

the health & life sciences university

Module Manual

Health Information Management

Academic degree: "Academic Expert for Health Information Management";

Workload: 60 ECTS credits

at

UMIT - University for Health Sciences, Medical Informatics and Technology

Version: July 2nd, 2018



Tab. 1: Module Overview - University Course "Health Information Management"

Semester	Module name	ECTS credits total	Contact studies & individual self- studies (ECTS credits)	Guided self- studies ¹ (ECTS credits)	Virtual interaction time ² (UE)
	A Professional Project Management	6	1	5	60
1. Semester	B IT-assisted Process Management in Healthcare	6	1	5	60
	D Clinical Decision-Making and Organization in Healthcare	6	1	5	60
	TOTAL	18	3	15	180
	E IT and Information Management in Healthcare	6	1	5	60
2. Semester	F eHealth and Electronic Health Records	6	1	5	60
	G Clinical Classification Systems and Semantic Interoperability	6	1	5	60
	TOTAL	18	3	15	180
3. Semester	H Presentation and Communication	6	1	5	60
	I On-the-job Internship	10	1	9	20
	J Thesis and Final Examination	8	1	7	20
	TOTAL	24	3	21	100
TOTAL		60			

¹ Working on predefined work assignments, feedback by lecturers and/or study group

 $^{^2}$ Virtual interaction time = learning activities in virtual space, in interaction with fellow students and teachers; 1 UE = 45 min.



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Module name	Module: A
Professional Project Management (Compulsory Module)	Semester: 1
Contents of the module	Course code: 29N001
 Success and failure factors for eHealth projects Benefits and unintended consequences of eHealth Project scope definition Initiation, planning and close-down of projects Project organization and project environment analysis Stakeholder analysis and risk analysis Change management theories for eHealth projects 	Group size: 30 Type of course: Lecture with practical exercise Compulsory attendance:
 Project management toolbox Frontiers topics in project management Exchange of individual project experiences 	No Course language: English
Learning outcomes of the module	Participation requirements: None
 are able to explain the significance of professional project management for the success of an eHealth project; are able to reflect on their own experiences and are able to communicate them to others; are able to systematically search for literature on eHealth project management and analyze and present it; are able to conduct a project environment analysis and are able to organize the project adequately and accordingly; are able to set up a project plan based on a project assignment; are acquainted with project monitoring methods and techniques; are able to explain why IT projects meet with resistance and what can be done to prevent it; are able to give a target-group-specific slide presentation. 	Exam information: Course with continuous assessment, oral or written examination Total ECTS credits of the module: 6 Contact studies and individual self-studies in ECTS credits: 1 Guided self-studies in ECTS credits: 5 Virtual interaction time in UE: 60 Qualification of the examiner: (Refer to the Study and Examination Regulations, as amended)
Literature/learning materials	Teacher:
Koplan S (2011): Project Management for Healthcare Information Technology. McGraw-Hill Education.	UnivProf. Dr. Elske Ammenwerth; UMIT
A list for further reading and teaching material (e.g. presentation, script) will be made available on UMIT's teaching and learning platform.	



Module name	Module: B
IT-assisted Process Management in Healthcare (Compulsory Module)	Semester: 1
Contents of the module	Course code:
	29N002
Systems analysisModeling and assessment of business processes	Group size: 30
 Specification of information systems 	Type of course:
 Selection of information systems Introduction, evaluation and operation of information systems 	Lecture with practical exercise
Core process of IT Service Management	Compulsory attendance: No
	Course language:
	English
Learning outcomes of the module	Participation requirements: None
Students	Exam information:
 are able to specify objectives and activities of system analysis, system specification, system selection, system introduction and system evaluation; 	Course with continuous assessment, written or oral examination
 are able to plan targeted system analysis and are able to choose the adequate methods to acquire information; are able to model and assess clinical processes in a formal 	Total ECTS credits of the module:
 business process model (BPMN); are able to describe the content of a target concept; know the essential steps related to system selection and tendering; 	Contact studies and individual self-studies in ECTS credits:
 are able to apply methods for systematically comparing offers; 	Guided self-studies in ECTS credits:
 are able to plan a system implementation and to develop an implementation concept; know the core activities in IT Service Management and can consider this knowledge in implementation projects. 	Virtual interaction time in UE: 60
consider this knowledge in implementation projects.	Qualification of the examiner:
	(Refer to the Study and Examination Regulations, as amended)
Literature/learning materials	Teacher:
Combi C (2017): Process Modeling and Management for Healthcare. CRC Press	AssProf. Dr. Werner Hackl; UMIT
A list for further reading and teaching material (e.g. presentation, script) will be made available on UMIT's teaching and learning platform.	



