Medizinische Universität Graz

Curriculum of the University course (ULG)

MSc (CE) Biobanking

Master of Science (Continuing Education) – in short MSc (CE)

according to § 56 University Law 2002 (UG)

BGBl I 2002/120 as amended

Version 01

Decision and Revision-history

Version	Date of decision of the Academic Commission for Postgraduate Education	Date of approval by the Senate	Brief description of the change	Effective Date
01			First submission	

Content

§ 1 General Information

The University course MSc (CE) Biobanking is offered to be completed alongside work and takes five semesters. All semester-arrangements are referenced according to the Regulations of the University Law of 2002 (UG) as amended. 120 ECTS credits are rewarded. Graduates are awarded the academic degree of Master of Science (Continuing Education), abbreviated to "MSc (CE)".

The students will receive ECTS credits for their completed performances. The ECTS credits will be rewarded according to the workload it involves on average (including preparation and follow-up worktime), in order to complete the educational achievements. 1 ECTS credit equals 25 real hours of work. 1500 real hours of work correspond to the workload of one year of full-time studies, with 60 ECTS credits allocated to this workload.

To attend the University course, a course fee is required (cf. § 56 para. 5 UG as amended). More detailed regulations are laid down in the Guideline for University Courses of the Medical University of Graz as amended.

§ 2 Requirements for admission

(1) Requirements for admission to the University course MSc (CE) Biobanking are in accordance with § 70 para. 1 Z 3 UG as amended:

- Completion of a subject-related degree programme (at least Bachelor's level and with at least 180 ECTS credits), e.g. for medical-technical personnel or from natural science fields, e.g. biology, molecular biology, biotechnology or health sciences, IT etc.

or

- completion of the diploma programme in human medicine or pharmacy

or

- completion of a different study programme of at least the same level of higher education at a recognised national or international post-secondary educational institution,

and

- a minimum of 2 years' relevant professional experience, respectively.

(2) Knowledge of the English language and the ability to study English-language documents or to participate in English-language teaching units is required.
(3) Each applicant may be requested by the course director to attend a personal admission interview.
(4) Students are admitted according to the number of available study places. The allocation of study places shall take place in the order of binding applications after the provision of proof that all admission requirements have been fulfilled.
(5) The Rectorate decides on admission on the recommendation of the course director.
(6) The completion of individual modules as a continuing education course is permitted subject to free capacities. The selection and approval is the responsibility of the course director.

§ 3 Qualification profile, occupational fields and target groups

A. Subject of the university course

Given the extensive international growth of biobanks, it is necessary to provide training for experts in the field of biobanking and its related disciplines. This university course is designed to address this development and provide expertise on the structure, management, equipment and challenges of biobanking, as well as networking opportunities.

B. Qualification profile and Learning Outcomes

The aim of the university course is to acquire knowledge, skills and competences that enable students to work in the multidisciplinary field of biobanking.

Graduates of the University course MSc (CE) Biobanking are able to:

- Establish and implement a biobank nationally and internationally,
- Apply knowledge in relation to the organisation, implement quality and risk management and represent a biobank,
- Apply knowledge to implement the necessary infrastructure (incl. IT) and budget preparation,
- Implement knowledge on sustainable management of a biobank,
- Implement knowledge on sample management and ELSI aspects of a biobank,
- Apply knowledge in the fields of epidemiology, biostatistics and selected research areas,
- Identify different international challenges in the field of biobanking to be able to take action through sustainable operation and networking of structures,
- Apply theoretical knowledge and practical skills related to team management and scientific project management specifically adapted to the multi-faceted and multi-disciplinary challenges in biobanks.

C. Need and relevance of the university course for science, society and the job market

Biological sample requests for medical research will continue to increase in the future. This means that the demands on the quality of biobank samples will also increase due to the constantly growing range of methods for different analyses and applications. Expertise in these analyses and applications is central to the further development of biobank processes so that the quality of biobank resources can keep pace with novel methods for bioanalytics. Meeting these high demands in the training of experts in the field of biobanking requires well-structured postgraduate education and training.

