Module Manual

Master of Science (M.Sc.)

Global Innovation Management

Joint Master

Cohort: Winter Term 2020

Updated: 30th April 2020

Table of Contents

Program description

Content

The MSc. in Global Innovation Management (GIM) is a unique 2-year programme offered jointly by the **University of Strathclyde** (Scotland), **Aalborg University** (Denmark) and **Hamburg University of Technology** (Germany) which enables graduates of first degrees in engineering, science and technology to successfully manage the innovation process across international boundaries.

Students have the opportunity to study at two European Universities, with the programme's delivery over two years providing a greater depth of learning, more industrial engagement and a rich cultural experience.

Career prospects

Graduates, supported by a network of valuable contacts, enter the international employment market working:

- with enterprises dealing with high end technological products and services
- as consultants making technology assessment and innovation /change management
- with governmental institutes dealing with innovation policy and strategy
- with relevant research and higher education institutions.

Learning target

The program equips students with skills to transform research outputs into innovative products and services. Learning the tools and techniques for working globally, students apply this knowledge practically by working on projects with industry contacts in different countries, further enhancing their understanding of international business. GIM addresses new challenges in innovative global enterprise and provides:

- A practical and global perspective of Innovation Management, through industry based modules
- Skills applicable for larger multinational organisations to smaller enterprises
- Expanded perspectives of Innovation Management including Technology Management, R&D, and Product/Service Development with focus on the interface between disciplines involved in the process;
- Increased research capability focused on activities at the periphery of the innovation process.

Program structure

The programme is fulltime over 24 months and divided into 4 semesters of study. All students take a common first year at the University of Strathclyde, then either deepen through further seminar based study at Hamburg, or through a Problem Based Learning approach to an innovation problem within a company in Aalborg.

Semesters 1 and 2 at **The University of Strathclyde** provide a strong foundation in the Innovation Management process, and essential practical experience of working within globally distributed teams and with industrial clients on product/service development briefs.

Semester 3 (Year 2) at **Hamburg University of Technology** looks at early and late phases of the innovation management process. It concentrates on market research for (radical) innovation, cross functional cooperation at the front end of the innovation process, managing innovation projects over geographical and functional/divisional boarders and preparing the market introduction of new products and services.

In semester 3 (Year 2) at **Aalborg University**, students undertake an industrial internship at a Danish company to gain relevant global innovation management work experience, and to consolidate the taught content delivered at the University of Strathclyde. Each internship will be designated to best reflect student's interests within the available placements from a secured list of Danish companies.

In semester 4 all students undertake a thesis project at the institution where they spent the 3rd semester.

Core qualification

The MSc. in Global Innovation Management (GIM) is a unique 2-year programme offered jointly by the **University of Strathclyde** (Scotland), **Aalborg University** (Denmark) and **Hamburg University of Technology** (Germany) which enables graduates of first degrees in engineering, science and technology to successfully manage the innovation process across international boundaries.

Students have the opportunity to study at two European Universities, with the programme's delivery over two years providing a greater depth of learning, more industrial engagement and a rich cultural experience.

The course equips students with skills to transform research outputs into innovative products and services. Learning the tools and techniques for working globally, students apply this knowledge practically by working on projects with industry contacts in different countries, further enhancing their understanding of international business. GIM addresses new challenges in innovative global enterprise and provides:

- A practical and global perspective of Innovation Management, through industry based modules
- Skills applicable for larger multinational organisations to smaller enterprises
- Expanded perspectives of Innovation Management including Technology Management, R&D, and Product/Service Development with focus on the interface between disciplines involved in the process;
- Increased research capability focused on activities at the periphery of the innovation process.