Module name	Module: D
Clinical Decision-Making and Organization in	Semester: 1
Healthcare (Compulsory Module)	
Contents of the module	Course code:
	29N004
Organization of social security systems	Group size: 30
Players in the healthcare systems	
 Impact of healthcare organization on eHealth projects 	Type of course:
 Current health policy discussions The clinical process of diagnostics and therapy 	Lecture with practical exercise
Methods of clinical decision-making	
Statistical basis of clinical decision-making	Compulsory attendance:
Principles of machine learning	No
- Trindpies of machine learning	Course language:
	English
Learning outcomes of the module	Participation requirements:
Learning outcomes of the module	None
Students	Exam information:
• are able to name social socurity system approaches:	
 are able to name social security system approaches; are able to describe the organization and the major players 	Course with continuous assessment, written or
in their national healthcare system;	oral examination
are able to reflect the financing of the healthcare system	Total ECTS credits of the
and how this affect national eHealth projects;	module:
 are able to report about, and comment on, current health 	6
policy discussions;	Contact studies and
 are able to present and explain the therapeutic, diagnostic 	individual self-studies in ECTS credits:
and nursing process;	1
 are familiar with clinical decision-making methods; 	Guided self-studies in ECTS
 understand the basis of machine learning. 	credits:
	5
	Virtual interaction time
	in UE: 60
	Qualification of the examiner:
	(Refer to the Study and
	Examination Regulations,
	as amended)
Literature/learning materials	Teacher:
Hunink MGM, Weinstein MC et al (2014). Decision Making in Health and	UnivProf. Dr. Harald
Medicine. Cambridge University Press.	Stummer, UnivProf. Dr.
A list for further reading and teaching material (e.g. presentation, script) will be made available on UMIT's teaching and learning platform.	Uwe Siebert; UMIT
made available on own is teaching and learning platform.	



Module name	Module: E
IT and Information Management in Healthcare	Semester: 2
(Compulsory Module)	
Contents of the module	Course code:
	29N005
 Strategical, tactical and operative information management in healthcare 	Group size: 30
Organization of IT management	Type of course:
 Typical modules and functionalities of hospital information systems 	Lecture with practical exercise
 Architectures of hospital information systems 	Compulsory attendance:
Modeling of hospital information systems	
 Communication server and other integrative approaches 	No
 Integration and interoperability of networked systems 	Course language:
Communication standards in health care	English
 Strategic IT planning for healthcare organizations 	
Learning outcomes of the module	Participation requirements: None
Students	None
 are able to explain the tasks and levels of information 	Exam information:
management;	Course with
• are able to explain to what extent information systems are	continuous assessment, written or
significant for the quality and efficiency of healthcare;	oral examination
 are able to model hospital information systems (3LGM); 	Total ECTS credits of the
 are aware of the key business challenges of a healthcare facility, as well as the supporting application systems; 	module:
 are able to describe the structure of an information system 	6
and can come up with proposals on its further development;	Contact studies and
are able to assess the degree of integration of a hospital	individual self-studies in ECTS credits:
information system;	1
 are able to define integration and interoperability; 	Guided self-studies in
 know standards for technical and semantic interoperability in healthcare and can describe fields of application, strengths 	ECTS credits: 5
and weaknesses (such as HL7, DICOM, IHE);	Virtual interaction time
■ are aware of the tasks and standards of strategic IT	in UE:
management;	60
 are able to describe the structure of a strategic IT plan; 	Qualification of the
 are able to apply theoretical concepts to solve practical 	examiner: (Refer to the Study and
problems of information management.	Examination
	Regulations, as amended)
Literature/learning meterials	,
Literature/learning materials	Teacher:
Alfred Winter, Reinhold Haux, Elske Ammenwerth, Birgit Brigl, Franziska Jahn: Health Information Systems: Architectures and Strategies (2011). New York:	UnivProf. Dr. Elske
Springer. 2. Auflage. Kapitel 1 - 6.	Ammenwerth; UMIT