For graduates of the MSc (CE) Biobanking, the following occupational fields may be relevant:

- National and international biobanks
- Medical research
- Basic research
- Analytic centres
- Pharma industry
- Diagnostic companies

D. Target group

The university course is designed for graduates of a bachelor's degree programme for medical-technical personnel or from natural science fields (e.g. biology, molecular biology, biotechnology, etc.) or of a completed degree programme in medicine or pharmacy who are particularly interested in the field of biobanking and would like to specialise and continue their education in this area.

§ 4 Structure and outline

The University course MSc (CE) Biobanking is offered alongside employment, comprises 5 semesters with a total of 1924 Teaching Units (TU) and is divided into 16 modules including a final thesis. A total of 120 ECTS credits are awarded for the courses.

The sequence of modules does not build upon each other and can be changed by the course director.

§ 5 Course formats and forms of learning

The University course MSc (CE) Biobanking is offered alongside employment. In order to combine working and studying, the following forms of teaching and learning are applied in the organisation of the respective university programme (cf. § 22 para. 3 of the Statutes on Study Law).

Lectures can be delivered as virtual teaching units using information and communication technologies. Virtual teaching can complement or replace face-to-face teaching in certain areas.

The curriculum includes the following course formats:

(1) Lectures (LE) are courses without compulsory attendance, in which knowledge is imparted through lectures by the teachers;
(2) Seminars (SE) are research- or theory-oriented courses that serve the reflection and/or discussion of specific academic issues; seminars are courses with an immanent examination character and can conclude, for example, with a written examination paper; attendance is compulsory;
(3) Seminars with exercises (SX) are courses with an immanent examination character in which seminars and exercises are combined and can conclude, for example, with a written examination paper; attendance is compulsory.

All types of courses mentioned under (2) to (3) are considered to be courses with an immanent examination character.

The following forms of learning are used:

(1) E-learning: forms of learning that use electronic or digital media to present and distribute learning materials and/or support interpersonal communication;
(2) Blended Learning (BL): Students acquire, deepen and consolidate course-relevant content by means of a combination of traditional face-to-face teaching and self-learning phases with technology-supported teaching.

§ 6 Teaching language

The course is held in English.

Relevant literature will be provided in English.

§ 7 Designation and Hours of Compulsory- and Optional Subjects

The modules and examinations are listed below with the module title, course title, course format (Type), ECTS credits (ECTS) and the type of performance review (Performance Review; i, immanent; s, single examination). The module descriptions can be found in Annex I.

Module	Module/Course Title	Type	Units	ECTS	Performance Review
01	Module 1: Introduction and Basic Knowledge in Biobanking				
01.1	Introduction and Basic Knowledge Biobanking	SXU	40	1	i
01.2	General Basic Knowledge	LE	40	2	s
01.3	Basic Knowledge Sample Handling and Routine	LE	40	2	s
01.4	Basic Knowledge Infrastructure	LE	20	1	s
02	Module 2: Ethics and Law				
02.1	Ethics and Legal Aspects in General and on an Example of a Biobank	LE	40	2	s
02.2	Law in General	LE	40	2	s
02.3	Law in Biobanking	LE	40	2	s
03	Module 3: Collection and Management of Samples				
03.1	Sample Collection and Management	SX	40	1	i
03.2	Cryo Biology and Storage in Liquid Nitrogen	LE	60	3	s
03.3	Sample Transport and Shipping	LE	40	2	s
04	Module 4: Risk Management and Biobanking				
04.1	Risk Management in General	LE	40	2	s
04.2	Risk Management in Biobanks	LE	40	2	s
04.3	Special Risks in Biobanking	LE	20	1	s
04.4	Impact of Pre-analytical Variations in Research	LE	20	1	s
05	Module 5: Biobanking IT				
05.1	IT Infrastructure (Hardware/Software)	LE	40	2	s
05.2	Data and Types of Data	LE	40	2	s
05.3	Data Management in Clinical Research	LE	20	1	s
05.4	Bioinformatics and Biobank Statistics	LE	20	1	s
06	Module 6: Sustainability, Budgeting and Business Planning				
06.1	Planning and Organisation	LE	40	2	s
06.2	Cost Calculation in Biobanks	LE	40	2	s
06.3	Sustainability	LE	40	2	s
07	Module 7: Epidemiology				
07.1	Epidemiology in Biobanks	LE	60	3	s
07.2	Public Health Usage of Biobank Data	LE	60	3	s
08	Module 8: Quality Management and Quality Control				
08.1	QM and QC in General	LE	60	3	s
08.2	QM and QC in Biobanks	LE	60	3	s
09	Module 9: Management and Communication				
09.1	Management and Economic Competence	LE	60	3	s
09.2	Project and Process Management	LE	20	1	s

