Lynen, P.:*Das wundervolle Radiobuch*, Nomos-Verlag, 2010.
Overbeck, P.: *Radiojournalismus*, UVK Verlagsgesellschaft, 2009.
Reiter, M.:*Der perfekte Medienauftritt*, Radioropa-Verlag, 2006.
Scholz, L.:*GEMA, GVL & KSK*, Edition Brochinsky, 2007.
Süß, G.:*Der Projektmanagement-Kompass*, Vieweg-Verlag, 2002.
Tillmann, H.:*Fachwörterbuch Hörfunk und Fernsehen*, Publicis Corporate Publishing, 2000.
Wienken, U.:*Radiomoderatoren und ihre Erfolgskonzepte*, Nomos-Verlag, 2009.
INTERAUDIO − Grundkurs Radio in 5 Sprachen /hrsg. von Radio CORAX /
www. interaudio .org.

F4106 Audio Applications 1

Study focus

Media Design

Types of examinations

Practical proof of academic achievement

F5103 Audio Applications 2

Types of examinations

Practical proof of academic achievement

Module: Interactive Media

Module number	F-21
Person in charge for the module	Prof. Dr. Peter Faber
Study focus	Media Design
Course number and course name	F5104 Interactive Media
Lecturer	Prof. Dr. Peter Faber
Semester	5
Duration of the module	1 semester
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	4.0
ECTS	5.0
Workload	Compulsory attendance: 60.0 hours Self-study: 90.0 hours Total: 150.0 hours
Language of instruction	German

Aims of the module

Interactive media are means of communication that react to actions of the user. This behaviour is reached by electronic systems that process digitally provided media data and present them to the user. This interactive media usage continuously takes over new application areas.

Students gain in this course a surveying understanding of the methods of communication and processing of diverse multimedia data formats. Additionally the develop further an understanding of the input and output of this data and its processing in interactive media.

Admission resp. recommended requirements

Advantageous: "Digital Media" and "Engineering Mathematics" from the Bachelor course Media Technology

Content

The individual theme areas are treated as required where the focus is supposed to be at the last chapters. Total overview:

1. Channels and Media
 - a) Digitalisation
 - b) Coding and compression
2. Audio/video representation
 - a) Digitalisation, coding
 - b) Production, file formats
 - c) Graphics representation

3. Interactive media, digital media
 - a) Multimedia and mutli modality
 - b) Virtual reality
 - c) Further interface methods
 - d) Analysis of input and output devices
4. Tools of design of interactive media
 - a) Overview
 - b) Programming languages
 - c) Application and programming
 - d) Projects

Instruction and learning methods

Seminar-like lessons with exercises, project work

Special

Subject to circumstances (in particular size of the course): Seminar paper, exam, individual exam, proof of academic achievement

Literature

- Bender, Michael; Brill, Manfred: *Computergrafik - Ein anwendungsorientiertes Lehrbuch*. Hanser, 2006.
- Burnette, Ed: *Hello, Android -The Pragmatic Bookshelf, LLC*. 2nd Edition, NC, USA: Raleigh, 2009.
- Höhl, Wolfgang: *Interaktive Ambiente mit Open-Source-Software*. Wien: Springer-Verlag, 2009.
- Igoe, Tom, Beijing [u.a.]: *Making things talk*. Igoe, Tom. ; O'Reilly. 2007.
- Malaka, Rainer; Butz, Andreas; Hußmann, Heinrich: *Medieninformatik - eine Einführung*. München: Pearson Studium, 2009.

Further literature and online sources subject to the course

F5104 Interactive Media

Study focus

Media Design

Types of examinations

Written or oral proof of academic achievement or seminar paper

Literature

Module: Media Design

Module number	F-22
Person in charge for the module	Günter Reinhardt
Study focus	
Course number and course name	F5015 Media Design 2
Lecturer	Günter Reinhardt
Semester	5
Duration of the module	1 semester
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	4.0
ECTS	5.0
Workload	Compulsory attendance: 46.0 hours Self-study: 104.0 hours Total: 150.0 hours
Language of instruction	German

Aims of the module

The module is to enable students to independently apply the gained design-theoretic fundamentals and to develop, implement, present and organise complex design and layout concepts to concrete design tasks right up to planning and development of corporate design solutions.