Module name	Module: F
eHealth and Electronic Health Records (Compulsory	Semester: 2
Module)	0
Contents of the module	Course code: 29N006
 eHealth stakeholders and their interaction 	Group size:
 Institution-related and cross-facility electronic records in 	30
healthcare	Type of course:
Telemedical applications Current standards, rules and heat practices for networking	Lecture with practical
 Current standards, rules and best practices for networking in healthcare 	exercise
 Principles of information security for cross-facility exchange 	Compulsory attendance:
of health data	No
Cross-facility information system architectures	Course language:
Case examples of national eHealth approaches	English
 Current discussion on electronic health records 	
	Participation requirements:
Learning outcomes of the module	None
Students	Exam information:
	Course with continuous
 are aware of important stakeholders in healthcare and their interaction; 	assessment, written or oral examination
are able to differentiate between the various technical terms	
and can define them;	Total ECTS credits of the module:
 are able to describe the content of international standards 	6
and can explain prevalence, strengths and weaknesses	Contact studies and
(e.g. IHE); ■ are able to name architectures for the realization of	individual self-studies in ECTS credits:
electronic health records and can discuss them critically;	1
 are able to describe the current legal, political and technical 	Guided self-studies in ECTS
status of national eHealth approaches;	credits:
 are aware of the basic principles of information security in context with the cross-facility exchange of health data and 	Virtual interaction time
can assess them;	in UE:
 are able to interpret models of eHealth architectures and 	60
can reflect critically regarding implementation and potential benefits.	Qualification of the examiner:
perients.	(Refer to the Study and Examination Regulations,
	as amended)
Literature/learning materials	Teacher:
Günter Eysenbach (2001). What is eHealth? J Med Internet Res. 3(2): e20.	a.o. UnivProf. Dr.
Hans Oh et al. (2005). What is eHealth? A systematic review of published definition. J Med Internet Res. 7(4): e1.	Alexander Hörbst; UMIT
A list for further reading and teaching material (e.g. presentation, script)	
will be made available on UMIT's teaching and learning platform.	



Module name	Module: G
Clinical Classification Systems and Semantic Interoperability (Compulsory Module)	Semester: 2
Contents of the module	Course code: 29N007
 Significance and challenges of clinical documentation Standardization and structuring of clinical documentation 	Group size: 30
 Structure of typical medical and nursing classification systems Types of clinical documentation systems 	Type of course: Lecture with practical exercise
 Planning of clinical documentation systems Clinical and epidemiological registers Classification systems and semantic interoperability 	Compulsory attendance:
	Course language: English
Learning outcomes of the module	Participation requirements: None
Students are able to define the basic concepts of clinical documentation correctly and can explain them by using examples;	Exam information: Course with continuous assessment, written or oral examination
 are able to describe clinical documentation systems with regard to their basic characteristics (in particular aims, structure, content, degree of structuring and standardization); 	Total ECTS credits of the module:
 are able to systematically search for literature on clinical classification systems (e.g. ICD, NANDA, SNOMED), analyze and present it; 	Contact studies and individual self-studies in ECTS credits:
 are able to explain the aims and basic principles of common clinical classification systems and are able to choose a classification system to address a specific problem; 	Guided self-studies in ECTS credits:
 are able to systematically plan a documentation system to address a specific documentation problem; are able to discuss critically the area of conflict between costs and benefit of clinical documentation; are able to explain how classification systems can support semantic interoperability. 	Virtual interaction time in UE:
	Qualification of the examiner: (Refer to the Study and Examination Regulations, as amended)
Literature/learning materials	Teacher:
Florian Leiner, Wilhelm Gaus (2011). Medical Data Management. Springer. A list for further reading and teaching material (e.g. presentation, script) will be made available on UMIT's teaching and learning platform.	Dr. Renate Ranegger



Module name	A4 / / II
	Module: H
Presentation and Communication (Compulsory Module)	Semester: 3
Contents of the module	Course code: 29N008
 Planning and structuring of an oral presentation 	Group size:
 Target-group-adequate presentation techniques Use of presentation aids 	30
Content visualization	Type of course:
Effective delivery of a presentationHandling nervousness	Lecture with practical exercise
Communication models and communication stylesDiscussion and questioning techniques	Compulsory attendance:
	Course language:
	English
Learning outcomes of the module	Participation requirements: None
Students	Exam information:
 are aware of the significance of communication styles; are able to use discussion and questioning techniques adequately according to context; 	Course with continuous assessment, written or oral examination
 are able to structure and visualize an oral presentation adequately; 	Total ECTS credits of the module:
 are able to prepare an oral presentation which is target- 	Contact studies and
group-oriented; are able to hold an oral presentation self-confidently and	individual self-studies in ECTS credits:
convincingly.	1
	Guided self-studies in ECTS credits:
	3
	Virtual interaction time in UE: 60
Literature/learning materials	Qualification of the examiner:
A list for further reading and teaching material (e.g. presentation, script) will be made available on UMIT's teaching and learning platform.	(Refer to the Study and Examination Regulations, as amended)
	Teacher: Birgit Pitscheider, M.Sc.



