

The English version of the curriculum for the “Master Program in Information Systems” is not legally binding and is for informational purposes only. The legal basis is regulated in the curriculum published in the University of Innsbruck Bulletin on 19 February 2008, issue 22, No. 189. Decision of the Curriculum Committee of the Innsbruck School of Management on 19.11.2007, approved by Senate Decree on 31.01.2008.

On the basis of § 25 para. 1 no. 10 University Organisation Act 2002, BGBl. I (Federal Law Gazette) No. 120, most recently amended by Federal Law BGBl. I (Federal Law Gazette) No. 134/2008 and § 32 Section "Regulations of Study Law", republished in the University of Innsbruck Bulletin of 3 February 2006, Issue 16, No. 90, most recently amended by the University of Innsbruck Bulletin of 8 February 2008, Issue 19, No. 185, the following is decreed:

**Curriculum for the
Master Program in Information Systems
at the University of Innsbruck School of Management**

§ 1 Qualification profile and program objectives

- (1) The Master Program in Information Systems forms part of the group of studies in the social and economic sciences.
- (2) The Master Program in Information Systems aims at intensive career preparation in the social and economic sciences and qualifies students for careers which require the application of well-founded, scientific knowledge and methods. As a scientific program, it essentially covers theories, methods and instruments of the social and economic sciences and, in particular, the field of Information Systems. Findings from the field of gender research are also taken into consideration.
- (3) In addition to subject-specific competences, the Master Program in Information Systems also promotes general social skills.
- (4) The objective of the Master Program is to develop advanced analytical and problem-solving competences valuable in science and practice, which are well-grounded in science and supported by theories and methods. This competence should enable students
 - to elaborate research questions independently, to reflect on scientific knowledge and apply it to novel, especially research-relevant contexts, as well as to pursue PhD programs;
 - to cope with pertinent responsibilities in their professional careers outside the university in a scientifically sound and practically relevant manner. Above and beyond the field of Information Systems, graduates of the Master Program are qualified to pursue careers in different occupational fields;
 - to reflect intensively on the ethical and social consequences and dimensions when applying their knowledge.
- (5) In particular, the Master Program in Information Systems prepares students for
 - scientific careers and especially for pursuing a PhD program and/or
 - managerial, planning, analytical, and consulting responsibilities in the areas of information and knowledge management, business process modeling and enterprise modeling, as well as designing information systems along the value chain.

§ 2 Admission requirements

- (1) Admission to the Master Program in Information Systems requires a thematically relevant bachelor program completed at a university or a university of applied science or other,

equivalent studies completed at an acknowledged Austrian or non-Austrian post-secondary educational institution.

- (2) Thematically relevant studies include the Bachelor Program in Management and Economics and the Bachelor Program in Computer Science both completed at the University of Innsbruck.

§ 3 Duration of the program

The Master Program in Information Systems equals 120 ECTS credits; this corresponds to a program duration of four semesters.

§ 4 Courses

- (1) Each course constitutes a thematic unit and normally comprises four or five semester hours ("SST") or ten ECTS credits.
- (2) All courses – with the exception of the mandatory course referred to in § 7 (4) – consist of two, three or four course units; at least one of them is a course unit with continuing performance assessment.
- (3) The curriculum comprises mandatory and elective courses.

§ 5 Types of course units and number of participants

- (1) Lectures (VO) are scientific presentations that provide an introduction to a subject matter or cover, discuss and explain research topics, questions, and methods and introduce new research findings.
- (2) Course units with continuing performance assessment are:
 - 1) Proseminars (PS): Proseminars cover the fundamentals of scientific methods, give an introduction to the literature and state of the art in the field, and focus on selected issues from the field. The maximum number of participants is 40.
 - 2) Seminars (SE): Seminars focus on detailed scientific discussions. Participants are expected to make oral and/or written contributions. The maximum number of participants is 30.
 - 3) Tutorials (UE): In tutorials, students acquire application-oriented competences and work on practical cases. The maximum number of participants is 20.

