

University course Health Information Management

at

**UMIT-Private University for Health Sciences, Medical
Informatics and Technology**

§ 1 Study-specific Regulations

- (1) Pursuant to Art. I § 1 subpar. 2, the following „Study-specific Regulations“ were issued by the competent Senate-appointed Curriculum Committee for the university course „Health Information Management“ per resolution on 08.11.2016 and by UMIT’s Senate per resolution on 14.03.2017. They are an integral part of the Study and Examination Regulations, as amended, and shall take effect on the day subsequent to their announcement.
- (2) The „Study-specific Regulations“ include:
 - § 2 Qualification profile
 - § 3 Specific admission requirements
 - § 4 Study year, study achievements
 - § 5 Curriculum (i.a. description of modules and courses) as well as
 - § 6 Specific requirements for theses and final examinations

§ 2 Qualification profile

- (1) The aim of the university course is to provide extra-occupational further training for the practical use in the field of healthcare IT and information management in healthcare.
- (2) The graduates have a solid knowledge of the basics of information management in healthcare and have the ability to use this knowledge in their professional environment. They are trained for qualified positions in the field of information management in healthcare.
- (3) The graduates shall be able to:
 - systematically analyze and evaluate processes within healthcare facilities as well as interinstitutional, to develop IT-based support and to participate in its implementation.
 - plan clinical documentation and information systems institution-related as well as interinstitutional, and to participate in their implementation.
 - organize projects to plan, analyze, implement, evaluate and monitor modern health information systems and to implement them in interdisciplinary project teams.
 - work competently, target-oriented and responsible in interdisciplinary teams or to lead them, and, in doing so, to communicate positions and results professionally and to reason decisions.
- (4) The university course offers graduates a variety of application-oriented professional activities in healthcare facilities and in the health IT industry, in particular in hospitals and care institutions, in software and medical technology industry, in consulting companies or in social security institutions.

§ 3 Specific admission requirements

- (1) In addition to the admission requirements laid down in Art. I § 4, the following specific requirements for the university course „Health Information Management“ shall be met:
 - a) university entrance qualification certificate (or equivalent) and at least three years of relevant work experience, or
 - b) relevant vocational training or finished VET school (or equivalent) and at least five years of relevant work experience.
- (2) The fulfilment of these formal admission requirements does not constitute a right to admission to this university course. Following the assessment of the above mentioned

admission requirements, an individual entrance interview will be conducted with each candidate which last approx. 30 minutes and shall examine the previous experiences and motivation of the candidate. The entrance interview shall be conducted by the Study and Examination Board or any representative authorized by it; the interview can be conducted personally, via telephone or online.

The results of the assessment of the above mentioned admission requirements and the entrance interview shall be recorded. The Study and Examination Board shall then decide, on the basis of the provided application documents, whether the candidate is qualified for the studies due to his/her proven qualifications and specific previous experiences and motivation.

- (3) In addition, the Study and Examination Board can demand a supplementary examination in individual cases as per Art. I § 4 subpar. 5. This examination must be completed within the first study year.

§ 4 Study year, study achievements

- (1) Lectures for the university course „Health Information Management“ take place in the period from 01 September to 30 July every year.
- (2) All study achievements shall be specified in the Module Manual and shall be expressed in ECTS credits. The sum of ECTS credits for a successfully completed university course is 60 ECTS credits.
- (3) The Study and Examination Board shall agree on the respective compulsory examination announcements at the beginning of the semester.