Here, the following aims are reached:

- the students are able to critically analyse tasks under consideration of customer wishes and requirements
- they are capable to hence develop strategies and solution concepts
- they master the design-theoretic fundamentals of creative work and are able to transfer, present and explain this knowledge in concrete proposals and concepts.
- They possess the necessary competence to translate designs and concepts into practical results.
- They are capable to work independently creatively

Admission resp. recommended requirements

Module Fundamentals of Design

Content

1. Corporate Identity Management
 - a) Meaning and development
 - b) Aims
 - c) The Corporate Mission Statement

- d) The Image
- e) Corporate Communication and Behaviour
- 2. Corporate Design
 - a) Emotional appeal
 - b) Design elements
 - c) Imagery
 - d) Strategies and concepts
 - e) Presentation techniques
- 3. Creative working on a concrete project in individual or group work, also in cooperation with firms

Instruction and learning methods

Lectures, project work in groups or individually, also in cooperation with firms

Special

Project seminar paper, interim presentation as grade forming proof of academic achievement for 10% of the final grade

Literature

- Herbst, Dieter: *Corporate Identity*. Berlin: Cornelsen, 2003.
- Birkigt/Stadler/Funck (Hrsg): München, Verlag moderne Industrie, 2002. **TITEL??**
- Gaede, Werner: *Abweichen von der Norm*, München: Herbig, 2002.
- Kroeber-Riel, Werner: *Bildkommunikation*, Verlag Vahlen, 1996.

F5105 Media Design 2

Study focus

Media Design

Types of examinations

Practical proof of academic achievement, final grade forming seminar paper

Module: Web TV

Module number	F-23
Person in charge for the module	Prof. Ernst Jürgens
Study focus	Media Design
Course number and course name	F5106 Film/Video Design 4
Lecturers	Prof. Ernst Jürgens Robert Zizlsperger
Semester	5
Duration of the module	1 semester
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	6.0
ECTS	6.0
Workload	Compulsory attendance: 90.0 hours Self-study: 90.0 hours Total: 180.0 hours
Language of instruction	German

Aims of the module

The aim of the overall module is the imparting of editorial and technical knowledge and skills (inter alia team work) for the production and broadcasting of live-programmes in the internet (doschauer.tv).

The students need to pass both the technics and the editorial semester.

All programmes of doschauer.tv are produced and broadcasted live and in front of ca. 100 spectators in the medium studio of the university. Therefore, the second comprehensive aim of the module can be reached: a high degree of proximity to professional working conditions.

Profound knowledge:

Know (factual knowledge and international knowledge):

Knowledge of diversified internet tv broadcasters and formats (technics and content)

Knowledge of all essential aspects of transmission techniques

Knowledge of all essential aspects of production techniques

Knowledge of the jargon

Understand (conceptual knowledge):

Understand the necessity of the collaboration between editorial team and engineering/production

Classify internet tv formats and explain the differences with public broadcasters, private stations and media cultural initiatives

Derivation and prediction of possible multimedia perspectives of web TV (discussion)

Apply (method-oriented knowledge):

Live-production and live-transmission of TV programmes in the internet using the example of doschauher.tv

Implementation of TV-journalistic operating methods

Production of video clips, presentations, programme planning and procedures (research, exposé, shooting, cut, final sound processing, issuance)

Application of broadcasting techniques

Analyse (method-oriented knowledge):

Analysis of diverse design features of web TV

Analysis of TV-historic formats and experiments as predecessors of web TV

Recognising connections of time-historic and economic production conditions (engineering and content)

Analysis of commercial perspectives of web TV (discussion)

Evaluate (metacognitive knowledge):

Evaluation of the informative and action-determining added value of individual web TV projects

Evaluation of entertainment quality of web TV projects

Evaluation of qualities of interaction possibilities with web TV

Synthesise (method-oriented knowledge):

Creating own TV formats (e.g. live transmission of a Poetry Slam in the frame of doschauher.tv)

Admission resp. Recommended requirements

Basic knowledge of TV design

For the preparation to the module it is recommended to have a close look at examples for web TV

Content**1. Recording and broadcasting technique**

a) Theory: Camera, sound, light with studio productions (A)

b) Theory: Camera, sound, light with studio productions (B)

c) Broadcasting technique theoretic connections (A)

d) Broadcasting technique theoretic connections (B)

2. Market/analysis

a) 2.1 technical equipment of competitive channels and possibilities of cooperation

b) 2.2. technical perspectives of web-series (in cooperation with DonauTV)

c) 2.3 engineering of video portals

3. Compressing film files**4. Trial broadcast**

a) Procedure and blocking rehearsal

b) Production and broadcast of the trial broadcast (in cooperation with pupils of the grammar school Landau; students take the teacher function)