§ 6 Procedure for the admission to course units with a limited number of participants

In course units that have a maximum number of participants and admission requirements, places are allocated based on the students' performance in those courses which have been classified as preconditions for admission.

§ 7 Titles, work load, and topics of mandatory courses including ECTS credits

- (1) The following course, giving an introduction to research methods, must be completed:

	Mandatory Course	SST	ECTS credits
	Methods in Information Systems	4	10

- (2) Depending on the bachelor program completed by a student, two of the following mandatory courses must be taken; the selection of these two courses is determined by the Director of Studies of the University of Innsbruck:

	Mandatory Course	SST	ECTS credits
1	Management Essentials I (for students with a degree in Computer Science)	4	10
2	Management Essentials II (for students with a degree in Computer Science)	4	10
3	Computer Science Essentials I (for students with a degree in Management or Economics)	4	10
4	Computer Science Essentials II (for students with a degree in Management or Economics)	5	10

- (3) The following additional mandatory courses must be completed:

	Mandatory Course	SST	ECTS credits
1	Business Information Systems	4	10
2	Information and Knowledge Management	4	10
3	Design of Information Systems along the Value Chain	4	10
4	Business Process Modeling along the Value Chain	4	10
5	Information Systems Project Management	4	10

- (4) The course "Master Thesis Defense" must be completed:

	Mandatory Course	SST	ECTS credits
	Master Thesis Defense		2.5

§ 8 Titles, work load, and topics of elective courses including ECTS credits

One elective course from the following catalogue has to be completed:

	Elective Course	SST	ECTS credits
1	Data Warehouse	5	10
2	E-Economy	4	10
3	Enterprise Architecture	5	10
4	Ethics in Organizations	4	10
5	Gender, Work and Organization	4	10
6	Production and Supply Chain Planning Using Standard Software	4	10
7	Semantic Web and Semantic Systems	5	10
8	Software Engineering	5	10

§ 9 Titles, work load, and short descriptions of the course units of mandatory and elective courses including ECTS credits

(1) Mandatory course referred to in § 7 (1)

	Mandatory Course: Methods in Information Systems	SST	ECTS credits
a	VO Methods in Information Systems In the lecture, students get to know the methods in Information Systems and how the information function in enterprises is established. This is accomplished by examining the strategic, administrative, and operative tasks of information management and information engineering.	2	4
b	SE Methods in Information Systems In the seminar, students get to know the methods employed at different levels of information management and information engineering.	2	6
	Sum	4	10
	Learning objectives of the course: Understanding and reflecting on established procedures, methods and approaches in Information Systems		
	Admission requirements: Positive completion of the courses referred to in § 7 (2)		

(2) Mandatory course referred to in § 7 (2)

1	Mandatory Course: Management Essentials I	SST	ECTS credits
a	VO Management Essentials The lecture deals with the essentials of management and provides basic concepts and fundamentals in the philosophy of science relevant for theories and models in management and economics.	2	5
b	PS Management Essentials Selected topics of the lecture are covered in detail through examples and case studies.	2	5
	Total	4	10
	Learning objectives of the course: introduction into basic theories and models in management and economics		
	Admission requirements: none		

2	Mandatory Course: Management Essentials II	SST	ECTS credits
a	VO Value-Adding Processes in Organizations The lecture is concerned with the fundamentals of production and logistics based on the concept of the value chain. In this context, both the flows of materials and goods and the pertinent organizational processes in an enterprise are discussed. In order to enhance the intra-company perspective, the lecture also covers the principles of supply chain management, which deals with the design and management of value-adding processes between enterprises.	2	6

b	PS Value-Adding Processes in Organizations In the proseminar, theoretical knowledge is applied by means of practical cases.	2	4
	Total	4	10
Learning objectives of the course: understanding and reflecting on value-adding processes in organizations and fundamentals of production and logistics			
Admission requirements: none			