§ 5 Curriculum

- (1) The standard period of study, including preparing the final paper and passing all examinations, is three semesters. The maximum period of study is five semesters. Upon request, the Study and Examination Board can extend the maximum period of study by a maximum of one semester.
- (2) The university course is divided in modules and is organized in such a way that it can be combined with a professional career.
- (3) The modules and courses are described in detail in Annex 1: „Module Manual for the University Course „Health Information Management“.
- (4) The university course is to be completed online. Times of absence or absence periods shall be made up for in form of individually agreed on supplementary work assignments. The Study and Examination Board shall take a decision thereon upon request.
- (5) The university course includes a compulsory on-the-job internship (Module I). This internship foresees the identification and conceptual or practical solution of a relevant problem in the student's own professional field. The selected problem shall be suitable to choose and apply information management methods and tools, such as discussed in the lectures, in the scope of a practical example and to reflect their use critically. These aspects will be processed in form of a written final paper.
- (6) The internship will be guided by a supervisor who shall be approved by the competent Study and Examination Board.
- (7) The internship lasts at least four months and no more than six months from the date of notification to the competent Study and Examination Board. Upon request, the Study and Examination Board can grant a one-time extension of the internship by three months. The successful completion of the on-the-job internship will be rewarded with ten ECTS credits. The internship is graded „successfully completed“ or „not successfully completed“ pursuant to § 19 of UMIT's Study and Examination Regulations, as amended.
- (8) The academic title „Academic Expert for Health Information Management“ shall be awarded when all modules, including the written final paper and the oral final examination, have been successfully completed.

§ 6 Specific requirements for theses and final examinations

- (1) The written final paper, rewarded with 6 ECTS credits, shall be completed in the third semester. It comprises a report on the on-the-job internship (Module I).
- (2) The topic and the aim of the final paper shall be announced to the respective Study and Examination Board and are subject to approval. The final paper shall be completed within a maximum of six months. Upon request, the Study and Examination Board can grant a one-time extension of this deadline by a maximum of six months.
- (3) The oral final examination, rewarded with 2 ECTS credits, is open to all members of the university. It consists of a talk about the accomplished work and the subsequent discussion, guided by two examiners. It lasts for at least 30 minutes; it may not last for more than 45 minutes.

Hall in Tirol, 14.03.2017

Univ.-Prof. Dr. Elske Ammenwerth

Head of the Study and Examination Board
„Academic Expert for Health Information Management“

Annex 1:

Module Manual University Course „Health Information Management“

Module Manual

Health Information Management

(Academic degree: “Academic Expert for Health Information Management”;

Workload: 60 ECTS credits)

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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
	C Applied Informatics ³ or	6	1	5	60
	D Clinical Decision-Making and Organization in Healthcare ³	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 (6/2)	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.

³ Depending on their previous qualification, students shall attend the module „Applied Informatics“ or the module „Clinical Decision-Making and Organization in Healthcare“.

Module name	Module: A Semester: 1
Professional Project Management (Compulsory Module)	
Contents of the module <ul style="list-style-type: none"> Success factors for projects Initiation and planning of projects Project assignment and project objectives Project organization and project environment analysis Project plan Implementation of projects Team and meeting management Finalization of projects Exchange of individual project experiences 	Course code: 29N001
	Group size: 30
	Type of course: Lecture with practical exercise
	Compulsory attendance: No
	Course language: German
Learning outcomes of the module	Participation requirements: None
Students <ul style="list-style-type: none"> are able to explain the significance of professional project management for the success of a project; are able to reflect on their own experiences and are able to communicate them to others; are able to draft a full project assignment or can claim missing contents; are able to define project objectives precisely and verifiably and are aware of the significance of precise target setting; 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 able to plan team-building measures for the project team; are able to plan effective team meetings; 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: Univ.-Prof. Dr. Elske Ammenwerth; UMIT
Koplan S (2011): Project Management for Healthcare Information Technology. McGraw-Hill Education. 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 Semester: 1
IT-assisted Process Management in Healthcare (Compulsory Module)	
Contents of the module <ul style="list-style-type: none"> ▪ System analysis and system evaluation ▪ Business process modeling ▪ Specification of information systems ▪ Tendering and selection of information systems ▪ Introduction, evaluation and operation of information systems ▪ Core process of IT Service Management (ITSM) 	Course code: 29N002
	Group size: 30
	Type of course: Lecture with practical exercise
	Compulsory attendance: No
	Course language: German
Learning outcomes of the module Students <ul style="list-style-type: none"> ▪ are able to specify objectives and activities of system analysis, system evaluation, system specification, system selection; ▪ are able to plan targeted system analysis and are able to choose the adequate methods to acquire information; ▪ are able to plan observation and interview techniques systematically; ▪ are able to model and assess clinical processes in a formal target-oriented way; ▪ are able to describe the content of a target concept; ▪ are able to specify the system requirements of an IT system in the requirements document; ▪ 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. 	Participation requirements: None
	Exam information: Course with continuous assessment, written or oral 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 Combi C (2017): Process Modeling and Management for Healthcare. CRC Press A list for further reading and teaching material (e.g. presentation, script) will be made available on UMIT's teaching and learning platform.	Teacher: Ass.-Prof. Dr. Werner Hackl; UMIT