5. Criticism (A)

- a) Common discussion of technical and editorial qualities of the broadcast
- b) Individual criticism to the subjects: camera, sound, light, broadcast technique
- c) Development of device and/or procedure-technical improvements

6. The first programme

- a) Planning (together with the editorial team)
- b) Procedure and blocking rehearsal
- c) Production and broadcast of the first programme

7. Criticism (B)

- a) Common discussion of the technical and editorial qualities of the broadcast
- b) Individual criticism to the subjects: camera, sound, light, broadcast technique
- c) Discussion with external critics (TV editorial team, colleagues)
- d) Development of device and/or procedure-technical improvements

8. The second programme

- a) Planning (together with the editorial team)
- b) Procedure and blocking rehearsal
- c) Production and broadcast of the second programme

9. Criticism (C)

10. Common discussion of the technical and editorial qualities of the broadcast

- a) Individual criticism to the subjects: camera, sound, light, broadcast technique
- b) Discussion with external critics (TV editorial team, colleagues)
- c) Development of device and/or procedure-technical improvements

11. The third programme

- a) Planning (together with the editorial team)
- b) Procedure and blocking rehearsal
- c) Production and broadcast of the second programme

12. Criticism (D)

- a) Common discussion of the technical and editorial qualities of the broadcast
- b) Individual criticism to the subjects: camera, sound, light, broadcast technique
- c) Discussion with external critics (TV editorial team, colleagues)
- d) Development of device and/or procedure-technical improvements

13. Special programme (e.g. Poetry Slam in cooperation with the city library)

- a) Finding topics and development of a concept
- b) Production and broadcast
- c) Broadcast of the subsequent semester ending party

14. Short presentations: all teams present their work in retrospective

15. The work of the editorial team

- a) Function and procedure of editorial work with TV stations
- b) Team building (presentation, video clips, guests, live-music, reportage team, web-supervision, PR)
- c) the teams develop task-specific proposals and present the proposals in the frame of an editorial discussion

16. Market/analysis

- a) Contents of competitive channels and possibilities of cooperation
- b) contentual perspectives of web-series (in cooperation with DonauTV)

17. Trial broadcast

- a) Sighting establishing shots, lower thirds and graphics, agreement on presentations, preparation of talks with guests of the programme
- b) Agreements with the engineering team (sound of live-bands and guests, production, light)
- c) Production and broadcast of the trial programme (in cooperation with pupils of the grammar school Landau; students take to teacher function)

18. Criticism (A)

- a) Common discussion of the technical and editorial qualities of the programme
- b) Individual criticism to the topics: establishing shots, presentation, guests, production, dramaturgy
- c) Development of editorial proposals of improvement

19. The first programme

- a) Planning (together with the engineering team)
- b) Procedure plan
- c) Production and broadcast of the first programme

20. Criticism (B)

- a) Common discussion of the technical and editorial qualities of the programme
- b) Individual criticism to the topics: establishing shots, presentation, guests, production, dramaturgy
- c) Discussion with external critics (TV editorial team, colleagues)
- d) Development of editorial proposals of improvement

21. The second programme

- a) Planning (together with the engineering team)
- b) Procedure plan
- c) Production and broadcast of the first programme

22. Criticism (C)

- a) Common discussion of the technical and editorial qualities of the programme
- b) Individual criticism to the topics: establishing shots, presentation, guests, production, dramaturgy
- c) Discussion with external critics (TV editorial team, colleagues)
- d) Development of editorial proposals of improvement

23. The third programme

- a) Planning (together with the engineering team)
- b) Procedure plan
- c) Production and broadcast of the first programme

24. Criticism (D)

- a) Common discussion of the technical and editorial qualities of the programme
- b) Individual criticism to the topics: establishing shots, presentation, guests, production, dramaturgy
- c) Discussion with external critics (TV editorial team, colleagues)
- d) Development of editorial proposals of improvement

25. Special programme (e.g. Poetry Slam in cooperation with the city library)

- a) Finding topics and development of a concept (guests, establishing shots, live band, graphics, production, production design), p.r.n. search for cooperation partners
- b) Agreements with the engineering team
- c) Production
- d) Broadcasting the subsequent semester ending party (presentation, camera, sound, light, photo)

26. Short presentations: all teams present their work in retrospective

Instruction and learning methods

Lectures, team work, project work, presentations, outdoor exercises (introductory films, live reportages)

Special

Guest lectures, external critics, live broadcasts

The grade is formed by three parts:

1. Commitment in the development, preparation and production of the programmes (personal)
2. Quality of the work of the individual teams (editorial and engineering)
3. Presentation with retrospective presentation of the work of the teams and improvement proposals (team)

The grade for the quality accounts for 50%, presentation and commitment each 25% of the final grade

Literature

- Broszeit, Jörg: *IPTV und Interaktives Fernsehen*, Saarbrücken, 2007.
- Karstens, Erik: *Fernsehen digital - Eine Einführung*. Wiesbaden: VS-Verlag, 2006.
- AV Streaming Echtzeitübertragung von Bild und Ton im Internet, chaosradio.ccc.de, Chaos Computer Club Berlin e. V.

F5106 Film/Video Design 4

Study focus

Media Design

Types of examinations

Final grade forming seminar paper

Module: Visualisation and Animation

Module number	F-24
Person in charge for the module	Prof. Joerg Maxzin
Study focus	Media Design
Course number and course name	F7103 3DVisualisation and Animation
Lecturers	Gerhard Brändlein Prof. Joerg Maxzin
Semester	7
Duration of the module	1 semester
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	4.0
ECTS	5.0
Workload	Compulsory attendance: 60.0 hours Self-study: 150.0 hours Total: 210.0 hours
Language of instruction	German

Aims of the module

Already existing basic knowledge of the students in 3D modelling and animation are profounded by this module and practiced by complex tasks. The students are now capable to design independently virtual characters and to animate in different techniques.

Additionally to the design and generating of 3D forms, students have gained a broad knowledge in the display of 3D objects, inclusive of their surfaces and structures and are able to describe them under consideration of different light situations.

The students are able to implement specific tasks of 3D visualisation both in individual images and in moving image sequences with appropriate techniques and to evaluate and decide in this context emerging animation-relevant dramaturgic questions.

Admission resp. recommended requirements

Fundamentals of 3D modelling

Content

1. Introduction into 3D Character Design
 - a) Term character
 - b) History of the 3D character
2. Fundamentals of figural design
 - a) Figural anatomy
 - b) Rules for the design of a 3D character
3. Polygon modelling

- a) Quad-based network structures
- b) Frequently to be modelled objects
- c) Special modelling functions
- 4. Lighting and camera
 - a) Expanded 3D lighting systems
 - b) Turntable presentations
- 5. Rendering
 - a) Expanded application of 3D shaders
 - b) Expanded functions of rendering
 - c) Functionality of a render farm
- 6. Surfaces processing and texturing
 - a) Character FM unwrap
 - b) Creating complex textur systems
- 7. Character rigging
 - a) Methods of character control
 - b) Software-specific applications
- 8. Character skinning
 - a) Hierarchic linkages
 - b) Linking geometry to character rigs
- 9. Character animation
 - a) Fundamentals of figural animation
 - b) Creating animated sequences
- 10. Issuance of 3D visualisations
 - a) Fundamentals for stills
 - b) Fundamentals for moving image sequences

Instruction and learning methods

Lectures, practical exercises in the 3D laboratory. Conclusive presentation of the semester results.

Special

Support by the online iLearn platform.

Link list for 3D themes on the iLearn platform.

Excursions to specialist conferences.

Literature

- Bammes, G.: *Die Gestalt des Menschen*. 1. Auflage, Stuttgart: Urania, 2002.
- Koenigsmarck, A. v.: *3D-Character-Design*. 1. Auflage, Bonn: Galileo-Press, 2000.
- Osipa, J.: *Stop Staring: Facial Modeling and Animation Done Right*. 2. Auflage, Indianapolis: Wiley, 2007.
- Qwek, D.: *Advanced Modeling 1 - Sub-D Creature Modeling (DVD)*, 1. Auflage, Surrey: CG Academy, 2010.

F7103 3D Visualisation and Animation

Study focus

Media Design

Types of examinations

Final grade forming seminar paper, proof of academic achievement, seminar paper

Module: Graphic Programming

Module number	F-25
Person in charge for the module	Prof. Dr. Udo Garmann
Study focus	Media Informatics
Course number and course name	F4108 Graphic Programming
Lecturers	Prof. Dr. Peter Faber Prof. Dr. Udo Garmann Prof. Dr. Goetz Winterfeldt
Semester	4
Duration of the module	1 semester
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	4.0
ECTS	5.0
Workload	Compulsory attendance: 60.0 hours Self-study: 90.0 hours Total: 150.0 hours
Language of instruction	German

Aims of the module

The aim of these lectures is to get to know and apply in a practice-oriented way graphic APIs. 2D and 3D APIs and their approaches are treated. Examples for APIs are OpenGL, DirectX, Java3D or OpenInventor.