Module M0524: Non-technical Courses for Master

Module Responsible	Dagmar Richter
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
	The Nontechnical Academic Programms (NTA) imparts skills that, in view of the TUHH's training profile, professional engineering studies require but are not able to cover fully. Self-reliance, self-management, collaboration and professional and personnel management competences. The department implements these training objectives in its **teaching architecture**, in its **teaching and learning arrangements**, in **teaching areas** and by means of teaching offerings in which students can qualify by opting for **specific competences** and a **competence level** at the Bachelor's or Master's level. The teaching offerings are pooled in two different catalogues for nontechnical complementary courses. **The Learning Architecture** consists of a cross-disciplinarily study offering. The centrally designed teaching offering ensures that courses in the nontechnical academic programms follow the specific profiling of TUHH degree courses.

	The learning architecture demands and trains independent educational planning as regards the individual development of competences. It also provides orientation knowledge in the form of “profiles”. The subjects that can be studied in parallel throughout the student’s entire study program - if need be, it can be studied in one to two semesters. In view of the adaptation problems that individuals commonly face in their first semesters after making the transition from school to university and in order to encourage individually planned semesters abroad, there is no obligation to study these subjects in one or two specific semesters during the course of studies. **Teaching and Learning Arrangements** provide for students, separated into B.Sc. and M.Sc., to learn with and from each other across semesters. The challenge of dealing with interdisciplinarity and a variety of stages of learning in courses are part of the learning architecture and are deliberately encouraged in specific courses.
Knowledge	**Fields of Teaching** are based on research findings from the academic disciplines cultural studies, social studies, arts, historical studies, communication studies, migration studies and sustainability research, and from engineering didactics. In addition, from the winter semester 2014/15 students on all Bachelor’s courses will have the opportunity to learn about business management and start-ups in a goal-oriented way. The fields of teaching are augmented by soft skills offers and a foreign language offer. Here, the focus is on encouraging goal-oriented communication skills, e.g. the skills required by outgoing engineers in international and intercultural situations. **The Competence Level** of the courses offered in this area is different as regards the basic training objective in the Bachelor’s and Master’s fields. These differences are reflected in the practical examples used, in content topics that refer to different professional application contexts, and in the higher scientific and theoretical level of abstraction in the B.Sc. This is also reflected in the different quality of soft skills, which relate to the different team positions and different group leadership functions of Bachelor’s and Master’s graduates in their future working life. **Specialized Competence (Knowledge)** Students can • explain specialized areas in context of the relevant non-technical disciplines, • outline basic theories, categories, terminology, models, concepts or artistic techniques in the disciplines represented in the learning area, • different specialist disciplines relate to their own discipline and differentiate it as well as make connections, • sketch the basic outlines of how scientific disciplines, paradigms, models, instruments, methods and forms of representation in the specialized sciences are subject to individual and socio-cultural interpretation and historicity, • Can communicate in a foreign language in a manner appropriate to the subject.
Skills	**Professional Competence (Skills)** In selected sub-areas students can • apply basic and specific methods of the said scientific disciplines, • aquestion a specific technical phenomena, models, theories from the viewpoint of another, aforementioned specialist discipline, • to handle simple and advanced questions in aforementioned scientific disciplines in a sucsessful manner, • justify their decisions on forms of organization and application in practical questions in contexts that go beyond the technical relationship to the subject.

Personal Competence	
Social Competence	**Personal Competences (Social Skills)** Students will be able • to learn to collaborate in different manner, • to present and analyze problems in the abovementioned fields in a partner or group situation in a manner appropriate to the addressees, • to express themselves competently, in a culturally appropriate and gender-sensitive manner in the language of the country (as far as this study-focus would be chosen), • to explain nontechnical items to auditorium with technical background knowledge.
Autonomy	**Personal Competences (Self-reliance)** Students are able in selected areas • to reflect on their own profession and professionalism in the context of real-life fields of application • to organize themselves and their own learning processes • to reflect and decide questions in front of a broad education background • to communicate a nontechnical item in a competent way in writen form or verbaly • to organize themselves as an entrepreneurial subject country (as far as this study-focus would be chosen)
Workload in Hours	Depends on choice of courses
Credit points	6

Courses
Information regarding lectures and courses can be found in the corresponding module handbook published separately.

