

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)
1. Semester	A Professional Project Management	6	1	5	60
	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
2. Semester	E IT and Information Management in Healthcare	6	1	5	60
	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.

<p>Module name</p> <p>Professional Project Management (Compulsory Module)</p>	<p>Module: A</p> <p>Semester: 1</p>
<p>Contents of the module</p> <ul style="list-style-type: none"> ▪ 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 ▪ Project management toolbox ▪ Frontiers topics in project management ▪ Exchange of individual project experiences 	<p>Course code: 29N001</p> <p>Group size: 30</p> <p>Type of course: Lecture with practical exercise</p> <p>Compulsory attendance: No</p> <p>Course language: English</p>
<p>Learning outcomes of the module</p> <p>Students</p> <ul style="list-style-type: 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. 	<p>Participation requirements: None</p> <p>Exam information: Course with continuous assessment, oral or written examination</p> <p>Total ECTS credits of the module: 6</p> <p>Contact studies and individual self-studies in ECTS credits: 1</p> <p>Guided self-studies in ECTS credits: 5</p> <p>Virtual interaction time in UE: 60</p> <p>Qualification of the examiner: (Refer to the Study and Examination Regulations, as amended)</p>
<p>Literature/learning materials</p> <p>Koplan S (2011): Project Management for Healthcare Information Technology. McGraw-Hill Education.</p> <p>A list for further reading and teaching material (e.g. presentation, script) will be made available on UMIT's teaching and learning platform.</p>	<p>Teacher:</p> <p>Univ.-Prof. Dr. Elske Ammenwerth; UMIT</p>

<p>Module name</p> <p>IT-assisted Process Management in Healthcare (Compulsory Module)</p>	<p>Module: B</p> <p>Semester: 1</p>
<p>Contents of the module</p> <ul style="list-style-type: none"> ▪ Systems analysis ▪ Modeling and assessment of business processes ▪ Specification of information systems ▪ Selection of information systems ▪ Introduction, evaluation and operation of information systems ▪ Core process of IT Service Management 	<p>Course code: 29N002</p> <p>Group size: 30</p> <p>Type of course: Lecture with practical exercise</p> <p>Compulsory attendance: No</p> <p>Course language: English</p>
<p>Learning outcomes of the module</p> <p>Students</p> <ul style="list-style-type: none"> ▪ are able to specify objectives and activities of system analysis, system specification, system selection, system introduction and system evaluation; ▪ 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 business process model (BPMN); ▪ are able to describe the content of a target concept; ▪ know the essential steps related to system selection and tendering; ▪ are able to apply methods for systematically comparing offers; ▪ 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. 	<p>Participation requirements: None</p> <p>Exam information: Course with continuous assessment, written or oral examination</p> <p>Total ECTS credits of the module: 6</p> <p>Contact studies and individual self-studies in ECTS credits: 1</p> <p>Guided self-studies in ECTS credits: 5</p> <p>Virtual interaction time in UE: 60</p> <p>Qualification of the examiner: (Refer to the Study and Examination Regulations, as amended)</p>
<p>Literature/learning materials</p> <p>Combi C (2017): Process Modeling and Management for Healthcare. CRC Press</p> <p>A list for further reading and teaching material (e.g. presentation, script) will be made available on UMIT's teaching and learning platform.</p>	<p>Teacher: Ass.-Prof. Dr. Werner Hackl; UMIT</p>