Just as little as the used programming language is to the fore, so is the concrete API, but rather the concepts of programming are.

Here, one for example talks about event processing, possibilities of interaction, rendering and collision detection. The imparted knowledge is to enable students to program a graphic application like e.g. a visualisation of data or processes, an interactive application or a game.

Admission resp. recommended requirements

Formally: none

Contentual: Informatics basic courses

Content

1. Principles of graphics and interaction
 - a) Programme structure
 - b) Windows and drawing areas
 - c) Drawing simple objects
 - d) Interaction
 - e) Threads

2. Mathematic fundamentals

a) Affine space

b) Mappings

3. 2D API

a) Introduction (application and programme structure=

b) Drawing

c) Interaction

d) Further concepts

4. 3D API

a) Introduction

b) Drawing

c) Interaction

d) Further concepts

Instruction and learning methods

Lectures with exercises, project work

Special

Course administration with Moodle

Literature

Shreiner, Dave et al.: *OpenGL Programming Guide: The Official Guide to Learning OpenGL*. 5. Ausgabe. Addison-Wesley Professional, 2006 (oder neuer).

Shreiner, Dave (Hrsg.): *OpenGL Reference Manual: The Official Reference Document to OpenGL*. 4. Ausgabe. Addison-Wesley Professional, 2004 (oder neuer).

Wernecke, Josie; Open Inventor Architecture Group: *The Inventor Mentor: Programming Object-Oriented 3D Graphics with Open Inventor*. Release 2 (OTL). Addison-Wesley, 1994.

Addison-Wesley, 1994.

Online sources

F4108 Graphic Programming

Study focus

Media Informatics

Types of examinations

Final grade forming seminar paper, written exam 90 min

Module: Internet Applications

Module number	F-26
Person in charge for the module	Prof. Dr. Goetz Winterfeldt
Study focus	Media Informatics
Course number and course name	F5107 Internet Applications
Lecturer	Prof. Dr. Goetz Winterfeldt
Semester	5
Duration of the module	1 semester
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	4.0
ECTS	5.0
Workload	Compulsory attendance: 60.0 hours Self-study: 90.0 hours Total: 150.0 hours
Language of instruction	German

Aims of the module

The module builds on the module Programming 3. Students are introduced to the technologies of the internet. They get to know essential terms like application server, web server, databank, client and browser. They learn techniques that can be used for the creation of web applications. Additionally to the introduction into standard technologies (.Net, JSP), they obtain also an introduction into the programming of proprietary web applications.

After having passed this module, the graduate will have reached the following learning aims:

- They know terms like web applications, tiers, client, browser, server and know to class them
- Students know browser technologies, client technologies and server technologies
- Students are able to analyse business processes and extract cases of applications which are then supported by software
- They are able to design applications that realise the individual cases of application
- They know how applications are realised and use here J2EE technologies (JSP, Servlets, Taglibs, JDBC)
- They obtain an introduction into the usage of .Net and are able to realise .Net applications (C#, ASP)
- They know layers of proprietary systems and know the essential utility classes for the realisation of these systems, like threads and parsers
- They are able to design and realise servers

Admission resp. recommended requirements

Module Programming 3

Content

1. Introduction
 - a) Internet basic terms
 - b) Browser, client, server, databank
2. Browser technologies
 - a) HTML, DHTML, XHTML
 - b) CSS
 - c) Java Script
3. Client technologies
 - a) Applets
 - b) ActiveX
4. J2EE
 - a) Overview
 - b) JSP Scriptlets
 - c) Serverlets
 - d) JDBC (excursion data banks)
 - e) Netbeans and taglibs
5. .Net (ASP)
 - a) Overview
 - b) Realisatio of ASP applications
6. Analysis and design
 - a) Cases of application
 - b) Data bank modelling
 - c) Application modelling
 - d) Implementation
7. Proprietary systems
8. Layer model
9. Servers
10. Technologies
 - a) Sockets
 - b) Threads
 - c) XML and DTD
 - d) Parser

Instruction and learning methods

Lectures with exercises

Literature

Wöhr: *Web Technologien*. dpunkt Verlag, 2004. ISBN 3-89864-247.
Bengel: *Verteilte Systeme*. Vieweg, 2004. ISBN 3-528-25738-5.
Seeboerger: *JSP mit Tomcat*. Markt und Technik. ISBN 3-8272-6300-x.