Module M0815: Product Planning

Courses

Title	Typ	Hrs/wk	CP
Product Planning (L0851)	Project-/problem-based Learning	3	3
Product Planning Seminar (L0853)	Project-/problem-based Learning	2	3

Module Responsible	Prof. Cornelius Herstatt
Admission Requirements	None
Recommended Previous Knowledge	Good basic-knowledge of Business Administration
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	

Knowledge	Students will gain insights into:
	• Product Planning
	  ◦ Process
	  ◦ Methods
	• Design thinking
	  ◦ Process
	  ◦ Methods
	  ◦ User integration

Skills	Students will gain deep insights into:
	• Product Planning
	  ◦ Process-related aspects
	  ◦ Organisational-related aspects
	  ◦ Human-Ressource related aspects
	  ◦ Working-tools, methods and instruments
	  ◦

Personal Competence	
Social Competence	• Interact within a team • Raise awareness for globabl issues
Autonomy	• Gain access to knowledge sources • Interpret complex cases • Develop presentation skills
Workload in Hours	Independent Study Time 110, Study Time in Lecture 70
Credit points	6

Course achievement	Compulsory	Bonus	Form	Description
	Yes	20 %	Subject theoretical and practical work	

Examination	Written exam
Examination duration and scale	90 minutes

Assignment for the Following Curricula	Global Innovation Management: Core qualification: Compulsory International Management and Engineering: Specialisation I. Electives Management: Elective Compulsory Mechanical Engineering and Management: Specialisation Management: Elective Compulsory Product Development, Materials and Production: Specialisation Product Development: Elective Compulsory Product Development, Materials and Production: Specialisation Production: Elective Compulsory Product Development, Materials and Production: Specialisation Materials: Elective Compulsory Theoretical Mechanical Engineering: Specialisation Product Development and Production: Elective Compulsory Theoretical Mechanical Engineering: Technical Complementary Course: Elective Compulsory

Course L0851: Product Planning	
Typ	Project-/problem-based Learning
Hrs/wk	3
CP	3
Workload in Hours	Independent Study Time 48, Study Time in Lecture 42
Lecturer	Prof. Cornelius Herstatt
Language	EN
Cycle	WiSe
Content	Product Planning Process This integrated lecture is designed to understand major issues, activities and tools in the context of systematic product planning, a key activity for managing the front-end of innovation, i.e.: • Systematic scanning of markets for innovation opportunities • Understanding strengths/weakness and specific core competences of a firm as platforms for innovation • Exploring relevant sources for innovation (customers, suppliers, Lead Users, etc.) • Developing ideas for radical innovation, relying on the creativeness of employees, using techniques to stimulate creativity and creating a stimulating environment • Transferring ideas for innovation into feasible concepts which have a high market attractively Voluntary presentations in the third hour (articles / case studies) - Guest lectures by researchers - Lecture on Sustainability with frequent reference to current research - Permanent reference to current research Examination: In addition to the written exam at the end of the module, students have to attend the PBL-exercises and prepare presentations in groups in order to pass the module. Additionally, students have the opportunity to present research papers on a voluntary base. With these presentations it is possible to gain a bonus of max. 20% for the exam. However, the bonus is only valid if the exam is passed without the bonus.
Literature	Ulrich, K./Eppinger, S.: Product Design and Development, 2nd. Edition, McGraw-Hill 2010

Course L0853: Product Planning Seminar	
Typ	Project-/problem-based Learning
Hrs/wk	2
CP	3
Workload in Hours	Independent Study Time 62, Study Time in Lecture 28
Lecturer	Prof. Cornelius Herstatt
Language	EN
Cycle	WiSe
Content	Seminar is integrative part of the Module Product Planning (for content see lecture) and can not be choosen independantly.
Literature	See lecture information "Product Planning".