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

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

<p>Module name</p> <p>eHealth and Electronic Health Records (Compulsory Module)</p>	<p>Module: F</p> <p>Semester: 2</p>
<p>Contents of the module</p> <ul style="list-style-type: none"> ▪ eHealth stakeholders and their interaction ▪ Institution-related and cross-facility electronic records in healthcare ▪ Telemedical applications ▪ Current standards, rules and best practices for networking in healthcare ▪ Principles of information security for cross-facility exchange of health data ▪ Cross-facility information system architectures ▪ Case examples of national eHealth approaches ▪ Current discussion on electronic health records 	<p>Course code: 29N006</p> <p>Group size: 30</p> <p>Type of course: Lecture with practical exercise</p> <p>Compulsory attendance: No</p> <p>Course language: English</p>
<p>Learning outcomes of the module</p> <p>Students</p> <ul style="list-style-type: none"> ▪ are aware of important stakeholders in healthcare and their interaction; ▪ are able to differentiate between the various technical terms and can define them; ▪ are able to describe the content of international standards and can explain prevalence, strengths and weaknesses (e.g. IHE); ▪ are able to name architectures for the realization of electronic health records and can discuss them critically; ▪ are able to describe the current legal, political and technical status of national eHealth approaches; ▪ are aware of the basic principles of information security in context with the cross-facility exchange of health data and can assess them; ▪ are able to interpret models of eHealth architectures and can reflect critically regarding implementation and potential benefits. 	<p>Participation requirements: None</p> <p>Exam information: Course with continuous assessment, written or oral examination</p> <p>Total ECTS credits of the module: 6</p> <p>Contact studies and individual self-studies in ECTS credits: 1</p> <p>Guided self-studies in ECTS credits: 5</p> <p>Virtual interaction time in UE: 60</p> <p>Qualification of the examiner: (Refer to the Study and Examination Regulations, as amended)</p>
<p>Literature/learning materials</p> <p>Günter Eysenbach (2001). What is eHealth? J Med Internet Res. 3(2): e20. Hans Oh et al. (2005). What is eHealth? A systematic review of published definition. J Med Internet Res. 7(4): e1. A list for further reading and teaching material (e.g. presentation, script) will be made available on UMIT's teaching and learning platform.</p>	<p>Teacher: a.o. Univ.-Prof. Dr. Alexander Hörbst; UMIT</p>

<p>Module name</p> <p>Clinical Classification Systems and Semantic Interoperability (Compulsory Module)</p>	<p>Module: G</p> <p>Semester: 2</p>
<p>Contents of the module</p> <ul style="list-style-type: none"> ▪ Significance and challenges of clinical documentation ▪ Standardization and structuring of clinical documentation ▪ Structure of typical medical and nursing classification systems ▪ Types of clinical documentation systems ▪ Planning of clinical documentation systems ▪ Clinical and epidemiological registers ▪ Classification systems and semantic interoperability 	<p>Course code: 29N007</p> <p>Group size: 30</p> <p>Type of course: Lecture with practical exercise</p> <p>Compulsory attendance: No</p> <p>Course language: English</p>
<p>Learning outcomes of the module</p> <p>Students</p> <ul style="list-style-type: none"> ▪ are able to define the basic concepts of clinical documentation correctly and can explain them by using examples; ▪ are able to describe clinical documentation systems with regard to their basic characteristics (in particular aims, structure, content, degree of structuring and standardization); ▪ are able to systematically search for literature on clinical classification systems (e.g. ICD, NANDA, SNOMED), analyze and present it; ▪ 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; ▪ 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. 	<p>Participation requirements: None</p> <p>Exam information: Course with continuous assessment, written or oral examination</p> <p>Total ECTS credits of the module: 6</p> <p>Contact studies and individual self-studies in ECTS credits: 1</p> <p>Guided self-studies in ECTS credits: 5</p> <p>Virtual interaction time in UE: 60</p> <p>Qualification of the examiner: (Refer to the Study and Examination Regulations, as amended)</p>
<p>Literature/learning materials</p> <p>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.</p>	<p>Teacher: Dr. Renate Ranegger</p>