F5107 Internet Applications

Study focus

Media Informatics

Types of examinations

Written exam 90 min

Module: Communications and Network Engineering

Module number	F-27
Person in charge for the module	Prof. Dr. Udo Garmann
Study focus	Communications Engineering
Course number and course name	F5108 Communications and Network Engineering
Lecturer	Prof. Dr. Udo Garmann
Semester	5
Duration of the module	1 semester
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	4.0
ECTS	5.0
Workload	Compulsory attendance: 60.0 hours Self-study: 90.0 hours Total: 150.0 hours
Language of instruction	German

Aims of the module

The module has the following aims:

To understand the internet and to be able to describe the internet layer model.

To understand network protocols from the application layer to the connection layer. To understand selected protocols like HTTP, SMTP, TCP, UDP and IP.

Admission resp. recommended requirements

Formally: none

Contentual: Informatics basic courses

Content

1. Introduction (networks generally)
 - a) Introduction
 - b) Layer model as basis for descriptions
 - c) Classification of computer networks
 - d) Topologies
 - e) What is a protocol?
 - f) Standards
 - g) Connection models
 - h) Delivery modes
 - i) Physical layer
2. What is the internet?
 - a) Interplay of the protocols

- b) The transport layer
- c) Delays and losses: How do they occur?
- d) Ipv4 addressing
- 3. The application layer and HTTP
 - a) Preliminary considerations and terms
 - b) Web and HTTP
- 4. DNS
 - a) Introduction
 - b) Types of name servers
 - c) DNS entries and protocol
- 5. Electronic Mail
 - a) Sending emails
 - b) Email servers
 - c) SMTP
 - d) Mail access protocols
- 6. The transport layer and UDP
 - a) Services of the transport layer (KR 3.1)
 - b) Multiplex and demultiplex (KR 3.2)
 - c) UDP (KR 3.3)
- 7. TCP
 - a) Overview
 - b) Segment structure
 - c) Sequence numbers and ACKs (KR 3.5.1 – 3.5.4)
 - d) TCP timeout
 - e) Data flow controls (KR 3.5.5)
 - f) Connection management (KR 3.5.6)
 - g) TCP overload control
 - h) TCP latency modelling
- 8. The network layer and IP
 - a) Introduction
 - b) Routing
 - c) Forwarding
 - d) Internet protocols of the network layer
 - e) Ipv4 addressing
 - f) NAT
 - g) Ipv6 addressing
- 9. The connection layer and Ethernet
 - a) LAN-addresses
 - b) ARP
 - c) Ethernet
 - d) Hubs and switches
 - e) PPP
 - f) CRC

Instruction and learning methods

Lectures with exercises

Special

Course administration with Moodle, independent practical training protocol analysis

Literature

Kurose, James F.; Ross, Keith W.: *Computernetzwerke - Der Top-Down-Ansatz*. 4., aktualisierte Auflage. München, 2008.

Tanenbaum, Andrew S.: *Computernetzwerke*. 4. Auflage. München: Pearson Education Deutschland GmbH, 2003.

F5108 Communications and Network Engineering

Study focus

Media Informatics

Types of examinations

Written exam 90 min

Module: Software Engineering

Module number	F-28
Person in charge for the module	Prof. Dr. Goetz Winterfeldt
Study focus	Media Informatics
Course number and course name	F5109 Software Engineering
Lecturer	Prof. Dr. Goetz Winterfeldt
Semester	5
Duration of the module	1 semester
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	6.0
ECTS	6.0
Workload	Compulsory attendance: 90.0 hours Self-study: 90.0 hours Total: 180.0 hours
Language of instruction	German

Aims of the module

The module builds on the module Programming. Here, students get introduced to the basic terms of software engineering for multimedia applications. They know specific professional terminology and processes. They have gained practical knowledge in dealing with different tools in the process of software development. They have worked in groups on a project for a special device and have passed through all layers of software development.