Module M1035: Corporate Entrepreneurship & Growth

Courses

Title	Typ	Hrs/wk	CP
Corporate Entrepreneurship in the Digital Age (L1281)	Seminar	3	4
Entrepreneurial Finance (L1282)	Seminar	2	2

Module Responsible	Prof. Christoph Ihl
Admission Requirements	None
Recommended Previous Knowledge	Basic knowledge in business economics and finance obtained in the compulsory modules and participation in the module “Technology Entrepreneurship” is highly recommended.
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	Wissen (subject-related knowledge and understanding): • understand similarities and differences between corporate and start-up entrepreneurship • recognize the distinct nature and specific elements of corporate entrepreneurship in the context of established and international organizations • understand the different forms of corporate entrepreneurship • understand their own managerial styles, attitudes and preferences for corporate versus start-up entrepreneurship • understand the pros and cons of different valuation methods • understand the interests of venture capital funds • understand the pros and cons of different growth and exit options
Skills	Fertigkeiten (subject-related skills): • be able to apply an entrepreneurial approach to operations of a department or functional area within established organizations • assess the environment within established companies in terms of support or constraints for entrepreneurship • identify creative ways to overcome obstacles to entrepreneurship in established companies • be able to formulate corporate objectives and strategies that support entrepreneurial behavior • evaluate entrepreneurial opportunities in contexts of established corporations • develop concepts for new businesses out of established company contexts • value entrepreneurial opportunities in financial terms • apply different valuation methods • evaluate the attractiveness of financial contracts • design VC term sheets • design employee contracts in terms of financial compensation • design financial contracts and conduct financial negotiations • assess and justify possible growth and exit options
Personal Competence	
Social Competence	Sozialkompetenz (Social Competence): • team work • communication and presentation • give and take critical comments

	• engaging in fruitful discussions
Autonomy	Selbständigkeit (Autonomy): • autonomous work and time management • project management • analytical skills
Workload in Hours	Independent Study Time 110, Study Time in Lecture 70
Credit points	6
Course achievement	**Compulsory** **Bonus** **Form** **Description** Yes 20 % Group discussion
Examination	Subject theoretical and practical work
Examination duration and scale	Presentations and case study work
Assignment for the Following Curricula	Global Innovation Management: Core qualification: Elective Compulsory Global Technology and Innovation Management & Entrepreneurship: Core qualification: Elective Compulsory International Management and Engineering: Specialisation I. Electives Management: Elective Compulsory Mechanical Engineering and Management: Specialisation Management: Elective Compulsory

Course L1281: Corporate Entrepreneurship in the Digital Age	
Typ	Seminar
Hrs/wk	3
CP	4
Workload in Hours	Independent Study Time 78, Study Time in Lecture 42
Lecturer	Dr. Hannes Lampe
Language	EN
Cycle	WiSe
Content	This is a 4 ECTS course as part of the module “Corporate Entrepreneurship & Growth”. Emerging paradigms of digital technology, such as industrial internet of things, blockchain, artificial intelligence, digital fabrication and 3D printing, are fundamentally transforming the competitive landscape and the nature of many companies in a wide range of industries. Where digital technologies become critical to the development of new products, services and business models, incumbent corporations in traditional industries suddenly face entirely new competition from purely digital players. Building a corporate capability to master digital innovation becomes a key success factor to establish and maintain market leadership. This course places students into the role of corporate managers, who need to understand the strategic implications of new digital technology, identify organizational strengths and barriers to (re-) act, design new business models that may fundamentally clash with existing ones, and organize broader digital transformation initiatives. We will draw upon recent international scientific findings from the context of digital corporate venturing. Upon completion of this course, students will be able to: · Derive industry-specific implications of digital technologies for value creation and capture. · Identify organizational sources of corporate (non-) responsiveness to digital opportunities. · Contribute to the design and implementation of digitally enhanced business models. · Evaluate options of organizational transformation by corporate venturing as well as open platforms and ecosystems. · Contribute to organization and leadership of corporate-wide digital transformation initiatives. Course language is English. In this course, value is created interactively, that

