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# Module Handbook

Heidelberg University  
Medical Faculty Mannheim

## Master of Science “Health Economics”

Period of Study: Two semesters full-time, four semesters part-time; yearly intake  
(winter term)

Type of Study: Advanced program that requires postgraduate work experience

Start: End of August / beginning of September each year

Areas of Study: Economics, Health Economics

Location: Medical Faculty Mannheim/ UMM

ECTS-credits: 60

Modules: 4 teaching modules plus a thesis module

Language of instruction: English

Target Group: Medical doctors and other professionals with an initial health-related  
academic degree

Latest revision: 18/01/2017

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## **1. Contacts and General Information**

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**Title of Award:**

Master of Science (M.Sc.)

**Mode of Attendance**

Full-time 12 months

Part-time 24 months

**Dates**

Application deadline April 1<sup>st</sup> each year

Program starts end of Aug/beginning of Sept  
each year

## 2. Introduction to Mannheim Medical Faculty

Founded in 1386, Heidelberg University is the oldest university in Germany. More than 30 000 students are currently enrolled, with approximately 22% of the students originating from outside of Germany. Among the University's faculties are two Faculties of Medicine, one at Heidelberg and one at the campus in Mannheim.

The Medical Faculty Mannheim of Heidelberg University was established in 1964. Initially, our Medical Faculty offered medical students the opportunity to pursue their clinical studies in Mannheim after having finished their preclinical studies at Heidelberg. For medical students, this was a welcome opportunity for increased interaction with clinicians and instructors due to a favorable staff to student ratio at the Mannheim campus.

Starting with the 2006 / 2007 academic year, our Medical Faculty expanded its offer and is now enrolling students from their first term based on its innovative curriculum for medical and health studies (Mannheimer Reformiertes Curriulum für Medizin und medizinnaher Berufe - MaReCuM), i.e. medical students are now receiving an integrated pre-clinical and clinical training in Mannheim. Part of the curriculum reform is to offer an early possibility for medical students to specialize in a medicine-related field by enrolling in its Master programs. In total, around 1200 medical students study at our faculty.

These Master programs are designed as stand-alone modularized courses and are thus also highly attractive to graduates holding a first academic degree and wishing to focus on a special area of medicine related studies. At the moment we offer: *Health Economics*, *Medical Physics*, *Biomedical Engineering*, and *Translational Medical Research*. Around 40 international students enroll each year in our master programs in addition to MaReCuM students.

Together with the Medical Center, our faculty forms the [UniversitätsMedizinMannheim: UMM](http://www.umm.uni-heidelberg.de).

An essential central place during your studies is our library, where you can read and borrow literature. Please check the website for further information:  
[http://www.umm.uni-heidelberg.de/bibl/index\\_en.html](http://www.umm.uni-heidelberg.de/bibl/index_en.html)

Research activities at our Medical Faculty Mannheim are primarily focussed on four thematic areas: *Oncology*, *Neuronal Plasticity*, *Vascular Medicine* and *Medical Technology*. The active participation of almost all clinics and institutes of the faculty in these areas reflect the strong interdisciplinary approach of our research. This is further strengthened through cooperation with the University of Mannheim, the University of Applied Sciences Mannheim, the German Cancer Research Centre (DKFZ), the European Molecular Biology Laboratory (EMBL), Max-Planck-Institute (MPI) for Medical Research and our sister medical faculty in Heidelberg, to name only a few.

### **3. Preamble**

#### **Qualification objectives at Heidelberg University**

In accordance with its mission statement and constitution, Heidelberg University's degree courses have subject-related, interdisciplinary and occupational objectives. They aim to provide a comprehensive academic education equipping graduates for the world of work.

Consequently, the following competence profile shall be included in module handbooks as a set of skills valid for all disciplines. It shall be applied to the specific objectives of the individual courses and then implemented in their curricula and modules.

The main points of the competence profile are the following:

- Developing subject-related skills with a pronounced research orientation
- Developing the ability to engage in interdisciplinary dialogue
- Developing practice-related problem-solving skills
- Developing personal and social skills
- Promoting the willingness to assume social responsibility on the basis of the skills acquired

#### ***Qualification objectives of the Master of Science programme in Health Economics (MScHE)***

The major aim of the Master of Science in Health Economics (MScHE) program is to provide first-class training in theoretical foundations and practical applications of health economic methods needed for decision-making, policy-making and development and research in health and health care, within the context of the ethical principles of society. More specifically, the foundation for specialization in health economics is provided through coursework in the core areas of health economics, specifically microeconomics, econometrics, and economic evaluation of health and health care programs.

In order to ensure the students have the experience and skills necessary to successfully participate in public health and health services decision-making there is an in-depth training in health systems and in economic principles that guide the organizations and functions in the health care system. Moreover, students are provided with current tools to participate in the frontier of health economic research and practice.

#### ***Subject-related qualification objectives***

The learning goals for students in the MScHE program include extensive training in modern theories and techniques in economics of health and health care used by professional health economists and active researchers in the field and their important contemporary contributions in international scholarly journals.

Students gain an understanding of the key analytical arguments in health economics and their normative foundations and ethical implications. Further, they acquire extensive knowledge of the nature and sources of socio-economic data, current challenges and major areas of research, and the role of observation, abstraction, and model construction to facilitate empirical evaluation. Moreover, students have the unique possibility to extend their existing basic knowledge in standard operating systems like Windows and get a deep inside into special statistical and modelling software like STATA and TreeAge.

### ***Interdisciplinary/Transdisciplinary qualification objectives***

Graduates of the MSc in Health Economics have the ability to:

- Seek, process and critically analyse information from different (health) economic sources in order to develop innovative and creative solutions to research problems
- Write research proposals and review articles that demonstrate independent thinking
- Communicate questions and findings with others in their field as well as in an interdisciplinary setting using a variety of media
- Select the relevant practical tools to answer research questions and work with these tools in a collaborative setting
- Design and manage projects
- Work in an international, multicultural and multidisciplinary team, actively participating in discussions
- Provide, accept and consider constructive criticism and motivate their peers

Graduates have also gained awareness towards relevant international health issues and have developed an overview of the key players involved in the national and global field of health economics.

### ***Possible career options***

The career outlook for health economists is very promising. This is underpinned by the diverse range and increasing opportunities of the application of health economics and the current demand of trained professionals (American Journal of Preventive Medicine, 2009; BMJ, 2007).

Graduating from the masters programme in Health Economics will give students job opportunities abroad and in international organizations, hospitals, health insurance companies, pharmaceutical companies, medical technology and their associations, as well as ministries, government agencies and academic institutions.

Examples for employers in academia include universities, biomedical research organizations such as those found in the Helmholtz Gemeinschaft, Blaue Liste institutions and Max-Planck institutes. Examples in the pharmaceutical industry include Bayer Schering, Merck, Roche, Sanofi Aventis, Novartis and many more.