3	Mandatory Course: Computer Science Essentials I	SST	ECTS credits
a	VO Computer Science Essentials The lecture offers an introduction to the most important fields of Computer Science and provides the basis for further in-depth studies.	2	5
b	VO Introduction to Programming The lecture covers core concepts of programming as well as basic concepts of data structures and algorithms.	1	2
c	UE Introduction to Programming In the tutorial, selected topics of the lecture "Introduction to Programming" are covered in more detail through practical programming exercises.	1	3
	Total	4	10
Learning objectives of the course: After completion of this course, students should be able to understand and apply the content of the lectures. They should have acquired the competence to work independently with similar subjects. Additionally, they should have gained a basic understanding of computer science concepts.			
Admission requirements: none			

4.	Mandatory Course: Computer Science Essentials II	SST	ECTS credits
a	VO Database Systems The lecture covers the fundamentals of database systems, both from a user perspective - i.e. the modeling and creation of a data base, queries (SQL), and optimization - and the underlying concepts of the internal level of a database, transaction management, efficient storage (tuning), and system recovery after a crash.	2	4
b	PS Database Systems The topics of the lecture "Database Systems" are covered in more detail through the use of practical cases.	1	2
c	VO Introduction to Modeling The lecture covers basic modeling techniques and concepts, in particular object-oriented modeling techniques.	1	2
d	PS Introduction to Modeling The topics of the lecture "Introduction to Modeling" are covered in more detail through specific cases.	1	2

	Total	5	10
	Learning objectives of the course: After completion of this course, students should be able to understand and apply the content of the lectures. They should have acquired the competence to work independently with similar subjects. Additionally, they should have gained a basic understanding of database systems and modeling techniques.		
	Admission requirements: none		

(3) Mandatory courses referred to in § 7 (3)

1	Mandatory Course: Business Information Systems	SST	ECTS credits
a	VO Business Information Systems Students get to know information and communication systems as the key objects of study in the field of Information Systems. Business processes and their functional integration are elaborated by means of ERP systems and their data structure. Additionally, the lecture covers the fundamentals of software engineering, customizing, assessment of IS business value and the introduction and maintenance of ERP systems.	2	5
b	SE Business Information Systems Select topics of the lecture are covered in detail through examples and case studies.	2	5
	Total	4	10
	Learning objectives of the course: different methods and detailed knowledge of the design and application of business information systems		
	Admission requirements: none		

2	Mandatory Course: Information and Knowledge Management	SST	ECTS credits
a	VO Information and Knowledge Management The lecture covers the fundamentals of information and knowledge management. In this context, information management is considered as leadership function, with information and communication being seen as production factors in enterprises. From the perspective of knowledge management, enterprises are presented as knowledge-based systems. Accordingly, students are prepared for managing the utilization and the further development of knowledge. Moreover, the lecture focuses on the description of functions along the value chain of knowledge.	2	6
b	SE Information and Knowledge Management The seminar applies the methods and techniques of information and knowledge management covered by the lecture. This is accomplished through case studies and the use of software tools.	2	4
	Total	4	10
	Learning objectives of the course: understanding, reflecting on and applying the methods of information and knowledge management		
	Admission requirements: positive completion of the courses referred to in § 7 (2)		

3	Mandatory Course: Design of Information Systems along the Value Chain	SST	ECTS credits
a	VO Design of Information Systems along the Value Chain The lecture covers the design of information systems along the value chain based on the requirements defined in a domain analysis (e.g. concept for production planning and control as well as the coordination of value-adding partners). On this basis, the following are covered: the structure of PPS systems; information and communication systems as decision support systems; electronic business processes (e-business), and reference models (e.g. SCOR, CPFR); examples of electronic business processes in the service sector	2	5
b	SE Design of Information Systems along the Value Chain Selected topics of the lecture are covered in detail through examples and case studies	2	5
	Total	4	10
	Learning objectives of the course: understanding and reflecting on information systems for planning, managing and implementing value-adding processes as well as methods for designing such processes		
	Admission requirements: positive completion of the courses referred to in § 7 (2) and § 7 (3-1)		