Module name	Module: I
On-the-job Internship (Compulsory Module)	Semester: 3
Contents of the module Identification of the practical problems of information	Course code: 29N009
management Transfer of acquired techniques and approaches into	Group size: 30
practice	Type of course:
Literature analysisDesign and implementation of a solutionTime management	Lecture with practical exercise
Problem management	Compulsory attendance:
	Course language:
	English
Learning outcomes of the module	Participation requirements: None
Students	Exam information:
 are able to identify a practical problem of information management in health care; are able to put the acquired techniques and approaches into practice; are able to conceptualize a project based on a problem-solving approach and implement it; 	Grading of the examination performance pursuant to § 19 of the Study and Examination Regulations, as amended
 are able to carry out the project on-time and on-target and are able to tackle emerging problems; are able to deal in-depth with an information management 	Total ECTS credits of the module:
 subject; are able to include specialist literature into the problem-solving process; 	Contact studies and individual self-studies in ECTS credits:
 are able to communicate with other specialists and specialist groups during their internship; are able to reflect critically on the acquired knowledge. 	Guided self-studies in ECTS credits:
	Virtual interaction time in UE:
Literature/learning materials	Qualification of the examiner:
Internship Guideline A list for further reading and teaching material (e.g. report templates) will be made available on UMIT's teaching and learning platform.	(Refer to the Study and Examination Regulations, as amended)
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Contents of the module Transfer of acquired techniques and approaches into practice Literature analysis Solution concept and implementation Time management Problem management Written and oral presentation Defense of own findings Reflection of the acquired knowledge Learning outcomes of the module Participation requirements: Compulsory attendance: Lecture with practical Examination: Written and oral examination: Written and oral examination: Total ECTS credits of the module: Literature/learning material (e.g. presentation templates) will be made available on UMIT's teaching and learning Course: 29N010 Qualification of the examiner: (Refer to the Study and Examination Regulations.		
Contents of the module Transfer of acquired techniques and approaches into practice Literature analysis Solution concept and implementation Time management Problem management Written and oral presentation Pefense of own findings Reflection of the acquired knowledge Learning outcomes of the module Students deal in-depth with an information management subject; are able to involve specialist literature into the problem-solving process and can establish cross-references; are able to prepare results in written form in a concise and structured manner; are able to reflect critically on the acquired knowledge. Literature/learning materials A list for further reading and teaching material (e.g. presentation templates) will be made available on UMIT's teaching and learning Course code: 29N010 Group size: Lecture with practical Group size: Lecture with practical Group size: Lecture with practical Exemplates Compulsory attendance: Lecture with practical exercise Compulsory attendance: Ecam information: Written and oral examination: Written and oral examination: Total ECTS credits of the module: 8 (final paper: 6; final oral examination: 2) Contact studies in ECTS credits: 1 Guided self-studies in ECTS credits: 7 Virtual interaction time & attendance time in UE: 20 Literature/learning materials A list for further reading and teaching material (e.g. presentation templates) will be made available on UMIT's teaching and learning (Refer to the Study and Examination Regulations.)	Module name	
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Transfer of acquired techniques and approaches into practice Literature analysis Solution concept and implementation Time management Problem management Written and oral presentation Defense of own findings Reflection of the acquired knowledge Learning outcomes of the module Students deal in-depth with an information management subject; are able to involve specialist literature into the problem-solving process and can establish cross-references; are able to prepare results in written form in a concise and structured manner; are able to explain and defend their findings; are able to reflect critically on the acquired knowledge. Literature/learning materials A list for further reading and teaching material (e.g. presentation templates) will be made available on UMIT's teaching and learning Transfer of acquired knowleds and approaches into practical groups into practical groups into practical groups into practical groups into practical exercises Compulsory attendance: Lecture with practical exercise Compulsory attendance: Exam information: Written and oral presents: Completion of modules A-I Exam information: Written and oral presents: Compulsory attendance: Exam information: Written and oral presents: Compulsory attendance: Exam information: Written and oral presents: Completion of modules A-I Exam information: Written and oral presents: Compulsory attendance: Compulsory attendance: Exam information: Written and oral presents: Compulsory attendance: Exam information: Written and oral presents: Compulsory attendance: Exam information: Written and oral presents: Compulsory attendance: Lecture with practical exercise Compulsory attendance: Lecture with practical exercise. Compulsory attendance: Lecture with practical exercise. Compulsory attendance: Exam information: Written and oral presents: Compulsory attendance: Lecture with practical exercise. Compulsory attendance: Lecture with practical exercise. Compulsory attendance: Lecture with practical exercise. Compulsory attendanc	(Compulsory Module)	