## 4. Introduction to M.Sc. Programs

### 4.1 Structure and Timing

The M.Sc. programs offered by the Medical Faculty Mannheim follow the same basic outline. Each program starts with a two weeks introductory module accounting for 3 ECTS, which may either take the form of distance learning or on-site teaching to integrate students with different academic background. This is teaching module 1.

Teaching modules 2, 3, and 4 each run for a period of seven weeks including an exam period and are accredited with 10 or 11 ECTS (equivalent to 300 or 330 hours of student investment time). All of them require full-time attendance.

Module 2 usually starts by mid-September finishing by end-October, followed by module 3, which ends just before the Christmas break. Module 4 starts in early January so that the teaching period is finalized by end February. The remaining part of the study year is reserved for individual work: producing the thesis (usually five months) and preparing for the final exam.

Full-time students can thus finish their degree within a year. Part-time students generally take Module 1 and 2 in their first year and Module 3 and 4 in their second year.

The binding details are specified in the study and examination regulations.

### Overview teaching schedule

<b>Module 1</b>	<b>Module 2</b>	<b>Module 3</b>	<b>Module 4</b>	<b>Thesis</b>
End of August /beginning of September (2 weeks)	From mid-September to the end of October (7 weeks)	November until mid-December (7 weeks)	January until March (10-12 weeks)	April to August

The students will be informed of the exact dates before the start of term.

## 5. Content and Structure

### 5.1 Description of modules

The role of mathematical modeling and other statistical approaches in informing healthcare resource allocation decisions has been increasing over the past two decades. The M. Sc. Program “Health economics” is designed to provide students with transferrable skills that can be used in a healthcare business, in science or policy environment. Possible fields of employment for graduates are government institutions and agencies, research institutes, hospitals, health insurance companies, pharmaceutical companies, consulting companies etc. The master is divided into four teaching modules building upon one another and followed by a period of individual research work.

The first teaching module “Introduction to Economic Theory and Methods” contains two introductory self-study units: “Ethics & Health Care Policy” and “Mathematics for Economics”. Both have been designed with an expected learning time of two weeks of full-time self-study. The first unit “Ethics & Health Care Policy” provides an overview of the relationship between moral philosophy and economics, the issue of normative ethics applied to health economics, and the role of economics in allocating goods fairly and efficiently. The second unit “Mathematics for Economics” was designed to make the students familiar with mathematical tools and methods that are an important requirement for the successful passing of further units. Moreover, students will learn how these methods can be applied. These first two courses will teach the students to efficiently self-study and will motivate them by choosing the method which works best for them and which they enjoy the most. They will decide on their own when and at what pace they want to learn. Finally, this teaching module aims to show students that they are personally responsible for their own development and success.

The second coursework module “Health Economic Theory and Methods” includes four units: “Economic Policy & Law”, “Microeconomic Theory”, “Health Economic Theory” and “Resource Allocation & Economic Evaluation”. The unit “Economic Policy & Law” introduces market concepts, how they work and why they fail in the field of health care. The units “Microeconomic Theory” and “Health Economic Theory” are designed to provide an introduction to elements of microeconomic theory and health economic theories. These two units are essential for efficient and sustainable decision-making and to understand policy problems in public and private health sectors. The unit “Resource Allocation & Economic Evaluation” aims to provide students with an introduction to the basic concepts and theory of economic evaluation, which will be further developed in practical cases to promote the skills needed to critically appraise and design economic evaluations. Finally the module is followed by one week for the completion of projects, written assignments, and exams.

The third module “Health Care Systems and Statistics” consists of six units: “Health Care Financing & Policy”, “Epidemiology, Demography & Public Health”, “Health Care Organization and Management”, “Preferences and Utilities”, “Statistics for Economics” and “Industrial Economics & Competition Theory”. This teaching module builds on the foundations established in the “Health Economic Theory and Methods” and introduces students to the broader context and advanced skills required in the practice of health economics. The unit “Health Care Financing & Policy” and “Health Care Organization and Management” give an overview how health care is and can be financed. The following unit “Preferences and Utilities” enables the students to apply choice-based methods for preference elicitation and to critically appraise the methodological and normative issues surrounding utility measurements. The unit “Epidemiology, Demography & Public Health” gives an introduction to the fields of epidemiology, demography and public health, as the basics concepts of these fields are essential

for health economists. Furthermore the module prepares students for the statistics they might encounter in the field of health economics (“Statistics for Economics”). It also includes industrial economics and competition theory to evaluate the structure of and boundaries between firms and markets and the strategic interactions of firms. In addition the module is followed by one week for the completion of projects, written assignments, and exams.

The fourth and final coursework module “Applied Economic Research” focuses on advanced concepts and skill-building necessary for health economic research and practice. The final five units “Health Services Research & Policy”, “Econometrics”, “Advanced Modeling Techniques”, “Advanced Economic Evaluation Methods” and “Clinical Decision Making & Health Technology” include advanced techniques in modeling for analyzing data in economics and related disciplines to investigate economic relationships and processes. The unit “Health Services Research and Policy” promotes the skill to conduct health services research using both quantitative and qualitative methods for data collection. The objectives of the units “Advanced Economic Evaluation Methods”, “Clinical Decision Making & Health Technology” and “Econometrics” are to provide students with an in-depth understanding of advanced methods in economic evaluation of health care programs and to introduce them to the principles and application of evidence-based medicine and health technology assessment. As with the previous coursework modules, the fourth module consists of six teaching weeks, plus one week for the final preparation of projects, written assignments, and exams.

In the last semester, the Master's thesis is written, which requires the students to work independently and scientifically. The students will be supported with a thesis-writing workshop that will help the students to improve their writing and develop their research question. While writing their thesis, preparing their thesis presentation and the final oral examination, the students will be supported by their lecturer.

## 5.2 M.Sc. in Health Economics: Content and Structure

### MScHE Curriculum

<b>Module 1: Introduction in Economics Methods and Theory</b>	<b>Module 2: Health Economic Theory and Methods</b>	<b>Module 3: Health Care systems and statistics</b>	<b>Module 4: Applied Economic Research</b>	<b>Module 5: Master Thesis</b>
1.1 Ethics and Health Care Policy (2 ECTS)	2.1 Microeconomic Theory (4 ECTS)	3.1 Preferences and Utilities (1 ECTS)	4.1 Health Services Research & Policy (2 ECTS)	5.1 Master Thesis including Thesis Writing Workshop (25 ECTS)
1.2 Mathematics for Economics (1 ECTS)	2.2 Economic Policy & Law (2 ECTS)	3.2 Health Care Financing & Policy (2 ECTS)	4.2 Econometrics (2 ECTS)	5.2 Thesis Presentation and Final Oral Examination (1 ECTS)
	2.3 Health Economic Theory (2 ECTS)	3.3 Epidemiology, Demography & Public Health (2 ECTS)	4.3 Advanced Modeling Techniques (1 ECTS)	
	2.4 Resource Allocation & Economic Evaluation (2 ECTS)	3.4 Health Care Organization & Management (2 ECTS)	4.4 Advanced Economic Evaluation Methods (4 ECTS)	
		3.5 Statistics for Economics (1 ECTS)	4.5 Clinical Decision Making & Health Technology Assessment (2 ECTS)	
		3.6 Industrial Economics & Competition Theory (2 ECTS)		
<b>Total = 3 ECTS</b>	<b>Total = 10 ECTS</b>	<b>Total = 10 ECTS</b>	<b>Total = 11 ECTS</b>	<b>Total = 26 ECTS</b>