09.3	Organisational Communication	LE	20	1	s
09.4	Management and Communication/Negotiation Competence	SX	34	1	i
10	Module 10: Strategy and Development, Networks				
10.1	Biobanking Societies and Networking	LE	40	2	s
10.2	Strategy and Development, Networking in General	LE	40	2	s
10.3	BBMRI and Trends	LE	40	2	s
11	Module 11: Research Methods I				
11.1	Research I - Theoretical Part I	LE	60	3	s
11.2	Research I – Theoretical Part II	LE	40	2	s
11.3	Research I - Practical Part	SX	26	1	i
12	Module 12: Research Methods II				
12.1	Research II - Theoretical Part I	LE	60	3	s
12.2	Research II – Theoretical Part II	LE	40	2	s
12.3	Research II - Practical Part	SX	24	1	i
13	Module 13: Designing and Implementation of Clinical Studies				
13.1	Designing of Clinical Studies	LE	50	3	s
13.2	Implementation of Clinical Studies	LE	50	3	s
13.3	Designing and Implementation of Clinical Studies - Practical Part	SX	40	2	i
14	Module 14: International Biobanking				
14.1	Challenges of International Cooperations in Biobanking - Sample Management and Strategy	SE	50	3	i
14.2	Challenges of International Cooperations in Biobanking – IT, Budgeting and Research	SE	50	3	i
14.3	Challenges of International Cooperations in Biobanking – Ethics, Law and Suppliers	SE	40	2	i
15	Module 15: Managing Multidisciplinary Teams				
15.1	Managing Multidisciplinary Teams – Theoretical Part I	LE	50	3	s
15.2	Managing Multidisciplinary Teams – Theoretical Part II	LE	50	3	s
15.3	Managing Multidisciplinary Teams – Practical Part	SX	40	2	s,i
16	Module 16: Master thesis including defensio				
	Master thesis including Defensio			24	s,i

§ 8 Examination regulations

(1) The regulations of §§ 72 ff UG as amended and the regulations of the study law part of the statutes of the Medical University of Graz shall apply.

(2) A positive completion of all other examination subjects of the university course must be achieved prior to the assessment of the Master thesis.

(3) Course examinations

For courses without immanent examination character (LE), the examination takes place in a single examination act, which can be oral or written or combined in writing and orally. All courses except lectures have an immanent examination character. These courses are completed by the assessment of continuous participation and other requirements, which are announced at the beginning of the course by the course lecturer in accordance with § 76 para. 2 UG as amended. An attendance rate of 80% is required for courses immanent to examinations. The assessment of performance is based on the grading scale defined in § 72 para. 2 UG as amended.

(4) Repetition of examinations

The repetition of examinations is regulated in § 41 para. 10 of the Statute Part on Academic Regulations.

(5) Accreditation of examinations

The accreditation of courses and examinations is subject to the student's application to the body responsible for study matters pursuant to § 78 UG. The prerequisite for the recognition of examinations is in any case that there are no significant differences with regard to the acquired competences (learning outcomes). The accreditation of an academic thesis is excluded.