4	Mandatory Course: Business Process Modeling along the Value Chain	SST	ECTS credits
a	VO Business Process Modeling along the Value Chain The lecture provides students with a comprehensive insight into business process modeling and enterprise modeling and emphasizes their practical relevance for enterprises. This includes a detailed examination of the methods and techniques employed to model, optimize and reengineer business processes. Additionally, selected reference models from a variety of industries are presented.	2	6
b	SE Business Process Modeling along the Value Chain The seminar applies the subjects and methods of the lecture through examples and case studies and is supported by software tools.	2	4
	Total	4	10
	Learning objectives of the course: Students should acquire a sound knowledge in the area of business process modeling and be able to apply techniques and tools of reengineering and business process improvement, while also understanding, reflecting on and applying methods for designing information systems along the value chain, including e-business models.		
	Admission requirements:: positive completion of the courses referred to in § 7 (3-2 and 3-3)		

5	Mandatory Course: Information Systems Project Management	SST	ECTS credits
a	VO Information Systems Project Management The lecture offers students detailed knowledge and methods for managing and organizing IT projects. Using the individual phases of project planning and implementation, students learn about description, analysis and design methods used in IT projects and become acquainted with IT auditing.	2	5
b	SE Information Systems Project Management The seminar applies the content and methods of the lecture. The focus is on examples and case studies, elaborated during the seminar through the use of software tools.	2	5
	Total	4	10
Learning objectives of the course: Students should acquire the competence to carry out IT projects independently – from planning to implementation – and to reflect on the results achieved.			
Admission requirements: positive completion of the courses referred to in § 7 (3-2 and 3-3)			

(4) Mandatory Course referred to in § 7 (4)

	Mandatory Course: Master Thesis Defense	SST	ECTS credits
	Oral defense of the master thesis		2.5
Learning objectives of the course: reflection on the master thesis in the context of the Master Program in Information Systems			
Admission requirements: positive evaluation of the master thesis			

(5) Elective courses referred to in § 8

1	Elective Course: Data Warehouse	SST	ECTS credits
a	VO Data Warehouse Systems The lecture offers an overview of concepts, techniques, and the internal structure of data warehouse systems from a Computer Science perspective. Topics covered in detail include reference architectures, multi-dimensional data models and their technical implementations as well as the phases of developing data warehouses.	2	4
b	PS Data Warehouse Systems The proseminar covers the subjects of the lecture "Data Warehouse Systems" through practical assignments and exercises.	1	2
c	SE Data Warehouse from Management Perspective The seminar covers the use of data warehouses from a management perspective.	2	4
	Total	5	10
Learning objectives of the course:			

	After completion of this course, students should be able to understand and apply the content of the lectures. They should have acquired the competence to work independently with similar subjects. Additionally, they should have gained a basic understanding of the techniques of data warehouse systems.
	Admission requirements: positive completion of the courses referred to in § 7 (2)

2	Elective Course: E-Economy	SST	ECTS credits
a	VO E-Economy The lecture provides students with detailed knowledge about the electronic economy. In information societies, the use of internet technologies has become increasingly important. The lecture covers all elements along the value chain including e-business, e-commerce and e-government.	2	5
b	SE E-Economy The seminar applies the content and methods of the lecture to business practice. The focus is on examples and case studies, supported during the seminar by software tools.	2	5
	Total	4	10
	Learning objectives of the course: understanding, reflecting on and applying concepts of E-economy		
	Admission requirements: positive completion of the courses referred to in § 7(2)		