	means it mainly consists of student presentations and group discussions, structured and moderated by the instructors. This in turn requires that everyone has prepared the relevant materials in advance of each session. Please devote significant time to do so! All the great ideas relevant to this course topic cannot be found in a single textbook. Therefore, we have curated an up-to-date and colourful mix of materials in two different kinds: (1) academic & managerial papers, and (2) case studies. Please refer to the detailed course schedule for the assignment of paper presentations and case memos to specific participants. For your paper presentations you may also include additional references, whereas the case memos should only be based on the cases. Even if you are not assigned a specific paper or case, you should have prepared core materials to participate in the discussion. For the common team project, we cooperate with real companies from the Hamburg metropolitan region to contribute to their strategic intent of embracing new digital technology. Student assessment will be based on four aspects with the following grading scheme: · 20%: Participation in class discussions on papers and case studies. · 20%: One paper presentation of 20 minutes length plus 10 minutes discussion: 20%. · 20%: Two case memos (2 pages) that summarize in bullet points your answers to assigned questions for two case studies. · 40%: Final project on a real digital transformation project delivered as 30 minutes presentation plus 15 minutes discussion by teams of four students.
Literature	· Agrawal, Ajay, Joshua Gans and Avi Goldfarb. “The Simple Economics of Machine Intelligence”. Harvard Business Review, November (2016). · Amit, Raphael, and Christoph Zott. "Creating Value Through Business Model Innovation" MIT Sloan Management Review 53.3 (2012): 41-49. · Birkinshaw, Julian, Alexander Zimmermann, and Sebastain Raisch. "How Do Firms Adapt to Discontinuous Change?" California Management Review, 58.4 (2016): 36-58. · Bower, Joseph L., and Clayton M. Christensen. "Disruptive technologies: Catching the wave." Harvard Business Review, 73.1 (1995): 43-53. · Campbell, A., Birkinshaw, J., Morrison, A., & van Basten Batenburg, R. "The future of corporate venturing: companies undertake venturing for a variety of reasons." MIT Sloan Management Review 45.1 (2003): 30-38. · Casadesus-Masanell, Ramon, and Joan E. Ricart. "How to Design A Winning Business Model" Harvard Business Review January-February (2011): 1-9. · Chakravorti, Bhaskar. "A Note on Corporate Entrepreneurship: Challenge or Opportunity?" HBS Case: 9-810-145 (2010). · Charitou, Constantinos D., and Constantinos C. Markides. "Responses to disruptive strategic innovation." MIT Sloan Management Review, 44.2 (2002): 55-64. · Chesbrough, Henry W. "Making Sense of Corporate Venture Capital" Harvard Business Review, March (2002): 4-11. · Christensen, Clayton M. and Stephen P. Kaufman."Assessing Your Organization’s Capabilities: Resources, Processes, and Priorities" Module Note: HBS 9-607-014 (2008). · Christensen, Clayton M., and Michael Overdorf. "Meeting the Challenge of Disruptive Change" Harvard Business Review, March-April (2009): 1-10. · D'Aveni, Richard. “The 3-D Printing revolution.” Harvard Business Review, May (2015): 40-48. · Gans, Joshua. "The other disruption." Harvard Business Review, March (2016): 80-84. · Iansiti, Marco, and Karim R. Lakhani. "Digital Ubiquity: How Connections, Sensors, and Data Are Revolutionizing Business." Harvard Business Review, November (2014): 1-11. · Johnson, Mark W., Clayton M. Christensen, and Henning Kagermann. "Reinventing Your Business Model" Harvard Business Review December (2008): 2-10. · Kavadias, Stelios, Kostas Ladas, and Christoph Loch. "The Transformative Business Model: How to tell if you have one." Harvard Business Review, October (2016): 91-98. · King, Andrew A., and Baljir Baatartogtokh. "How Useful Is the Theory of Disruptive Innovation?." MIT Sloan Management Review, 57.1 (2015): 77-90. · Ransbotham, Sam. “Blockchain Data Storage May (Soon) Change Your Business Model”. Sloan Management Review, April (2016).