§ 9 Master Thesis

(1) Each course participant has to write and defend a master thesis on a training-specific topic, which corresponds to the guideline for the preparation of a master thesis in a university course of the Medical University of Graz as amended.
(2) 24 ECTS credits shall be awarded for the master thesis and its defence.
(3) The master thesis must contain theoretical and practical elements and serves to demonstrate the ability to work independently on scientific topics in the field of biobanking in accordance with current content-related, scientific and methodological standards.
(4) The assignment of the master thesis must be set in a way that allows the student to complete it within six months.
(5) During the processing of the topic and the supervision of the master thesis, legal regulations and the specifications of the "Guideline for the Preparation of a Master Thesis in a University Course" of the Medical University of Graz as amended must be observed.

§ 10 Completion

Upon positive completion of all the credits provided for in this curriculum and the positively assessed and defended master thesis, the student receives a degree certificate confirming the completion of the university programme. Graduates are entitled to use the following academic degree according to § 87 para. 2 UG as amended:

Master of Science (Continuing Education) - abbreviated to MSc (CE)

The study programme corresponds to level 7 of the European Qualification Framework and entitles the holder to access a doctorate.

§ 11 Maximum length of study

The maximum length of the study programme is 7 semesters (cf. § 56 para. 7 UG as amended).

§ 12 Management

The academic and organisational course directors and their deputies are determined by a decision of the rectorate. The rector makes the appointment.

§ 13 Organiser

The University course MSc (CE) Biobanking is run by the Medical University of Graz.

§ 14 Quality assurance

The University course MSc (CE) Biobanking is integrated into the quality management system of the Medical University of Graz. With the participation of the students, the lecturers, the course director and the member of the rectorate responsible for studies and teaching, classes of the university course as well as the entire course are evaluated (cf. ULG guideline Medical University of Graz as amended).

§ 15 Entry into force

The curriculum enters into force upon publication in the official newsletter of the Medical University of Graz and is applicable for the first time as of admission for the winter semester 2022/2023.

Annex I – Module Description

Module Name	01-Introduction and Basic Knowledge in Biobanking
Workload	6 ECTS/140 TU, thereof 40 in presence
Contents	Basic knowledge for the operation of a biobank: • Operational concept of a biobank • Different types of biobanks • Fundamental biobank facilities • Workflows and logistics • Knowledge of laboratory procedures • Knowledge of storage procedures • Services of a biobank
Learning Outcomes	After completing the module, students are able to: • Define different types of biobanks • Ddefine key resources/infrastructures of biobanks • Apply knowledge about risks/opportunities of a biobank • Bbe aware of ethical and legal challenges • Define key services of a biobank • Distinguish between funding and support • Apply knowledge for good sample/data management • Apply knowledge of biobank requirements
Teaching- and Learning Activities and Methods	Lecture with discussion Group work on case studies with presentation of results E-learning, exam with MC and open questions
Recommended prerequisites for participation	None

Module Name	02-Ethics and Law
Workload	6 ECTS/120 TU, thereof 8 as an online Q&A session
Content	• Regulatory, legal, ethical aspects of biobanks • Data protection • Patent protection • Informed consent • Laws on the collection, storage and distribution of samples • Material Transfer Agreement • Ethical issues and obligations • Specimen guidelines
Learning Outcomes	After completing the module, students are able to: • Identify ethical issues and challenges of biobanking • Recognise guidelines and regulations in medical ethics • Differentiate types/structures of informed consent • Apply knowledge on informed consents • Apply knowledge of the Material Transfer Agreement • Answer key legal questions regarding biobanking • Define personal rights and data protection • Define patent protection
Teaching- and Learning Activities and Methods	Blended learning, writing assignments
Recommended prerequisites for participation	None