Module	Course Number	ECTS Credit	MScHE Study Investment Time (in hours)		
			Onsite Presence (Mandatory) *	Ad hoc (Supplemental) **	Self-study
1	1.1 Ethics & Health Care Policy	2	0	0	60
	1.2 Mathematics for Economics	1	0	10	20
2	2.1 Microeconomic Theory	4	30	30	60
	2.2 Economic Policy & Law	2	15	15	30
	2.3 Health Economic Theory	2	15	15	30
	2.4 Resource Allocation & Economic Evaluation	2	15	15	30
3	3.1 Preferences and Utilities	1	10	0	20
	3.2 Health Care Financing & Policy	2	15	15	30
	3.3 Epidemiology, Demography & Public Health	2	15	15	30
	3.4 Health Care Organization & Management	2	15	15	30
	3.5 Statistics for Economics	1	10	0	20
	3.6 Industrial Economics & Competition Theory	2	15	15	30
4	4.1 Health Services Research & Policy	2	15	15	30
	4.2 Econometrics	2	15	15	30
	4.3 Advanced Modeling Techniques	1	10	0	20
	4.4 Advanced Economic Evaluation Methods	4	30	30	60
	4.5 Clinical Decision Making & Health Technology Assessment	2	15	15	30

\*Lectures and Seminars

\*\*Workshops and Online Tutorials

### **Award of the M.Sc. Degree**

Students who successfully complete all of the requirements of the M.Sc. program are awarded the Master of Science from Heidelberg University represented by the Dean of the Medical Faculty Mannheim. This certificate is accompanied by a diploma supplement detailing students' individual courses taken and the corresponding assessments

## 1.1 Ethics and Health Care Policy

<p><b>Learning Objectives</b></p>	<p>On completing the course a student will be able to:</p> <ul style="list-style-type: none"> <li>• Describe core element of relevant ethical theories when discussing normative basis of economics;</li> <li>• Apply critical thinking to the assessment of ethical positions in medicine and health care;</li> <li>• Describe and discuss the ethical positions and values that are underneath policy conflicts, including historical factors that have shaped major system components, and inter-relations between health care and other public policy concerns;</li> <li>• Develop an ethical framework for understanding and analysing current policy issues, to apply the framework, and to articulate it verbally and in writing;</li> <li>• Link ethical theories and concepts to economic analysis; and</li> <li>• Assess the role of societal judgements in relation to positive and normative health economics.</li> </ul>
<p><b>Description/Design</b></p>	<p>The course provides an overview of the relationship between moral philosophy and economics, the issue of normative ethics applied to health economics, and the role of economics in allocating goods fairly and efficiently. Topics covered include morality, normative economics and moral justification in (re-)distribution and other topics, the concepts of welfare and economic efficiency; the role of ethics in positive economics, the inclusion of justice in economic evaluation.</p>
<p><b>Prerequisites</b></p>	<p>None</p>
<p><b>Assessment Methods</b></p>	<p>There will be assignments to be prepared by groups of two or maximum three students (number of authors * 1.500 words = maximum number of words permitted). The deadline of the assignment will be confirmed at the start of the course. There is usually no “right” or “wrong” when debating topics in medical ethics, it is primarily about making explicit the underlying assumptions and develop a coherent line of reasoning, weighing goods and arguments. Grading is based on formal correctness including appropriate referencing, logical outline and stringent line of reasoning and content. A succinct summary of no more than 250 words is expected. Late hand-in will lead to reduction of the grade by at least one note.</p>
<p><b>Lecturer(s)</b></p>	<p>None – self-study/distance learning course</p>
<p><b>Course Coordinator</b></p>	<p>Program Director</p>
<p><b>Literature</b></p>	<ul style="list-style-type: none"> <li>• Beauchamp TL and Childress JF. <i>Principles of Biomedical Ethics</i>. New York, NY: Oxford University Press, 2001 (5<sup>th</sup> edition).</li> <li>• Hausman DM and McPherson MS. <i>Economic Analysis and Moral Philosophy</i>. Cambridge University Press, 1996.</li> </ul> <p>Students will be provided specific reading assignments from the literature.</p>

## 1. 2 Mathematics for Economics

<b>Learning Objectives</b>	<p>On completing the course, students should be able to</p> <ul style="list-style-type: none"> <li>• Develop and solve mathematical representations of economic theories and problems and</li> <li>• Understand mathematical formulas and arguments included in the health economic literature.</li> </ul>
<b>Description/Design</b>	<p>A thorough knowledge of mathematics is needed for almost all fields of economics, including health economics. Mathematics can be viewed as a language, one that allows us to express and communicate ideas in economics. The course prepares students for the mathematics they will encounter during their studies in the MScHE program. The course is organized around problem-based learning through self-study.</p>
<b>Prerequisites</b>	None
<b>Assessment Methods</b>	<p>40% of the final grade will be based on the average problem set score          60% of the final grade will be based on the final exam score  <i>A minimum score of 60% must be achieved on the final exam in order to pass the module.</i></p>
<b>Lecturer(s)</b>	Self-study/distance learning course including two workshops
<b>Course Coordinator</b>	Program Director
<b>Literature</b>	Chiang AC, Wainwright K. <i>Fundamental Methods of Mathematical Economics</i> 2005 (4 <sup>th</sup> edition). Boston, MA: McGraw Hill.

## 2.1 Microeconomic Theory

<b>Learning Objectives</b>	<p>On completing the course a student will be able to:</p> <ul style="list-style-type: none"> <li>• Understand and solve economic problems through economic thinking;</li> <li>• Appreciate the logical structure required and be able to develop a microeconomic argument;</li> <li>• Apply the methods of microeconomics at a pre-research level (i.e. formulate research proposals in microeconomics).</li> <li>• Critically review of selected influential literature on health and development.</li> </ul>
<b>Description/Design</b>	<p>This course is intended to serve as an introduction to the field of microeconomics. In this lecture, we focus on the actors and institutions that make up an economy: Consumers, firms and the government. In the theory of the consumer, we study budget sets, preferences, optimizing behaviour, individual and aggregate demand for goods. Then, we build the theory of the firm. Key topics include technology, factor demand, cost-minimization, profit-maximization, the supply of a competitive firm, and the aggregate supply of a competitive industry. Both theories are joined in the analysis of the competitive market equilibrium. Then, we turn to the analysis of monopoly behaviour. Finally, we focus on fundamental concepts in modern economics, such as factor markets, asymmetry of information, externalities and public goods.</p>
<b>Prerequisites</b>	Mathematics for Economics
<b>Assessment Methods</b>	Assessment within the module will involve a final exam. Exercises will be assigned throughout the module as well as reports on selected scientific papers and participation.
<b>Course Coordinator</b>	Program Director
<b>Literature</b>	Hal R. Varian <i>Intermediate Microeconomics: A Modern Approach</i> 2006 (7 <sup>th</sup> Edition – International Student Edition).