	· Shih, Willy. "Competency-Destroying Technology Transitions: Why the Transition to Digital Is Particularly Challenging" Note: HBS 9-613-024 (2013). · Tapscott, Don, and Alex Tapscott. “The Impact of the Blockchain Goes Beyond Financial Services”. Harvard Business Review, May (2016). · Vermeulen, Freek. "How Acquisitions Can Revitalize Companies." MIT Sloan Management Review, 46.4 (2005): 45-51. · Wolcott, Robert C., and Michael J. Lippitz. "The four models of corporate entrepreneurship." MIT Sloan Management Review, 49.1 (2007): 75-82. · Zilis, Shivon, and James Cham. “The Competitive Landscape for Machine Intelligence”. Harvard Business Review, November (2016).

Course L1282: Entrepreneurial Finance	
Typ	Seminar
Hrs/wk	2
CP	2
Workload in Hours	Independent Study Time 32, Study Time in Lecture 28
Lecturer	Dr. Hannes Lampe
Language	EN
Cycle	WiSe
Content	This course examines the elements of entrepreneurial finance, focusing on technology-based start-up ventures and the early stages of company development. The course addresses key questions relevant to both startup and corporate entrepreneurs: How much money can and should be raised? When should it be raised and from whom? What is a reasonable valuation of the company? How should funding, employment contracts and exit decisions be structured? This course will focus on the finance principles related to the risk & return of venture capital, the valuation of high growth companies, the capital structure specific to venture capital-backed companies, and investment decisions under uncertainty. Three main topics will be covered: (1) New business opportunity valuation: Most time will be devoted to the understanding and application of tools to valuate early stage business opportunities and high-growth companies versus mature companies. Standard tools for financial and liquidity planning as well as discounted cash flow valuation will be applied to startup situations. Furthermore, the venture capital method, analysis of comparables and the real options approach to valuation are introduced. (2) Financing and employment contracts: We will discuss the main sources of financing that entrepreneurs can choose from. Particular emphasis will be put on venture capital funds and their fund raising process. The design of financial contracts will be analyzed in terms of addressing information and incentive problems in uncertain environments. Employment contracts will be motivated as a compensation device to attract and retain key employees. (3) Growth and exit strategies: We will discuss entrepreneurs' option to grow or exit. Liquidity events are considered such as initial public offering, sale or merger as compared to independent growth as a private company. We also examine later stage options such as mezzanine financing and buy-outs and the specifics of international growth. Guest lecturers will present the latest trends in these areas. The ideal audience for the course will be students who are interested in technology entrepreneurship, either at startups or within larger organizations. It is also useful for those pursuing careers in corporate finance or valuation consulting.
Literature	Metrick, Andrew, and Ayako Yasuda. Venture Capital and the Finance of Innovation. Wiley, 2010. Leach, J., and Ronald Melicher. Entrepreneurial finance. Cengage Learning, 2011. Selected cases will be made available during class.