Module name	Module: C
Applied Informatics (Elective Module)	Semester: 1
Contents of the module <ul style="list-style-type: none"> Set-up and functioning of computers Computer networks and internet Relational database modeling Database language SQL Overview of the software development process 	Course code: 29N003
	Group size: 30
	Type of course: Lecture with practical exercise
	Compulsory attendance: No
	Course language: German
Learning outcomes of the module	Participation requirements: None
Students <ul style="list-style-type: none"> know the key components of computers; know the basic tasks of an operating system and how it works; know the basic steps for the translation and execution of programs; know the basic components and the operating principles of computer networks; know the ISO/OSI reference model; are familiar with the basic functioning of important internet-based services like WWW and Cloud Computing; know characteristics and application areas of the relational database model; are able to model relational databases; know the normal forms of relational databases and know how to normalize a relational database; are able to correctly specify and set up a relational database for a given problem; are able to generate inquiries in SQL and interpret the results; are able to define the structure of a database with SQL; are aware of the phases of the software development process and the respective activities and results; are familiar with UML structure and behavior diagrams. 	Exam information: Course with continuous assessment, written or oral 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:
A list for further reading and teaching material (e.g. presentation, script) will be made available on UMIT's teaching and learning platform.	DI Clemens Sauerwein, M.Sc.; LFUI

Module name	Module: D Semester: 1
Clinical Decision-Making and Organization in Healthcare (<i>Elective Module</i>)	
Contents of the module <ul style="list-style-type: none"> ▪ Social security systems ▪ Organization und financing of the healthcare system ▪ Players in the Austrian healthcare system ▪ Financing systems (in particular the Austrian DRG system) ▪ Medical terminology ▪ The clinical process of diagnostics and therapy ▪ The nursing process ▪ Methods of clinical decision-making ▪ Principles of medication therapy ▪ Current health policy discussions 	Course code: 29N004
	Group size: 30
	Type of course: Lecture with practical exercise
	Compulsory attendance: No
	Course language: German
Learning outcomes of the module Students <ul style="list-style-type: none"> ▪ are able to name various social security system approaches; ▪ are able to describe the organization and the major players in the Austrian healthcare system; ▪ are able to reflect the financing of the Austrian healthcare system; ▪ are able to give details on the Austrian DRG system and can define the challenges and limits of the system; ▪ understand the key terms of medical and nursing terminology; ▪ are able to present and explain the diagnostic as well as the nursing process; ▪ are able to explain the principles of medication therapy; ▪ are familiar with clinical decision-making methods; ▪ are able to report about, and comment on, current health policy discussions. 	Participation requirements: None
	Exam information: Course with continuous assessment, written or oral 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:
Hunink MGM, Weinstein MC et al (2014). Decision Making in Health and Medicine. Cambridge University Press. A list for further reading and teaching material (e.g. presentation, script) will be made available on UMIT's teaching and learning platform.	Univ.-Prof. Dr. Harald Stummer, Univ.-Prof. Dr. Uwe Siebert and other colleagues; UMIT

Module name	Module: E Semester: 2
IT and Information Management in Healthcare (Compulsory Module)	
Contents of the module <ul style="list-style-type: none"> Strategical, tactical and operative information management in healthcare 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 information systems Communication standards in medicine Strategic IT planning for healthcare facilities 	Course code: 29N005
	Group size: 30
	Type of course: Lecture with practical exercise
	Compulsory attendance: No
	Course language: German
Learning outcomes of the module Students <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; 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; 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. 	Participation requirements: None
	Exam information: Course with continuous assessment, written or oral 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 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. A list for further reading and teaching material (e.g. presentation, script) will be made available on UMIT's teaching and learning platform.	Teacher: Univ.-Prof. Dr. Elske Ammenwerth; UMIT