<p>Module name</p> <p>Presentation and Communication (Compulsory Module)</p>	<p>Module: H</p> <p>Semester: 3</p>
<p>Contents of the module</p> <ul style="list-style-type: none"> ▪ Planning and structuring of an oral presentation ▪ Target-group-adequate presentation techniques ▪ Use of presentation aids ▪ Content visualization ▪ Effective delivery of a presentation ▪ Handling nervousness ▪ Communication models and communication styles ▪ Discussion and questioning techniques 	<p>Course code: 29N008</p> <p>Group size: 30</p> <p>Type of course: Lecture with practical exercise</p> <p>Compulsory attendance: No</p> <p>Course language: English</p>
<p>Learning outcomes of the module</p> <p>Students</p> <ul style="list-style-type: none"> ▪ are aware of the significance of communication styles; ▪ are able to use discussion and questioning techniques adequately according to context; ▪ are able to structure and visualize an oral presentation adequately; ▪ are able to prepare an oral presentation which is target-group-oriented; ▪ are able to hold an oral presentation self-confidently and convincingly. 	<p>Participation requirements: None</p> <p>Exam information: Course with continuous assessment, written or oral examination</p> <p>Total ECTS credits of the module: 6</p> <p>Contact studies and individual self-studies in ECTS credits: 1</p> <p>Guided self-studies in ECTS credits: 5</p> <p>Virtual interaction time in UE: 60</p>
<p>Literature/learning materials</p> <p>A list for further reading and teaching material (e.g. presentation, script) will be made available on UMIT's teaching and learning platform.</p>	<p>Qualification of the examiner: (Refer to the Study and Examination Regulations, as amended)</p> <p>Teacher: Birgit Pitscheider, M.Sc.</p>

Module name	<i>Module: I</i>
On-the-job Internship (Compulsory Module)	<i>Semester: 3</i>
Contents of the module <ul style="list-style-type: none"> ▪ Identification of the practical problems of information management ▪ Transfer of acquired techniques and approaches into practice ▪ Literature analysis ▪ Design and implementation of a solution ▪ Time management ▪ Problem management 	<i>Course code:</i> 29N009
	<i>Group size:</i> 30
	<i>Type of course:</i> Lecture with practical exercise
	<i>Compulsory attendance:</i> No
	<i>Course language:</i> English
	<i>Participation requirements:</i> None
Learning outcomes of the module Students <ul style="list-style-type: none"> ▪ 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; ▪ 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 subject; ▪ are able to include specialist literature into the problem-solving process; ▪ are able to communicate with other specialists and specialist groups during their internship; ▪ are able to reflect critically on the acquired knowledge. 	<i>Exam information:</i> Grading of the examination performance pursuant to § 19 of the Study and Examination Regulations, as amended
	<i>Total ECTS credits of the module:</i> 10
	<i>Contact studies and individual self-studies in ECTS credits:</i> 1
	<i>Guided self-studies in ECTS credits:</i> 9
	<i>Virtual interaction time in UE:</i> 20
	<i>Qualification of the examiner:</i> (Refer to the Study and Examination Regulations, as amended)
Literature/learning materials 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.	<i>Teacher:</i> Various lecturers

<p>Module name</p> <p>Final Paper and Final Oral Examination (Compulsory Module)</p>	<p>Module: J Semester: 3</p>
<p>Contents of the module</p> <ul style="list-style-type: none"> ▪ 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 	<p>Course code: 29N010</p> <p>Group size: 30</p> <p>Type of course: Lecture with practical exercise</p> <p>Compulsory attendance: No</p> <p>Course language: English</p>
<p>Learning outcomes of the module</p> <p>Students</p> <ul style="list-style-type: none"> ▪ 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. 	<p>Participation requirements: Completion of modules A-I</p> <p>Exam information: Written and oral examination</p> <p>Total ECTS credits of the module: 8 (final paper: 6; final oral examination: 2)</p> <p>Contact studies and individual self-studies in ECTS credits: 1</p> <p>Guided self-studies in ECTS credits: 7</p> <p>Virtual interaction time & attendance time in UE: 20</p>
<p>Literature/learning materials</p> <p>A list for further reading and teaching material (e.g. presentation templates) will be made available on UMIT's teaching and learning platform.</p>	<p>Qualification of the examiner: (Refer to the Study and Examination Regulations, as amended)</p> <p>Teacher: Various UMIT lecturers</p>