Module M1260: Project Seminar Innovation Marketing

Courses

Title	Typ	Hrs/wk	CP
Seminar Innovation Marketing (L0759)	Project Seminar	4	6

Module Responsible	Prof. Christian Lüthje
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	Students can... • understand the process and the tools of market analysis for innovations (e.g. market potential, market growth, market segmentation) • explain the concepts of target customers, market definition and market growth • select the appropriate approach for leading a competitive analysis • explain the key market-related issues (strengths and weaknesses) of technology-based business opportunities
Skills	Students are capable of... • analyzing the market potential of inventions and innovative business ideas by using appropriate methods. • investigating whether a market is still open for a given innovation and develop a first concept for the market entry strategy and the marketing mix. • searching for relevant information (primary and secondary market data). • analyzing, aggregating, and interpreting the gathered data and giving well founded recommendations based on the findings. • writing a scientific report that includes the literature background as well as the development of their methods, their results, conclusions and recommendations.
Personal Competence	
Social Competence	Students are able to... • assess possible consequences of their own decisions. • define required tasks to find a solution for a given problem. • make elaborated decisions in an real-world innovation context. • assess their own performance in a team.
Autonomy	The work in teams over an entire semester and the interaction with professionals, experts and project partners outside the unviersity will support the students in their competenece to access the required information that is needed for making well-founded decisions with a high level of trust in the own capabilties.
Workload in Hours	Independent Study Time 124, Study Time in Lecture 56
Credit points	6
Course achievement	None
Examination	Subject theoretical and practical work
Examination duration and	approx. 40 pages written elaboration, presentation, oral participation

scale	
Assignment for the Following Curricula	Global Innovation Management: Core qualification: Compulsory

Course L0759: Seminar Innovation Marketing	
Typ	Project Seminar
Hrs/wk	4
CP	6
Workload in Hours	Independent Study Time 124, Study Time in Lecture 56
Lecturer	Prof. Christian Lüthje
Language	EN
Cycle	WiSe
Content	**General description of course content and course goals** The aim of the course is to give students an insight into the practice of technology exploitation and innovation marketing. The technologies and product concepts are provided by so called idea providers. These idea providers may be, among others, researchers at universities and project teams working in research institutions with a technical invention or (prospective) entrepreneurs with a business idea. Within the course the student teams will analyze the market potential of technology-based inventions or business ideas. They will define potential target customers in the market. Another important question to answer is, whether the market is still receptive for a given invention, or whether competitors have already exploited the full market potential. Finally, the student teams will also develop first ideas for the design of the marketing mix and write a report that is also handed to the idea providers. **Summarizing the most important contents** The students will find answers to the following fundamental questions: • What are the key features of the invention? • What is the unique selling point? • What is the most attractive application field? • Who are the target customers? • What are their needs and how can they be met? • What is the market potential of innovations? • What resources are necessary to exploit this market potential? • How can/should they enter the market? **Professional Competence** **Knowledge** Students can... • understand the process and the tools of market analysis for innovations (e.g. market potential, market growth, market segmentation) • explain the concepts of target customers, market definition and market growth • select the appropriate approach for leading a competitive analysis • explain the key market-related issues (strengths and weaknesses) of technology-based business opportunities **Skills** Students are capable of... • analyzing the market potential of inventions and innovative business ideas by using appropriate methods.

	• investigating whether a market is still open for a given innovation and develop a first concept for the market entry strategy and the marketing mix. • searching for relevant information (primary and secondary market data). • analyzing, aggregating, and interpreting the gathered data and giving well founded recommendations based on the findings. • writing a scientific report that includes the literature background as well as the development of their methods, their results, conclusions and recommendations. **Personal Competence** **Social Competence** Students can... • provide appropriate feedback and handle feedback on their own performance constructively. • enter into a dialogue with formerly unknown fellow students, participate in discussions, and present well-grounded arguments. • constructively interact with their team members and lead team sessions and group work processes. • develop joint solutions and come to decisions in mixed teams and present the results to others. **Self-Reliance** Students are able to... • assess possible consequences of their own decisions. • define required tasks to find a solution for a given problem. • make elaborated decisions in an real-world innovation context. • assess their own performance in a team.
Literature	Gruber, Marc, Ian C. MacMillan, and James D. Thompson (2008), “Look Before You Leap: Market Opportunity Identification in Emerging Technology Firms,” Management Science, 54 (September), 1652-1665. Danneels, Erwin (2007), “The Process of Technological Competence Leveraging,” Strategic Management Journal, 28 (February), 511-533

Module M1601: Foundations of Corporate Management (GTIME)

Courses

Title	Typ	Hrs/wk	CP
Foundations of Business Management (L2417)	Project Seminar	2	3
Foundations of International Management (L2419)	Project Seminar	2	3