## 2.2 Economic Policy & Law

<b>Learning Objectives</b>	<p>On completing the course, students should</p> <ul style="list-style-type: none"> <li>• Have a sound comprehension of the role of institutions in the economy particularly as they relate to the health sector;</li> <li>• Be ready to apply critical thinking to the analysis of the system-level questions about the economy in general and concerning health care in particular; and</li> <li>• Be able to weigh, reason and propose (policy) alternatives to address current and future economic and legal challenges in health care.</li> </ul> <p>By way of the participative teaching method that uses elements of problem-based learning, students should also</p> <ul style="list-style-type: none"> <li>• Be able to question own and other students' ideas</li> <li>• Be able to handle criticism in a constructive way</li> <li>• Be able to lead and participate in team discussions</li> </ul>
<b>Description/Design</b>	<p>The course “Economic Policy and Law” builds on the lessons learned in the course “Ethics and Health Care Policy” and is divided into three parts.</p> <p>Part 1 of the course introduces the concepts of the market and the economy as well as the mechanics of the macro-economy.</p> <p>Part 2 deals with the relationship between economic policy and health and the relationship between the market for health care and the economy.</p> <p>Part 3 surveys the topic of regulation and litigation in health care in presenting the field of Health Law and its two branches: Health Care Law and Public Health Law.</p>
<b>Prerequisites</b>	<p>Ethics and Health Care Policy</p>
<b>Assessment Methods</b>	<p>Assessment within the course will comprise of research for and writing of a critical review of 3000 words on one (1) topic (50% of the grade), and an oral presentation of this review (25%). Each student will work on one topic together with a colleague. The remaining 25% of the grade are based on quality and quantity of class participation.</p>
<b>Course Coordinator</b>	<p>Program Director</p>
<b>Literature</b>	<p>Students will be provided specific recent reading assignments from the literature appropriate for the course.</p> <p>Some examples:</p> <ul style="list-style-type: none"> <li>• Sachs, Jeffrey D., The Role of the State in the Economy: Centralization or Subsidiarity? CESifo Forum 3/2011, 40-43</li> <li>• Sage, William M., Relational Duties, Regulatory Duties and the Widening Gap between Individual Health and Collective Health Policy, Georgetown Law Journal 96 (2008), 497-522</li> <li>• Le Grand, Julian, The giants of excess: a challenge to the nation's health, Journal of the Royal Statistical Society. Series A (Statistics in Society) 171 (2008), 843-856</li> <li>• Mariner, Wendy K., Toward an Architecture of Health Law, American Journal of Law &amp; Medicine 35 (2009) 67-87</li> <li>• Gatti, Donatella/Glyn, Andrew, Welfare States in Hard Times, Oxford Reviews of Economic Policy 22 (2006), 301-312</li> <li>• Hsiao, William/Heller, Peter S., What Should Macroeconomists Know about Health Care Policy? IMF Working Paper 2007, WP/07/13</li> </ul>

### 2.3 Health Economic Theory

<b>Learning Objectives</b>	<p>On completing the course a student will be able to:</p> <ul style="list-style-type: none"> <li>• Demonstrate an in-depth understanding of key economic concepts applied to health and health care;</li> <li>• Critically appraise the relevant literature for a given topic and be able to succinctly summarize and present the key issues.</li> <li>• Present a defined topic in a coherent and stringent manner to the class</li> <li>• Respond to questions and manage a classroom discussion</li> <li>• Reflect on need for further research and be able to discuss gaps in the existing evidence / theory</li> </ul>
<b>Description/Design</b>	<p>The course will address important aspects of health care economics such as demand and demand formation, the extent of government involvement and the prevalence of health insurance, the economic behavior of providers, the presence of uncertainty at all levels, asymmetric knowledge, externalities, equality and equity, and the advantages and shortcoming of markets for medical care</p>
<b>Prerequisites</b>	<p>Ethics and Health Care Policy and Microeconomic Theory</p>
<b>Assessment Methods</b>	<p>Assessment will be based on a presentation to be assigned at the beginning of the class (counts 40%) and an exam (60%). The presentation by groups of two students should take about 20-30 minutes excluding discussion, should show a good understanding of a selected topic and should be presented in an accessible if not entertaining manner.</p> <p>The exam will be announced separately. It will last 120 minutes and will consist of a number of open questions that will not only ask for facts and content of the course but will also require critical analysis and combining theory with practical applicability.</p>
<b>Course Coordinator</b>	<p>Program Director</p>
<b>Literature</b>	<ul style="list-style-type: none"> <li>• Olson JA. <i>Principles in Health Economics and Policy</i> 2009. Oxford University Press.</li> <li>• Rice T and Unruh L. <i>The Economics of Health Reconsidered</i> 2015 (4<sup>th</sup> edition). Chicago, IL: Health Administration Press and AcademyHealth.</li> <li>• Bhattacharya J, Hyde T and Tu. P <i>Health Economics</i>. Palgrave-Macmillan 2013</li> </ul>

## 2.4 Resource Allocation and Economic Evaluation Methods

<b>Learning Objectives</b>	<p>After satisfactory completion of the course:</p> <ul style="list-style-type: none"> <li>• Students should have a sound understanding of the basic principles and theory of economic evaluation and economic modelling and its use in decision-making in the allocation of health care resources.</li> <li>• Students will have hands-on experience of how to set up basic economic models and should have basic knowledge in the most common modeling software (TreeAge).</li> <li>• Participants should be able to plan an economic evaluation and interpret/critically review published economic evaluations.</li> </ul>
<b>Description/Design</b>	<p>The course will cover the basic concepts and theory of economic evaluation, which will be further developed in practical cases. The course will cover the following topics:</p> <ul style="list-style-type: none"> <li>• Basis of Health economic evaluation (e.g. Cost-of-illness, etc.)</li> <li>• Measurement of costs</li> <li>• Measurement of outcomes (clinical effectiveness, etc.)</li> <li>• Economic evaluation theory (cost-minimization, cost-benefit, cost-effectiveness and cost-utility analyses)</li> <li>• Modelling</li> <li>• Interpretation of outputs from economic evaluations</li> <li>• Use of economic evaluation in decision-making and resource allocation</li> </ul>
<b>Prerequisites</b>	None
<b>Assessment Methods</b>	<p>40% of the final grade will be based on participation in discussions and progress report presentation for the group work. 60 % of the final grade will be based on the group project or final written exam (depending on number of students).</p>
<b>Course Coordinator</b>	Program Director
<b>Literature</b>	<p>Recommended</p> <ul style="list-style-type: none"> <li>• Drummond M, Sculpher M, Torrance G, O'Brien B, Stoddart G. <i>Methods for the Economic Evaluation of Health Care Programmes</i> 2005 (3<sup>rd</sup> edition). Oxford University Press: Oxford.</li> <li>• Applied Methods of Cost-effectiveness Analysis in Healthcare (Handbooks in Health Economic Evaluation Series), 2010, by Alistair M. Gray (Author), Philip M. Clarke (Author), et al.</li> </ul> <p>Optional</p> <ul style="list-style-type: none"> <li>• Kobelt G. <i>Health Economics - An Introduction to Economic Evaluation</i> 2002 (2<sup>nd</sup> edition). Office of Health Economics: London.</li> <li>• Briggs A, Claxton K, Schulper M. <i>Decision Modelling for Health Economic Evaluation</i> 2006. Handbooks for Health Economic Evaluation: Oxford.</li> </ul>