Module Name	03-Collection and Management of Samples
Workload	6 ECTS/140 TU, thereof 40 TU held
Contents	• Sample collection and management • Biobank infrastructure and consumable requirements • Storage systems and laboratory automation • Sample receipt procedure • Optimisation of workflows • Cryobiology • Applications and effects of liquid nitrogen • Transport and shipping of samples
Learning Outcomes	After completing the module, students are able to: • Be familiar with the requirements of biobank infrastructures • Implement storage and laboratory systems • Implement quality assurance measures • Implement/optimise biobank workflows • Understand the role of biobanks in research • Understand cell preservation/storage processes • Describe the principles of cell preservation techniques • Make decisions on the transport of samples
Teaching- and Learning Activities and Methods	Lecture with discussion Group work on case studies with presentation of results E-learning, MC and open questions
Recommended prerequisites for participation	None

Module Name	04-Risk Management and Biobanking
Workload	6 ECTS/120 TU, thereof 8 as an online Q&A session
Contents	• Risk management and risk reduction • Risk management of infrastructure • Categorising risks of a biobank • Safety training, emergency plans • Biological, chemical and physical risks • Ethical and financial risks • Influence of pre-analytical variations in research
Learning Outcomes	After completing the module, students are able to: • Comprehend the importance of risk management • Implement risk management in general • Implement risk management in a biobank • Differentiate between various categories of risks in a biobank • Apply knowledge about the implementation of escape routes • Apply knowledge about biological, chemical and physical risks • Apply knowledge about financial and ethical risks • Apply knowledge about pre-analytical variations
Teaching- and Learning Activities and Methods	Blended learning with assignments
Recommended prerequisites for participation	None

Module Name	05-Biobanking IT
Workload	6 ECTS/120 TU, thereof 8 as an online Q&A session
Contents	• Setting up an IT infrastructure • Definition of interfaces - difference in types of biobanks • Types of data • Data quality • Data protection strategy • Data management concepts • Bioinformatics • Introduction to data and statistics • Probability distributions • Hypothesis testing • Linear regression
Learning Outcomes	After completing the module, students are able to: • Define different components of a biobank software • Apply knowledge about interfaces of a biobank software • Understand the importance of modular software architecture • Grasp the basics of database systems • Plan a simple database system • Apply basic knowledge of clinical database systems • Comprehend how statistics are applied to medical data • Apply statistical tests to produce summary statistics from different types of data from resources such as biobanks • Use graphs to interpret the content of a data set • Perform simple regressions to identify relationships between variables
Teaching- and Learning Activities and Methods	Blended learning with assignments
Recommended prerequisites for participation	None

Module Name	06-Sustainability, Budgeting and Business Planning
Workload	6 ECTS/120 TU, thereof 8 as an online Q&A session
Contents	• Preparation of a business plan for a biobank • Instruments for planning and organisation • Budget and performance plan • Research funding • Cost calculation and user fees • Cost analysis: Biobank Operating Procedure • Planning in the area of conflict between research, quality and business administration
Learning Outcomes	After completing the module, students are able to: • Prepare a business plan for a biobank • Apply tools for planning/organising a biobank • Prepare a budget and performance plan for a biobank • Implement a calculation for the use of samples/data • Differentiate direct/indirect costs of a biobank • Apply decision-making methods for a biobank • Plan/ensure the sustainability of a biobank • Make decisions in the area of conflict (research, quality and business administration)
Teaching- and Learning Activities and Methods	Blended learning with assignments
Recommended prerequisites for participation	None

Module Name	7-Epidemiology
Workload	6 ECTS/120 TU, thereof 8 as an online Q&A session
Contents	• Activities in epidemiology • Types of studies • Construction of epidemiologically relevant cohorts • Epidemiological cohorts • Epidemiological methods • Detection of errors in studies • Healthcare systems research and health economics • Analysis of target group specific health reports
Learning Outcomes	After completing the module, students are able to: • Apply simple concepts of epidemiology • Apply analytical knowledge to collect, analyse and interpret data for public health purposes • Design and conduct research/health reports • Apply basic knowledge of epidemiology to continue studies
Teaching- and Learning Activities and Methods	Blended learning with assignments
Recommended prerequisites for participation	None