3	Elective Course: Enterprise Architecture	SST	ECTS credits
a	VO Business Processes and Workflows The lecture provides an introduction to the core concepts of process-oriented information systems. Process modeling languages and techniques for analyzing business processes are introduced. Additionally, methods and techniques for the implementation of process-oriented applications and the technical architecture of selected process management systems are discussed. Moreover, current standards and trends in the field of business process management are presented.	2	4
b	PS Business Processes and Workflows The proseminar elaborates subjects covered in the lecture "Business Processes and Workflows" and employs practical cases.	1	2
c	VO IT Governance The lecture provides an introduction into techniques, standards and tools for modern management and control of IT landscapes in enterprises. Among others, this includes the organization of IT-relevant processes in enterprises (e.g. service level management, capacity management), and security and risk management, while also covering relevant laws, standards and strategic IT planning.	1	2
d	PS IT Governance Based on the subjects of the lecture, the proseminar focuses on analyzing practical issues and case studies.	1	2
	Total	5	10

	<p>Learning objectives of the course: After completion of this course, students should be able to understand and apply the content of the lectures. They should have acquired the competence to work independently with similar subjects. Additionally, they should have gained a basic understanding of business processes, workflows and IT governance.</p>
	<p>Admission requirements: positive completion of the courses referred to in § 7 (2)</p>

4.	Elective Course: Ethics in Organizations	SST	ECTS credits
a.	<p>VO Ethics in Organizations Basic concepts of analyzing ethical decisions in organizations and assessing ethical implications of organizational practices</p>	2	5
b.	<p>SE Responsible Decisions and Ethical (Self-)Formation in Organizations Analyzing and working on organizational practices and techniques in view of ethical implications and responsible decision-making</p>	2	5
	Total	4	10
	<p>Learning objectives: knowledge of the specifically ethical implications of organizational processes; on this basis, students acquire the competence to assess ethical practices and actions in organizations and other organized contexts and develop organization-specific ethical judgment;</p>		
	<p>Admission requirements: positive completion of the courses referred to in § 7 (2) and course 3 referred to in § 7 (3-1)</p>		

5.	Elective Course: Gender, Work and Organization	SST	ECTS credits
a.	<p>VO Gender, Work, and Organization Theoretical concepts of gender and organization, gender-specific organizational (sub-)structures, cultures and relationships, indirect and direct discrimination</p>	2	5
b.	<p>SE Gender, Work and Organization Discussion of selected topics, exercises and cases in the field of gender, work, and organization</p>	2	5
	Total	4	10
	<p>Learning objectives: competence to assess the gender-specific consequences of organizational practices and to identify suitable design measures on the basis of gender and diversity research</p>		
	<p>Admission requirements: positive completion of the courses referred to in § 7 (2) and the course referred to in § 7 (3-1)</p>		

6	Elective Course: Production and Supply Chain Planning Using Standard Software	SST	ECTS credits
a	VO Production and Supply Chain Planning Using Standard Software In this lecture, leading standard software is used to familiarize students with the process of production and supply chain planning. They should also be able to recognize the extent to which modern, especially hierarchical planning concepts can be implemented with today's planning software. Subjects covered are: planning concepts for production and supply chain planning; functionalities provided by modern logistics software along with selected theories of resource scheduling.	2	5
b	SE Production and Supply Chain Planning Using Standard Software In this seminar an enterprise example and leading standard software are used. Students are offered an introduction and more detailed knowledge about the process of production and supply chain planning. This is accomplished by customizing the software to the specific requirements of the example enterprise.	2	5
	Total	4	10
	Learning objectives of the course: After completion of this course, students should have gained a fundamental and detailed knowledge of production and supply chain planning by using a standard software and have critically reflected on these planning concepts		
	Admission requirements: positive completion of the courses referred to in § 7 (3-1 and 3-3)		

7	Elective Course: Semantic Web and Semantic Systems	SST	ECTS credits
a	VO Semantic Web This lecture provides an overview of the WWW/semantic web; ontologies; data representation, meta-data and ontologies; modeling languages like RDF, OWL, SWRL and WSML; logics (description logics, logic programming and first-order logic); reasoning	3	6
b	SE Applied Ontology Engineering The seminar is concerned with fundamental techniques of designing ontologies: fundamentals of ontologies, methodologies, ontology languages, design patterns and practical exercises in the field of e-business and e-tourism	2	4
	Total	5	10
	Learning objectives of the course: After completion of this course, students should be able to understand and apply the content of the lectures. They should have acquired the competence to work independently with similar subjects. Additionally, they should have gained a basic understanding of the techniques of semantic web.		
	Admission requirements: positive completion of the courses referred to in § 7 (2)		