### 3.1 Preferences and Utilities

<b>Learning Objectives</b>	<p>On completing the course a student will be able to:</p> <ul style="list-style-type: none"> <li>• Define the terms “utility”, “value”, and “preference”, and describe and discuss their origins and historic background;</li> <li>• Apply choice-based methods for preference elicitation;</li> <li>• Critically appraise the methodological and normative issues surrounding utility measurements.</li> </ul>
<b>Description/Design</b>	<p>The course will address the conceptual foundations of, as well as measurement issue related to, “preferences” and “utilities” as the basis of “normative” health economic models and will cover the topics:</p> <ul style="list-style-type: none"> <li>• Willingness-to-Pay (WTP)</li> <li>• Revealed Preference Studies</li> <li>• Elicitation of Preferences and Contingent Valuation Studies</li> <li>• Conjoint Analysis and Discrete Choice Experiments</li> <li>• Measurement Issues</li> <li>• Expected Utility Theory (von Neumann-Morgenstern)</li> <li>• Cardinal Utility, Standard Gamble and Time Trade-Off Experiments</li> <li>• Non-Expected Utility Theories (e.g., Regret Theory, Prospect Theory)</li> <li>• Empirical and experimental results surrounding the models</li> </ul>
<b>Prerequisites</b>	Microeconomic Theory and Resource Allocation and Economic Evaluation Methods
<b>Assessment Methods</b>	Assessment is based on a written exam with open questions (80%) and quality and quantity of participation in class exercises (20%)
<b>Course Coordinator</b>	Program Director
<b>Literature</b>	<ul style="list-style-type: none"> <li>• Kahneman D and Tversky A. <i>Choices, Values, and Frames</i> 2000. Cambridge: Cambridge University Press.</li> <li>• Keeney RL and Raffia H. <i>Decisions with Multiple Objectives: Preferences and Value Trade-Offs</i> 1993. Cambridge: Cambridge University Press.</li> <li>• M. Peterson (2011): <i>An Introduction to Decision Theory</i>. Cambridge University Press.</li> <li>• Plus additional articles that will be provided before the course starts</li> </ul>

### 3.2 Health Care Financing and Policy

<p><b>Learning Objectives</b></p>	<p>On completing the course a student will be able to:</p> <ul style="list-style-type: none"> <li>• Critically assess core criteria and functions of any health care financing mechanisms and their impact on stakeholders;</li> <li>• Describe and discuss the relative advantages and disadvantages of the major international models of health care financing, with specific attention to the role of the public and private sector;</li> <li>• Understand the effect of health care financing modes on the individual household and ways to measure it;</li> <li>• Define equity, forms of measuring it and modes of achieving politically defined goals;</li> <li>• Critically assess current initiatives for health care financing and health system reform;</li> <li>• Propose alternatives in health care financing and health system reform.</li> </ul>
<p><b>Description/Design</b></p>	<p>The course provides an overview of how health care can be and is financed, the measurement of the flow of funds, the impact on the households, and innovative ways to mobilize monies for health care. Students will learn to critically assess financing innovations as well as suggest forms of measuring their impact.</p>
<p><b>Prerequisites</b></p>	<p>Ethics and Health Care Policy; Health Economic Theory</p>
<p><b>Assessment Methods</b></p>	<p>Assessment will be based on a presentation to be assigned at the beginning of the class (counts 50%) and a case study or the development of a policy brief (50%). The latter will be graded based on formal correctness including citing any major additional sources used, content, logical outline and stringent line of reasoning, and presentation and accessibility.</p>
<p><b>Course Coordinator</b></p>	<p>Program Director</p>
<p><b>Literature</b></p>	<ul style="list-style-type: none"> <li>• Donaldson C and Gerard K. <i>Economics of Health Care Financing: The Visible Hand</i> 2005 (2<sup>nd</sup> edition). New York, NY: Palgrave Macmillan.</li> <li>• O'Donnell O, van Doorslaer E, Wagstaff A and Lindelow M. <i>Analyzing Health Equity Using Household Survey Data. A Guide to Techniques and Their Implementation</i> 2008. Washington DC: World Bank. (Available for free from the World Bank's website)</li> <li>• Gottret P and G Schieber. <i>Health Financing Revisited</i> 2006. Washington DC: World Bank. (Available for free from the World Bank's web site)</li> <li>• Department of Health Systems, Financing Health Systems Services, World Health Organization: WHO Global Health Expenditure Atlas, no year &lt;2012&gt; (Available for free from WHO's web site)</li> </ul>