Module Name	08-Quality Management and Quality Control
Workload	6 ECTS/120 TU, thereof 8 as an online Q&A session
Contents	• Quality management and quality assurance (audit) • Standard Operating Procedures (SOP) • Framework for quality agreements • Certification • Various quality management systems • Documentation • Process support and competence training • Samples - quality control
Learning Outcomes	After completing the module, students are able to: • Apply knowledge of a quality management system • Develop a process-based workflow • Create an SOP (Standard Operating Procedure) • Create an audit plan • Understand the framework conditions of a QM system for biobanks • Implement a QM system in a biobank
Teaching- and Learning Activities and Methods	Blended learning with assignments
Recommended prerequisites for participation	None

Module Name	09-Management and Communication
Workload	6 ECTS/134 TU, thereof 34 in presence, 8 TU in 2 parallel groups
Contents	• Foundations of management and business administration • Project and process management (process landscape) • Knowledge management • Operational and strategic controlling • Sponsoring (evaluation, acquisition and support) • Working with academic and industrial partners • Basics of communication, conversational skills • Conflict management, negotiation techniques
Learning Outcomes	After completing the module, students are able to: • Apply techniques for management decisions • Apply operational and strategic management tools for planning, steering and control • Formulate strategic and operational goals of a biobank • Implement project management methods in a biobank • Implement process management methods in a biobank • Apply communication techniques in a biobank • Apply conflict management techniques in a biobank
Teaching- and Learning Activities and Methods	Lecture with discussion Group work on case studies with presentation of results E-learning, homework
Recommended prerequisites for participation	None

Module Name	10-Strategy and Development, Networks
Workload	6 ECTS/120 TU, thereof 8 as an online Q&A session
Contents	• Strategy and development nationally and internationally • Economic and scientific networking • Biobank societies (e.g. ISBER, ESBB) • Biobank networks (e.g. BBRMI-ERIC) • Portals, catalogues
Learning Outcomes	After completing the module, students are able to: • Distinguish between biobank societies and networks • Know the tasks of the most important societies • Know the tasks of the most important networks • Integrate a biobank into the societies/networks • Help shape the strategic decisions of a biobank in networks
Teaching- and Learning Activities and Methods	Blended learning with assignments
Recommended prerequisites for participation	None

Module Name	11 – Research Methods I
Workloa	6 ECTS/126 TU, thereof 26 in presence
Contents	• Basics of Histology • Basics of Microscopy • Cell culture • Tissue Micro Array (TMA)

Learning Outcomes	After completing the module, students are able to:
	• Be familiar with important methods and analyses of research in the following research areas:
	  ○ Histology
	  ○ Microscopy
	  ○ Cell culture
	  ○ Preparation of TMAs

Teaching- and Learning Activities and Methods	Lecture with discussion Exercises E-Learning
Recommended prerequisites for participation	None

Module Name	12 – Research Methods II
Workload	6 ECTS/124 TU, thereof 24 in presence
Contents	• Proteomics • Mass Spectometry • Ultrastructure Analysis • Genomics

Learning Outcomes	After completing the module, students are able to:
	• Be familiar with important methods and analyses of research in the following research areas:
	  ○ Proteomics
	  ○ Mass Spectometry
	  ○ Ultrastructure Analysis
	  ○ Genomics

Teaching- and Learning Activities and Methods	Lecture with discussion Exercises E-Learning
Recommended prerequisites for participation	None

Module Name	13 – Designing and Implementation of Clinical Studies
Workload	8 ECTS/140 TU, thereof 40 in presence
Contents	• Planning of clinical studies • Project planning • Study planning • Planning of multinational clinical trials • Conducting clinical trials • Different phases of the clinical trial • Approval procedure • Special features in the conduct of clinical trials
Learning Outcomes	After completing the module, students are able to: • Develop and implement a clinical study • Evaluate a study design according to epidemiological criteria • Write a study protocol according to FDA standards • Recognise and be able to implement an approval process • Implement data sheets, CROs and data collection • Select evaluation methods correctly • Implement reporting according to FDA
Teaching- and Learning Activities and Methods	Lecture with discussion Group work on case studies with presentation of results E-learning, homework
Recommended prerequisites for participation	None