Module name	Module: F Semester: 2
eHealth and Electronic Health Records (Compulsory Module)	
Contents of the module <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 (e.g. ELGA in Austria, eGK in Germany) ▪ Current discussion on electronic health records 	Course code: 29N006
	Group size: 30
	Type of course: Lecture with practical exercise
	Compulsory attendance: No
	Course language: German
Learning outcomes of the module	Participation requirements: None
Students <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; ▪ 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 ELGA in Austria and can comment on it; ▪ 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. 	Exam information: Course with continuous assessment, written or oral 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:
<p>Günter Eysenbach (2001). What is eHealth? J Med Internet Res. 3(2): e20.</p> <p>Hans Oh et al. (2005). What is eHealth? A systematic review of published definition. J Med Internet Res. 7(4): e1.</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>	a.o. Univ.-Prof. Dr. Alexander Hörbst; UMIT

<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"> Basic principles of clinical documentation 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 Legal basis for clinical documentation Clinical and epidemiological registers Classification systems and semantic interoperability 	<p>Course code:</p> <p>29N007</p>
	<p>Group size:</p> <p>30</p>
	<p>Type of course:</p> <p>Lecture with practical exercise</p>
	<p>Compulsory attendance:</p> <p>No</p>
	<p>Course language:</p> <p>German</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, 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 explain the main contents of the laws that have an impact on clinical documentation; 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:</p> <p>None</p>
	<p>Exam information:</p> <p>Course with continuous assessment, written or oral examination</p>
	<p>Total ECTS credits of the module:</p> <p>6</p>
	<p>Contact studies and individual self-studies in ECTS credits:</p> <p>1</p>
	<p>Guided self-studies in ECTS credits:</p> <p>5</p>
	<p>Virtual interaction time in UE:</p> <p>60</p>
<p>Literature/learning materials</p> <p>Florian Leiner, Wilhelm Gaus (2011). Medical Data Management. Springer.</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:</p> <p>(Refer to the Study and Examination Regulations, as amended)</p> <p>Teacher:</p> <p>External lecturer</p>

Module name	Module: H
Presentation and Communication (Compulsory Module)	Semester: 3
Contents of the module <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 	Course code: 29N008
	Group size: 30
	Type of course: Lecture with practical exercise
	Compulsory attendance: No
	Course language: German
Learning outcomes of the module Students <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. 	Participation requirements: None
	Exam information: Course with continuous assessment, written or oral 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
Literature/learning materials A list for further reading and teaching material (e.g. presentation, script) will be made available on UMIT's teaching and learning platform.	Virtual interaction time in UE: 60
	Qualification of the examiner: (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 <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 	Course code: 29N009
	Group size: 30
	Type of course: Lecture with practical exercise
	Compulsory attendance: No
	Course language: German
	Participation requirements: None
Learning outcomes of the module Students <ul style="list-style-type: none"> ▪ are able to identify a practical problem of information management in the clinical setting; ▪ 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. 	Exam information: Grading of the examination performance pursuant to § 19 of the Study and Examination Regulations, as amended
	Total ECTS credits of the module: 10
	Contact studies and individual self-studies in ECTS credits: 1
	Guided self-studies in ECTS credits: 9
	Virtual interaction time in UE: 20
	Qualification of the examiner: (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.	Teacher: Various UMIT and LFUI lecturers

Module name	Module: J Semester: 3
Final Paper and Final Oral Examination (Compulsory Module)	
Contents of the module <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 	Course code: 29N010
	Group size: 30
	Type of course: Lecture with practical exercise
	Compulsory attendance: No
	Course language: German
Learning outcomes of the module Students <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. 	Participation requirements: Completion of modules A-I
	Exam information: 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: 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 platform.	Qualification of the examiner: (Refer to the Study and Examination Regulations, as amended)
	Teacher: Various UMIT and LFUI lecturers