### 3.3 Epidemiology, Demography and Public Health

<p><b>Learning Objectives</b></p>	<p>On completing the course, the student will be able to:</p> <ul style="list-style-type: none"> <li>• Understand, explain and give examples for fundamental concepts of Public Health</li> <li>• Understand, explain and give examples for determinants of population health</li> <li>• Understand basic methods of demography research including the calculation of population demographic measures</li> <li>• Understand the hierarchy of epidemiological study designs and their specific advantages and disadvantages</li> <li>• Apply epidemiologic measures concerning disease occurrence, risk, mortality, and methods of standardization</li> <li>• Discuss critically and in a structured way the issue of causal inference in epidemiological studies and to apply criteria in a meaningful way</li> <li>• Know the definition and be able to apply the concepts of bias, confounding and interaction to the different steps of implementing epidemiological research and studies</li> <li>• Think interdisciplinary and integrate a more Public Health-related comprehensive thinking into health economic reasoning</li> <li>• Independently identify the student's own knowledge gaps and develop learning goals and strategies to attain the new knowledge in an effective way</li> </ul>
<p><b>Description/Design</b></p>	<p>The aim of the course is to provide an introduction to the fields of epidemiology, demography and public health. Being familiar with the basic concepts of these fields is essential for health economists. For example, health economists involved in the cost-benefit analyses of new technologies should be able to interpret epidemiological data to assess the potential benefit of a given medical technology or device. Also, cost-effectiveness-analyses often include systematic reviews of epidemiological studies in order to extract data on costs or benefits in a valid, reliable and comprehensive way.</p> <p>Key concepts discussed in the lectures include population health measures, demographic and epidemiological transition, demographic change, core functions of public health, population versus individual health, social determinants of health, prevention versus health promotion, the population and high-risk approach to prevention, prerequisites for screening, measures of disease occurrence (cumulative incidence, incidence rate, point prevalence, period prevalence, etc.), measures of risk (absolute risk, relative risk, odds ratios, population attributable risk, etc.), standardization of measures (direct vs. indirect standardization), needs assessment, study designs, bias, confounding and interaction as well as causal inference. This course is primarily organized around lectures, but also includes two workshops and self-study.</p> <p>Workshop (1) helps to get a deeper understanding on the relationship between demographic change and health/health systems.</p> <p>And Workshop 2) will dig deeper into core concepts of public health with a focus on needs assessment and evaluation concepts.</p>
<p><b>Prerequisites</b></p>	<p>None</p>
<p><b>Assessment Methods</b></p>	<p>Exam of multiple-choice and open questions</p> <p>Throughout the course, exercises will be assigned and worked on as part of the class. We expect the announced readings to be prepared for the classes.</p>
<p><b>Course Coordinator</b></p>	<p>Program Director</p>

<p style="text-align: center;"><b>Literature</b></p>	<ul style="list-style-type: none"><li>• Gordis L. Epidemiology 2004 (3rd Edition). Philadelphia, PA: W.B. Saunders.</li><li>• Dos Santos Silva I. Cancer Epidemiology: Principles and Methods 1999. Lyon: International Agency for Research on Cancer. The book can be downloaded free of charge at: <a href="http://www.iarc.fr/en/publications/pdfs-online/epi/cancerepi/index.php">http://www.iarc.fr/en/publications/pdfs-online/epi/cancerepi/index.php</a></li></ul> <p>Additional readings will be provided.</p>
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### 3.4 Health Care Organization and Management

<b>Learning Objectives</b>	<p>After satisfactory completion of the course:</p> <ul style="list-style-type: none"> <li>• Critically evaluate existing health care organizational models and their variations</li> <li>• Evaluate health system reforms to improve healthcare organization and population health</li> <li>• Appraise concepts of quality and critically evaluate tools and techniques used to measure and improve quality in health care</li> <li>• Think through problems and solutions of management in health care</li> </ul>
<b>Description/Design</b>	<p>The objective of this course is to enable students to enhance their understanding of how health services are structured and managed, how quality of care and overall performance is measured and how to critically evaluate the strengths and weaknesses of various approaches of organising and managing health care.</p> <p>Theory will be blended with case studies to provide students with the understanding of organisation and management of health systems.</p> <p>The course will cover the following topics:</p> <ul style="list-style-type: none"> <li>• Models of health care organisation (including service delivery) in Europe</li> <li>• Models of health care financing</li> <li>• Organising health care for an ageing population</li> <li>• Role of Health Information Systems in health care organisation</li> <li>• Role of regulatory bodies in health services management</li> <li>• Health care organisation in low-income settings</li> <li>• Global health care initiatives in the last four decades</li> <li>• Quality measurement techniques: a critical evaluation</li> <li>• How to define “management”</li> <li>• Problems and solutions in health care management</li> </ul>
<b>Prerequisites</b>	Resource Allocation
<b>Assessment Methods</b>	Presentation (50%) and written assignment based on a case study (50%). There is no exam for this course.
<b>Course Coordinator</b>	Program Director
<b>Literature</b>	<ul style="list-style-type: none"> <li>• Pavolini, E., &amp; Guillen, A M. (Eds.) (2013). Health Care Systems in Europe Under Austerity: Institutional Reforms and Performance. Palgrave Macmillan.</li> <li>• Verspohl, I. (2012). Health care reforms in Europe: convergence towards a market model? Nomos Verlagsgesellschaft.</li> <li>• Ham, C., &amp; Poweel, M. (1998). Health care reform: learning from international experience. Open University Press.</li> </ul>

### 3.5 Statistics for Economics

<b>Learning Objectives</b>	<p>On completing the course, students should be able</p> <ul style="list-style-type: none"> <li>• to understand the core concepts and theories of statistical methods applied in health economics,</li> <li>• to translate economic ideas and hypotheses to the language of applied statistics,</li> <li>• to solve simple statistical problems with the statistical software package STATA and interpret the results.</li> </ul>
<b>Description/Design</b>	<p>The objective of this course is to prepare students for the statistics they will possibly encounter in the field of health economics. The course is organized around lectures, problem-based learning through self-study and simple examples using the statistical software package STATA.</p>
<b>Prerequisites</b>	<p>Mathematics for Economics / Clinical Statistical Research</p>
<b>Assessment Methods</b>	<p>A written exam evaluating the students' understanding of basic concepts of applied statistical methods as commonly used in the area of health economics.</p>
<b>Course Coordinator</b>	<p>Program Director</p>
<b>Literature</b>	<ul style="list-style-type: none"> <li>• Naghshpour S. <i>Statistics for Economics</i>. Business Expert Press, 2012.</li> <li>• Anderson DR, Sweeney DJ, Williams TA. <i>Statistics for Business and Economics</i> (9<sup>th</sup> edition), Mason, OH: South-Western College Publishers, 2005.</li> <li>• Juul S. Frydenberg M. <i>An Introduction to STATA for Health Researchers</i>. STATA Press, 2010.</li> <li>• Altman, Douglas G.: <i>Practical Statistics For Medical Research</i>. Boca Raton, London, New York. Chapman &amp; Hall/CRC, 1991.</li> </ul>

### 3.6 Industrial Economics and Competition Theory

<b>Learning Objectives</b>	On completing the course, students will be able to assess the basic components of market structure, market conduct and market performance. They will especially be able to understand competitive interaction of firms and to differentiate between pro- and anti-competitive firm strategies in areas such as pricing, inter-firm cooperation and innovation.
<b>Description/Design</b>	Industrial economics studies and evaluates the structure of and boundaries between firms and markets and the strategic interactions of firms. The study of industrial economics in general and competition theory in particular adds to the perfectly competitive model real-world frictions such as limited information, transaction costs, costs of adjusting prices, government actions, and barriers to entry by new firms into a market that may be associated with imperfect competition.
<b>Prerequisites</b>	None
<b>Assessment Methods</b>	50% of the final grade is based on term paper and presentation performance. 50% of the final grade is based on final exam performance.
<b>Course Coordinator</b>	Program Director
<b>Literature</b>	<ul style="list-style-type: none"> <li>• Martin S. <i>Industrial Organization in Context</i> 2010. Oxford.</li> <li>• Motta M. <i>Competition Policy – Theory and Practice</i> 2004, Cambridge.</li> <li>• Hüschelrath K. <i>Competition Policy Analysis – An Integrated Approach</i> 2009, Heidelberg (available at <a href="ftp://ftp.zew.de/pub/zew-docs/economicstudies/ES_41.pdf">ftp://ftp.zew.de/pub/zew-docs/economicstudies/ES_41.pdf</a>).</li> </ul>