Module Name	14 – International Biobanking
Workload	8 ECTS/140 TU, thereof 40 in virtual presence
Contents	Biobanking has become a global undertaking where not only national networks but international cooperation is becoming increasingly important. Therefore, important and complex topics of biobanking will be discussed by different experts from an international perspective. These topics comprise: • International challenges in ethics and law • International challenges in sample collection and management • International challenges of quality management and risk management in multinational biobanking • International challenges - from the perspective of different biobanking suppliers • International challenges in biobanking IT • Budgeting in international multi-stakeholder biobanking • International cohort building in epidemiology • Strategy and development of international networks
Learning Outcomes	After completing the module, students are able to: • Identify international challenges and differences in ethical and legal issues related to samples and data and apply this knowledge optimally for research purposes • Assess and respond to international challenges associated with the collection, processing, storage and distribution of biospecimens and data • Recognise international differences in the implementation of quality management and risk management for biobanks • Apply other international approaches to implementing data systems for storing biospecimen data • Recognise and respond to differences in budgeting for multi-stakeholder biobanking • Recognise differences and challenges in setting up international cohorts
Teaching- and Learning Activities and Methods	Lecture with discussion and group work E-learning
Recommended prerequisites for participation	None

Module Name	15 – Managing Multidisciplinary Teams and Scientific Projects in Biobanks
Workload	8 ECTS/140 TU, thereof 40 in presence
Contents	• Introduction to the topics of management and project management combined with leadership skills • Introduction to the topic of team management and motivation • Introduction to writing project proposals (possibilities, cooperation with partners, calculation, legal and ethical limits) • Project management of research projects (platforms, milestones, responsibilities, reports, etc.) • Team management with special challenges for multidisciplinary teams in the field of biobanking • Development of training plans with specific reference to laboratories/safety/hygiene • Responsibilities in multidisciplinary teams • Human resource management (resources, calculations, training, etc.) • Introduction of knowledge management • Communication (dealing with different media) • Internal communication (in the team, jour fix, etc.) • External communication (stakeholders) • Introduction to further research-related skills related to biobanking (literature research, publications, scientific writing, documentation, etc.)
Learning Outcomes	After completing the module, students are able to: • Successfully build and lead multidisciplinary teams in the field of biobanking • Develop an understanding of individual differences in the field of biobanking • Apply research-related skills related to the development of project proposals, realisation and implementation of project proposals • Handle media • Respond to the specific requirements of presentation techniques in the research and academic environment
Teaching- and Learning Activities and Methods	Lecture with discussion Group work on case studies with presentation of results E-learning, homework
Recommended prerequisites for participation	None

Module Name	16 – Master thesis
Workload	24 ECTS
Contents	• Theoretical or practically oriented scientific work in the field of biobanking
Learning Outcomes	After completing the module, students are able to: • Work independently on scientific questions in the field of biobanking • Solve problems related to the research question within a given period of time using scientific methods • Apply the relevant publications in their field of work and the rules of good scientific practice • Master the scientific documentation as well as the evaluation and defence of their results in front of a specialist audience
Teaching- and Learning Activities and Methods	Master-Thesis with Defensio
Recommended prerequisites for participation	A positive completion of all other examination subjects of the university course must be achieved prior to the assessment of the master thesis

Annex II – List of abbreviations

BGBl	Bundesgesetzblatt (Federal Law Gazette)
BL	Blended Learning
cf.	confer
CE	Continuing Education
ECTS	European Credit Transfer and Accumulation System
MC	Multiple Choice
MSc	Master of Science
para.	Paragraph
Q&A	Question & Answer
SE	Seminar
SX	Seminar with exercises
TU	Teaching Units
UG	Austrian University Law (Bundesgesetz über die Organisation der Universitäten und ihre Studien (Universitätsgesetz 2002 – UG), BGBl I 2002/120 idgF)
LE	Lecture