After having passed this module, graduate will have reached the following learning aims:

- Understand for what we need a software development process and which process types exist
- Know essential phases in the development process and to be able to describe their tasks in the phases.
- Know fundamentals of the analysis and to be able to apply them to concrete problems
- Be able to distinguish between logical and technical design and to be able to evaluate additional problems of the interaction design
- Be able to apply tools of the logical design. Analyse tasks from the daily environment from the analysis to a sustainable design. Generate the design and place the model at the disposal of the developer.
- Additionally, students know methods to scale applications
- Students are able to apply tools of the object-oriented programming

- Students know how to protect programmes against errors and are able to assess the limits of the own quality ensurance.
- Students know who to automatically test classes and modules and are able to implement and evaluate the test independently
- Students know how to automatically document sources and know the tools of documentation

Admission resp. recommended requirements

Module Programming

Content

1. Introduction
 - a) Software engineering basic terms
 - b) Development processes
2. Analysis
 - a) Interveiws
 - b) Usecase analysis
 - c) Requirements
 - d) Documentation
 - e) Specification book
 - f) Scope statement
 - g) Cases of application
3. Software design
 - a) Design
 - b) Logical design
 - c) Static UML
 - d) Dynamic diagrams
 - e) Technical design
 - f) Requirements
 - g) Scaling
4. Implementation
 - a) Object-oriented development
 - b) Exception handling
 - c) Test automatisation
 - d) Automatisation of documentation
 - e) Help systems
5. Installation and service
 - a) Installation of applications
 - b) Error patches
 - c) Infrastructure components

Instruction and learning methods

Lectures with exercises and practical training

Literature

Balzert:*Lehrbuch der Softwaretechnik I.* Spektrum Verlag, 2001. ISBN 3-8274-0480-0.

Oestereich:*Objektorientierte Softwareentwicklung.* Oldenburg Verlag, 1999. ISBN 3-486-24787-5.

Rupp:*Requirements-Engineering und Management.* Hanser, 2004. ISBN 3-446-22877-2.

F5109 Software Engineering

Study focus

Media Informatics

Types of examinations

Practical proof of academic achievement, written exam 90 min

Module: Databanks

Module number	F-29
Person in charge for the module	Prof. Dr. Udo Garmann
Study focus	Media Informatics
Course number and course name	F5110 Databanks
Lecturer	Prof. Dr. Udo Garmann
Semester	5
Duration of the module	1 semester
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	4.0
ECTS	5.0
Workload	Compulsory attendance: 60.0 hours Self-study: 90.0 hours Total: 150.0 hours
Language of instruction	German

Aims of the module

The module has the following aims:

- Be able to describe the development process for databanks
- Know the elements of a entity-relationship-model
- Be able to arrange an entity-relationship-model for a databank
- Be able to recognise anomalies and to normalise tables
- Be able to administer databanks with a databank management system
- Be able to implement databank scannings with SQL
- Know the function of a DBMS

Admission resp. recommended requirements

Formally: none

Contentual: Informatics basic courses

Content

1. Introduction
 - a) Introduction
 - b) What are databanks for?
 - c) Examples
2. Terms, definitions and connections
 - a) Fundamental terms
 - b) Relational data model
 - c) Databanks
 - d) DBMS

- e) Databank applications
- f) Key in relational databanks
- g) Relational integrity
- 3. SQL
 - a) Introduction
 - b) SQL and the BNF
 - c) DDL
 - d) DML
 - e) Tools (phpMyAdmin, sqlExplorer, Squirrel, etc.)
- 4. Analysis and design
 - a) Steps of databank development
 - b) Questioning techniques/information procurement
 - c) Cases of application
 - d) Tools
- 5. ERM
 - a) UML
 - b) Entities
 - c) Relationships
 - d) Attributes
 - c) Multiplicity of relationships
 - f) Tools
- 6. Normalisation
 - a) Introduction
 - b) Anomalies
 - c) First normal form
 - d) Functional dependencies and the 2NF
 - e) Third NF
- 7. From the concept to the implementation
 - a) Introduction
 - b) ER modelling
 - c) Depicting the ER models on tables
 - d) Normalisation of tables
 - e) Examining business rules
 - f) Agreements with users
 - g) Application development
- 7. Further aspects

Instruction and learning methods

Lectures with exercises

Special

Course administration with Moodle

Literature

Conolly, Thomas M.; Begg, Carolyn E.: *Database Solutions - A step-by-step guide to building databases*. 2nd Edition. Harlow, Essex: Pearson Education Limited, 2004.

Conolly, Thomas M.; Begg, Carolyn E.: *Database systems - A practical approach to design, implementation, and management*. 4th edition. Addison-Wesley, an imprint of Pearson Education, 2005.