8	Elective Course: Software Engineering	SST	ECTS credits
a	VO Select Chapters of Software Engineering The lecture covers selected subjects and paradigms of software engineering, such as model-driven software development, agile methods, and the design of software architectures.	2	4
b	PS Select Chapters of Software Engineering The proseminar elaborates on the subjects of the lecture by means of practical assignments and examples.	1	2
c	PS Current Technologies The proseminar elaborates and applies selected technologies and frameworks employed in the implementation of large software systems in practice.	2	4
	Total	5	10
	Learning objectives of the course: After completion of this course, students should be able to understand and apply the content of the lectures. They should have acquired the competence to work independently with similar subjects. Moreover, they should have gained a detailed understanding of the methods employed in software engineering.		
	Admission requirements: positive completion of the courses referred to in § 7 (2)		

§ 10 Master Thesis

- (1) In the Master Program in Information Systems, a master thesis must be written. The topic of the thesis must be chosen from the subjects covered by the mandatory courses referred to in § 7 (3) or by the elective courses referred to in § 8.
- (2) The master thesis is a scientific piece of work.
- (3) By creating the master thesis, students must demonstrate that they are able – independently and in a limited period of time - to apply the theoretical and methodical instruments of the Master Program to a particular research question and to reflect on them.
- (4) Students have the right to propose the topic of the master thesis or to choose it from a number of proposals.
- (5) The master thesis is equivalent to a work load of 27.5 ECTS credits.
- (6) The topic and the supervisor of the master thesis may only be submitted on positive completion of the following courses:
 - the mandatory courses referred to in § 7 (1 and 3) and
 - the elective course referred to in § 8.
- (7) The master thesis must be submitted in printed and in electronic form.
- (8) After the positive completion of the master thesis, the course "Master Thesis Defense" referred to in § 7 (4) must be completed, which concludes the Master Program.
- (9) It is permissible for several students to work on one single master thesis topic together, as long as it is feasible to assess the performance of each individual student separately.

§ 11 Examination regulations

- (1) The student's performance in a course, with the exception of the course "Master Thesis Defense" referred to in § 7 (3), is assessed by means of one of the following:
 - 1) In courses consisting of one or two lectures combined with a course unit involving continuing performance assessment, the final grade comprises the continuing performance assessment grade and an overall exam concerning the course contents. A positive continuous performance assessment is required for admission to the overall exam.
 - 2) In courses consisting of one or several lectures and several course units with continuing performance assessment, the final grade is determined by means of examinations in the course units.
- (2) The assessment of the course "Master Thesis Defense" referred to in § 7 (3), which concludes the Master Program, is based on an oral exam administered by individual examiners.
- (3) The examination method (written/oral/exam paper/s) for examinations in course units is determined by the instructor of the course unit before the course unit starts.
- (4) Overall course exams comprise the subjects of the entire course; the exams have to be administered by individual examiners. The overall exam is a written exam (maximum length: 90 minutes).
- (5) The assessment of the following courses from the Master Program in Organization Studies is based on the examination regulations of the respective curriculum:
 - 1) the course "Ethics in Organizations" referred to in § 8 (4)
 - 2) the course "Gender, Work and Organization" referred to in § 8 (5)

§ 12 Academic Degree

Graduates of the Master Program in Information Systems are awarded the academic degree of "Master of Science", or "M.Sc.", in brief.

§ 13 Implementation

This curriculum comes into force on 1 October 2008.

For the Curriculum Committee:
Univ.-Prof. Dr. Albrecht Becker

For the Senate:
Univ.-Prof. Dr. Ivo Hajnal

Appendix: Recommended course of studies