#### 4.1 Health Services Research and Policy

<p><b>Learning Objectives</b></p>	<p>On completing the course, students should be able to</p> <ul style="list-style-type: none"> <li>• Reflect on their role as researchers;</li> <li>• Become familiar with common terms in health services research</li> <li>• Identify and describe the most important quantitative and qualitative methods in health services research</li> <li>• Critically assess the strengths and weaknesses of different methods used in health services research</li> <li>• Consider ethical and data security aspects health services research</li> <li>• Link the role of health services research with policy and practice</li> </ul>
<p><b>Description/Design</b></p>	<p>This course aims at providing students with the basic skills to conduct health services research using both quantitative and qualitative methods for data collection. Students will first be invited to reflect on their own identity as researchers, then exposed to the most important methods in health services research. The common thread in this class will focus on challenges in designing and conducting health services research – How to translate an initial research idea into practice. Single and group work on selected case studies will be used to ensure that the students learn to apply the concepts discussed in class to the field reality.</p>
<p><b>Prerequisites</b></p>	<p>General background on health care organizations, ethics and health care policy, health care financing and policy, and health care organization and management</p>
<p><b>Assessment Methods</b></p>	<p>20% of the final grade will be based on class attendance and participation – this includes the single and group work activities managed in class 80% of the final grade will be based on the group project to be managed during the self-study and tutorial times</p>
<p><b>Course Coordinator</b></p>	<p>Program Director</p>
<p><b>Literature</b></p>	<p>Creswell, John W. (2014): Research design. Qualitative, quantitative, and mixed methods approaches. 4th ed. Los Angeles [etc.]: Sage Publications. Shi, Leiyu (2008): Health services research methods. 2en ed. Clifton Park, NY: Thomson/Delmar Learning. Griffiths, Frances (2009): Research methods for health care practice. Los Angeles: SAGE.</p>

## 4.2 Econometrics

<b>Learning Objectives</b>	<p>On completing the course students will be able to:</p> <ul style="list-style-type: none"> <li>• To be able to answer a research question in the field of health economics by choosing an appropriate econometric approach</li> <li>• Perform basic econometric analyses using the software STATA to investigate relationships in health economic studies</li> <li>• Critically assess economic literature through an understanding of econometric methods.</li> </ul>
<b>Description/Design</b>	<p>The course introduces students to theory and application of econometric methods for analyzing data in health economics and related disciplines. The module focuses on the application of methods; students will be introduced to the software package STATA analysing example datasets. At the end of the course there will be a seminar where students are expected to present and discuss application examples of econometric methods in modern health economic studies.</p>
<b>Prerequisites</b>	<p>Mathematics for Economics and Statistics for Economics</p>
<b>Assessment Methods</b>	<p>A written exam evaluating the students' understanding of basic concepts of basic econometric methods as commonly used in the area of health economics.</p>
<b>Course Coordinator</b>	<p>Program Director</p>
<b>Literature</b>	<ul style="list-style-type: none"> <li>• Dougherty C. <i>Introduction to Econometrics</i> 2007 (3<sup>rd</sup> edition). New York, NY: Oxford University Press.</li> <li>• Gujarati DN. <i>Essentials of Econometrics</i> 2006 (3<sup>rd</sup> edition). New York: McGraw-Hill/Irwin.</li> </ul>

### 4.3 Advanced Modeling Techniques

<b>Learning Objectives</b>	<p>On completing the course students will be able to:</p> <ul style="list-style-type: none"> <li>• Apply advanced modeling techniques to investigate economic relationships and processes;</li> <li>• Critically assess economic literature employing advanced modeling techniques;</li> <li>• Objectively and clearly report the results of such analyses.</li> </ul>
<b>Description/Design</b>	<p>This course provides project-based experience in advanced econometric modeling for analyzing data in economics and related disciplines, building on the foundation created in the prior course “Econometrics”. At the end of the course there will be a seminar where students are expected to present and discuss application examples of advanced modeling approaches in modern health economic studies.</p>
<b>Prerequisites</b>	<p>Mathematics for Economics, Statistics for Economics and Econometrics</p>
<b>Assessment Methods</b>	<p>A written exam evaluating the students’ understanding of basic concepts of advanced econometric modeling as commonly used in the area of health economics.</p>
<b>Course Coordinator</b>	<p>Program Director</p>
<b>Literature</b>	<ul style="list-style-type: none"> <li>• Dougherty C. <i>Introduction to Econometrics</i> 2007 (3<sup>rd</sup> edition). New York, NY: Oxford University Press.</li> <li>• Gujarati DN. <i>Essentials of Econometrics</i> 2006 (3<sup>rd</sup> edition). New York: McGraw-Hill/Irwin.</li> </ul>

#### 4.4 Advanced Economic Evaluation Methods

<p><b>Learning Objectives</b></p>	<p>After satisfactory completion of the course:</p> <ul style="list-style-type: none"> <li>• Students should be able to construct decision trees and Markov models in Excel.</li> <li>• Intelligently discuss many of the major issues facing economic evaluation today.</li> <li>• Participants should be able to plan an economic evaluation, interpret and critically appraise sensitivity analysis methods.</li> </ul>
<p><b>Description/Design</b></p>	<p>The objective of this course is to provide students with an in-depth understanding of advanced methods in economic evaluation of health care programs. Theory will be blended with practice as the course aims to provide students with practical experience in conducting and interpreting economic evaluations. The course will also stimulate critical interpretation of the outputs from economic evaluations and give an understanding of the role of health economics in decision-making in the allocation of health care resources. The course will cover the following topics:</p> <ul style="list-style-type: none"> <li>• Types and Methods of Measuring costs for Economic Evaluation</li> <li>• Measuring and Valuing Generic and Disease-Specific Outcomes for Economic Evaluation</li> <li>• Trial-based Economic Evaluations (theory and practice)</li> <li>• Decision Tree Analysis and Markov Modeling (theory and practice)</li> <li>• Parameter Uncertainty and Probabilistic Sensitivity Analysis</li> <li>• Alternative Methods of Economic Evaluations: Discrete Choice Experiments and Willingness-to-Pay Methods</li> <li>• Equity Considerations: Theoretical Debate and Practical Solutions</li> </ul>
<p><b>Prerequisites</b></p>	<p>Resource Allocation and Economic Evaluation Methods and Preferences and Utilities</p>
<p><b>Assessment Methods</b></p>	<p>Presentation (40%) and practical model assignment based on Markov model (60%). There is no exam for this course.</p>
<p><b>Course Coordinator</b></p>	<p>Program Director</p>
<p><b>Literature</b></p>	<ul style="list-style-type: none"> <li>• Drummond M et al. <i>Methods for the Economic Evaluation of Health Care Programmes</i> 2005 (3rd edition). New York: Oxford University Press.</li> <li>• Briggs AH, Sculpher MJ, Claxton K. <i>Decision modelling for health economic evaluation</i>. Oxford University Press, New York. 2006.</li> </ul>