F5110 Databanks

Study focus

Media Informatics

Types of examinations

Final grade forming seminar paper, written exam 90 min

Module: Special Topics of Media Informatics

Module number	F-30
Person in charge for the module	Prof. Dr. Goetz Winterfeldt
Study focus	Media Informatics
Course number and course name	F7104 Special Topics of Media Informatics
Lecturers	Prof. Dr. Peter Faber Prof. Dr. Udo Garmann Prof. Dr. Goetz Winterfeldt
Semester	7
Duration of the module	1 semester
Frequency of the module	annually
Type of the course	compulsory subject
Level	Bachelor
Credit hours	4.0
ECTS	5.0
Workload	Compulsory attendance: 60.0 hours Self-study: 60.0 hours Total: 120.0 hours
Language of instruction	German

Aims of the module

The module builds on the module Software Engineering and Graphic Programming. Students know different media frameworks (DirectX, OpenGL). They analyse problems and are able to assess which effort arises when implementing applications for different platforms. They know which tools for the realisation of applications for different terminal devices, e.g. Itouch, Windows mobile devices, J2ME, are used (compiler, CrossCompiler, Emulator). They know libraries that provide multimedia functions, analyse problems and are able to design applications for the target platform. They have realised a project, discussed the architecture with fellow students and defended their concept. After having passed this module, graduates will have reached the following learning aims:

- They know different frameworks and libraries for the realisation of applications
- They know which tools are necessary for the realisation of applications for different platforms (Toolchain, Emulator, Compiler, Debugger)
- They are able to design multimedia applications and to create a prototype
- They have independently implemented and presented a project

Admission resp. recommended requirements

Module Software Engineering and Graphic Programming

Content

1. Introduction
 - a) Multimedia
 - b) Formats
2. Terminal devices and development environment
 - a) Apple Itouch
 - b) Windows Mobile 5.0
 - c) J2ME
3. Application concept
 - a) Streaming
 - b) Gaming
 - c) Graphics

Instruction and learning methods

Lectures with exercises

Literature

Bargen:*Inside DirectX*.2001. ISBN 3-86063-436-4.

Bruns:*Audio- Video- und Graphikprogrammierung*.Hanser, 2003. ISBN 3-446-22115-8.

Wright:*Open GL Super Bibel*.1998. ISBN 1-57169-073-5.

F7104 Special Topics of Media Informatics

Study focus

Media Informatics

Types of examinations

Practical proof of academic achievement, written exam 90 min

Module: Internship

Module number	F-32
Person in charge for the module	Prof. Ernst Jürgens
Study focus	
Course number and course name	F6105 Industrial Internship
Semester	6
Duration of the module	1 semester
Frequency of the module	annually
Type of the course	compulsory subject
Level	Undergraduate
Credit hours	0.0
ECTS	22.0
Workload	Self-study: 660.0 hours Total: 660.0 hours
Language of instruction	German

Aims of the module

The aim of the module is that students apply the gained knowledge in practice and to get to know at the same time the operational processes in a company. The participants gain an overview about the operating methods and operational processes in an enterprise and obtain insight into the complexity of engineering processes. They are able to expand and profound the gained knowledge through experiences in the practical application. The students get to know the contemporary working methods for the problem solution in the area Media Technology and they know how to apply it. In the professional occupation area of a media technician, they are able to get comfortable through the independent collaboration on concrete tasks and therefore to gain problem solving competencies.

Admission resp. recommended requirements

One can only get access to a practical study semester if one has reached at least 120 ECTS credits.

Content

The practical semester is implemented in firms and enterprises in-country or abroad, e.g. in an industrial or trading company, banks, insurance companies or public offices. The practical semester is usually conducted in the 6th semester and comprehends 20 weeks. As a supplement to the practical semester, in total 4 internship seminars are to be attended. Those can be attended in any semester or during the semester break.

The internship should suffice for the teaching content of a creative media basic training. This includes activities from the fields Media Design and Media Informatics for TV, HF, internet, CD-ROM and the work areas interface and screen design, 3D computer graphics, animation, journalism and CrossoverMedia, media art, mobile communication media as well as their production calculation and production management.

Instruction and learning methods

Practical work in a company. The internship is evaluated as "passed" if the student participates successfully and hands in a written report of at least 10 DIN A4 pages.

F6105 Industrial Internship

Types of examinations

Proof of academic achievement, seminar paper

Module: 3D Computer Animation

Module number	FM-14
Person in charge for the module	Prof. Dr. Peter Faber
Study focus	
Course number and course name	
Semester	
Duration of the module	-9998 semesters
Frequency of the module	
Type of the course	
Credit hours	0.0
ECTS	0.0
Workload	Total: 0.0 hours
Language of instruction	