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Literature analysis Solution concept and implementation Time management Written and oral presentation Defense of own findings Reflection of the acquired knowledge Learning outcomes of the module Students deal in-depth with an information management subject; are able to involve specialist literature into the problemsolving process and can establish cross-references; are able to prepare results in written form in a concise and structured manner; are able to present results in a clear and concise manner; are able to present results in a clear and concise manner; are able to reflect critically on the acquired knowledge. Literature/learning materials A list for further reading and teaching material (e.g. presentation templates) will be made available on UMIT's teaching and learning Type of course: Lecture with practical exercise Compulsory attendance: Exam information: Written and oral examination: Written and oral examination: Total ECTS credits of the module: 8 (final paper: 6: final oral examination: 2) Contact studies and individual self-studies in ECTS credits: Type of course: Lecture with practical exercise Compulsory attendance: Exam information: Written and oral examination: Written and oral examination: Total ECTS credits of the module: 1 Guide self-studies in ECTS credits: Type of course: Lecture with practical exercises Compulsory attendance: Lecture with practical exercise Compulsory attendance: Lecture with practical exercises	 Transfer of acquired techniques and approaches into 	Group size:
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Problem management Written and oral presentation Defense of own findings Reflection of the acquired knowledge Reflection of the acquired knowledge Reflection of the acquired knowledge Reflection of the acquired knowledge Reflection of the acquired knowledge Reflection of the acquired knowledge Reflection of the acquirements: Completion of modules A-I Written and oral prevails in the problem-solving process and can establish cross-references; are able to prepare results in written form in a concise and structured manner; are able to present results in a clear and concise manner; are able to explain and defend their findings; are able to reflect critically on the acquired knowledge. Reflection of the acquirements: Completion of modules A-I Written and oral prevamination: Written and oral prevamination: Written and oral prevamination: **Completion of modules A-I **Written and oral prevamination: **Contact studies of the module: **Contact studies and individual self-studies in ECTS credits: **Contact studies and individual self-studies in ECTS credits: **Total ECTS credits: **Completion of the examination: **Qualification of the examiner: **Qualification of the examination Regulations, and learning a		<i>"</i>
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Defense of own findings Reflection of the acquired knowledge Course language: English Participation requirements: Completion of modules A-I Students Participation requirements: Completion of modules A-I Exam information: Written and oral examination: Written and oral examination: I are able to involve specialist literature into the problem-solving process and can establish cross-references; are able to prepare results in written form in a concise and structured manner; are able to present results in a clear and concise manner; are able to explain and defend their findings; are able to reflect critically on the acquired knowledge. Rocourse language: Exam information: Written and oral examination: (final paper: 6; final oral examination: 2) Contact studies and individual self-studies in ECTS credits: 1 Guided self-studies in ECTS credits: 7 Virtual interaction time & attendance time in UE: 20 Literature/learning materials A list for further reading and teaching material (e.g. presentation templates) will be made available on UMIT's teaching and learning	<u>~</u>	
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Learning outcomes of the module Students I deal in-depth with an information management subject; I are able to involve specialist literature into the problem-solving process and can establish cross-references; I are able to prepare results in written form in a concise and structured manner; I are able to present results in a clear and concise manner; I are able to explain and defend their findings; I are able to reflect critically on the acquired knowledge. Contact studies of the module		No
Learning outcomes of the module Students - deal in-depth with an information management subject; - are able to involve specialist literature into the problem-solving process and can establish cross-references; - are able to prepare results in written form in a concise and structured manner; - are able to present results in a clear and concise manner; - are able to explain and defend their findings; - are able to reflect critically on the acquired knowledge. Contact studies and individual self-studies in ECTS credits: - 1 Guided self-studies in ECTS credits: - 1 Guided self-studies in ECTS credits: - 7 Virtual interaction time & attendance time in UE: - 20 Literature/learning materials A list for further reading and teaching material (e.g. presentation templates) will be made available on UMIT's teaching and learning	remotion of the adquired knowledge	Course language:
Learning outcomes of the module Students deal in-depth with an information management subject; are able to involve specialist literature into the problem-solving process and can establish cross-references; are able to prepare results in written form in a concise and structured manner; are able to explain and defend their findings; are able to reflect critically on the acquired knowledge. Total ECTS credits of the module: 8 (final paper: 6; final oral examination: 2) Contact studies and individual self-studies in ECTS credits: 1 Guided self-studies in ECTS credits: 7 Virtual interaction time & attendance time in UE: 20 Literature/learning materials A list for further reading and teaching material (e.g. presentation templates) will be made available on UMIT's teaching and learning		
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·	platform.	
Teacher:		
Various UMIT lecturers		Various UMIT lecturers