## 4.5 Clinical Decision Making and Health Technology Assessment

<b>Learning Objectives</b>	<p>On completing the course a student will be able to:</p> <ul style="list-style-type: none"> <li>- Describe and apply the search for the best evidence through systematic review and selection of sources of evidence</li> <li>- Be able to critically appraise and synthesise the results, taking into account patient values, clinical experience, and cost;</li> <li>- apply results at the individual and population/policy levels;</li> <li>- Critically assess the uses and limitations of EBM, HTA and economic evaluation clinical medicine</li> <li>- Describe and discuss the impact of EBM, HTA, and clinical guidelines on the informational, managerial and economic aspects of providing medical care</li> </ul>
<b>Description/Design</b>	<p>The course introduces the principles and application of evidence-based medicine (EBM); methods of health technology assessment (HTA), including international experience and current controversies; and clinical decision analysis. There are four key questions to be disentangled (i) “Can it work?” (Efficacy), (ii) “Does it work?” (Effectiveness), (iii) “Is it worth it?” (Economic value, efficiency), and (iv) “Should I use it here and now?” (Clinical decision-making).</p>
<b>Prerequisites</b>	<p>Resource Allocation and Economic Evaluation Methods</p>
<b>Assessment Methods</b>	<p>The assessment will be based on (a) the input to the discussions during the visit of the pfm production facilities (50%) and (b) a presentation of about 15 minutes on a topic concerning HTA (50%).</p>
<b>Course Coordinator</b>	<p>Program Director</p>
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. M Hunink and P Glasziou. Decision Making in Health and Medicine: Integrating Evidence and Values. Cambridge: Cambridge University Press, 2001.</li> <li>2. DB Petitti. Meta-Analysis, Decision Analysis, and Cost-Effectiveness Analysis. Methods for Quantitative Synthesis in Medicine. New York, NY: Oxford University Press. 2000 (2nd edition).</li> <li>3. DL Sackett, et al. Evidence-based Medicine: How to Practice and Teach EBM. Edinburgh: Churchill Livingstone, 2000.</li> <li>4. C Donaldson, M Mugford and L Vale (eds.). Evidence-based Health Economics. London: BMJ Books, 2002.</li> </ol>

## 5.1 Thesis writing workshop

<b>Learning Objectives</b>	<p>On completing the course students will be able to:</p> <ul style="list-style-type: none"> <li>- Format their thesis according to the guidelines</li> <li>- Structure and plan their thesis</li> <li>- Explain and justify their research question</li> <li>- Understand writing as a process</li> <li>- Overcome writing problems through exercises and writing prompts</li> </ul>
<b>Description/Design</b>	<p>This workshop addresses potential problems that students encounter when writing their research. The thesis guidelines will be explained and illustrated with examples to improve thesis structure and formalities.</p> <p>The second part of this workshop focuses on writing difficulties and how to overcome them. Looking at writing as a process will help to improve the students' writing experience. The students will work on their thesis ideas and develop their research questions through writing exercises.</p>
<b>Prerequisites</b>	-
<b>Assessment Methods</b>	-
<b>Course Coordinator</b>	Program Director
<b>Literature</b>	<ul style="list-style-type: none"> <li>• Flower, L., &amp; Hayes, J. R. (1981). A cognitive process theory of writing. <i>College composition and communication</i>, 32(4), 365-387.</li> <li>• Elbow, P. (1973). <i>Freewriting</i>. Taken from <i>Writing Without Teachers</i>. New York: Oxford UP, 1973, 1-7. <a href="http://faculty.buffalostate.edu/wahlstrl/eng309/Freewriting.pdf">http://faculty.buffalostate.edu/wahlstrl/eng309/Freewriting.pdf</a></li> </ul>

## 6. Examinations

Three different types of exams contribute to your final overall grade:

- those taken during the taught part of the program to assess continuously the increase in knowledge and skills
- the thesis as the written part of the final Master exam
- the thesis presentation and disputation as the oral part of the final Master exam

The average weighted grades of the continuous assessments account for half of the final overall grade. Weighted means that the 'value' of a grade depends on the ECTS conferred to the respective module.

The Master exam accounts for the other half, whereby the thesis is weighted threefold, the oral exam one fold.

The continuous assessment – i.e. exams linked directly to the taught courses / modules - can take different forms, for example:

- written under direct supervision (including multiple choice questions)
- written essays as take-home exams
- oral as presentations or posters (including discussions)
- oral held by a lecturer as Q&A
- practical exam assessing your skills

In any case, at the beginning of each module, the responsible module coordinator has to announce how the module will be assessed and when it will take place (exam date). This information also should be communicated in writing (by email and pinboard, that is an E-learning platform). You have the right to request this information in case this announcement might be forgotten.

All details are defined in the examination regulations, which is the legally binding document (see annex).

## 7. Student Feedback Mechanisms

The Dean of Study at Medical Faculty Mannheim, the Program Directors and the Module Coordinators, and administrative staff are all committed to providing the highest quality learning experience for students studying at Heidelberg University. To this end, a variety of formal and informal feedback mechanisms are made available to encourage students' input into how the program can be improved both in the short-term, i.e. within the current year, and in the long-term development and running of the course.

All students are encouraged to informally provide feedback by bringing their suggestions and concerns directly and immediately to the person concerned, to any M.Sc. program staff member to which they feel comfortable sharing their confidences.

More formal mechanisms for feedback are also provided:

### Ongoing evaluation of teaching

Electronic evaluations of lectures and lecturers are collected at the end of the modules anonymously. We highly appreciate your continuous active participation in these activities. Your feedback is used by the 'steering committee' to review the program and is a very valuable resource in further improving the program.

### Alumni surveys

Regularly, the Medical Faculty Mannheim is collecting information from graduates regarding their educational experience in retrospect and their professional career after graduation. The aim of such surveys is to improve our student services and adjust the academic training portfolio to the changing professional demands. We would like to ask you kindly to support us in future by keeping us updated on address changes and by answering such questionnaires.

### Complaint mechanisms

If issues arise related to the M.Sc. program that cannot be (or were not satisfactorily) resolved through the processes established at program level, students may choose to submit their concern in writing to the Study Dean or his/her representative for the Master programs at the Study Dean's Office (House 24, 1<sup>st</sup> floor), the International Office (Akademisches Auslandsamt, Seminarstr. 2, Heidelberg), and/or the Equal Opportunities Office (Gleichstellungsbüro, House 24, 1<sup>st</sup> floor), depending on the nature of the problem.