Module Responsible	Dr. Stephan Buse
Admission Requirements	None
Recommended Previous Knowledge	
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	
Skills	
Personal Competence	
Social Competence	
Autonomy	
Workload in Hours	Independent Study Time 124, Study Time in Lecture 56
Credit points	6
Course achievement	None
Examination	Written elaboration
Examination duration and scale	90 Minuten
Assignment for the Following Curricula	Global Innovation Management: Core qualification: Elective Compulsory Global Technology and Innovation Management & Entrepreneurship: Core qualification: Compulsory

Course L2417: Foundations of Business Management	
Typ	Project Seminar
Hrs/wk	2
CP	3
Workload in Hours	Independent Study Time 62, Study Time in Lecture 28
Lecturer	Dr. Stephan Buse
Language	EN
Cycle	WiSe
Content	In addition to the classical lecture approach, case study analyses and the implementation of a business simulation are used. This course teaches the relevant elements of strategic business management. It covers various areas of business administration (e.g. strategic management and aspects of marketing). Upon completion of the course, students should understand different perspectives on the topics and know in which situations which tools can be used and what the limitations of these models/concepts are. Students will be able to integrate future strategy and business model concepts into the taxonomy of approaches. The course thus provides an introduction to the most important principles and concepts necessary to understand how companies operate in today's business world. This includes the analysis of an extremely dynamic, increasingly globalizing competitive environment as well as the analysis of the required internal (core) competencies. It also aims to develop analytical skills that facilitate problem-solving and strategic decision-making activities in companies. In addition to the classical lecture approach, case study analyses and the execution of a business simulation are used.
Literature	Johnson et al.: Strategisches Management - Eine Einführung: Analyse, Entscheidung und Umsetzung, Pearson Studium, 12. Auflage Michael E. Porter: Wettbewerbsstrategie: Methoden zur Analyse von Branchen und Konkurrenten, Campus Verlag, 12. Auflage Prahalad, C.K./ Hamel, G.: The Core Competence of the Corporation, in: Business Review, 68/3 1990 Kim, W.C./ Mauborgne, R.: Blue Ocean Strategy, in: Harvard Business Review, October 2004

Course L2419: Foundations of International Management	
Typ	Project Seminar
Hrs/wk	2
CP	3
Workload in Hours	Independent Study Time 62, Study Time in Lecture 28
Lecturer	Dr. Stephan Buse
Language	EN
Cycle	SoSe
Content	This course covers the basics of international management. Among other things, students learn about various forms of market selection and market entry strategies as well as methods for determining the optimal time to enter foreign markets. In addition to the classical lecture approach, case study analyses and the execution of a business simulation are used.
Literature	

Module M0820: International Business

Courses

Title	Typ	Hrs/wk	CP
Business-to-Business Marketing (L0762)	Lecture	2	2
Intercultural Management and Communication (L0846)	Lecture	2	2
International Management (L0157)	Lecture	2	2

Module Responsible	Prof. Christian Lüthje
Admission Requirements	None
Recommended Previous Knowledge	Bachelor-level knowledge in marketing and (international) strategic management; basic understanding of market segmentation, modes of market entry, strategic management, pricing theory and marketing instruments. The previous knowledge which is required for this module is taught by e-learning modules. Students receive access data and information regarding the online learning module after enrolment at TUHH.
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	

Knowledge	The students will develop a thorough understanding of the following:
	
	• Selling to organizations and marketing strategies in B2B markets
	• Relevant theories, methods and tools for operational B2B marketing
	• Relevant theories for intercultural communication
	• Theoretical knowledge of
	  ◦ the importance of globalization for firms and the challenges facing companies in the context of their international operations;
	  ◦ methods of measuring the internationalization degree of companies and the resulting practical implications;
	  ◦ target market strategies, market entry strategies and foreign operation modes and allocation strategies;
	  ◦ different types of international organizational structures (e.g. global organization, network organization, transnational organization);
	  ◦ "culture" and its impact on human interaction;
	  ◦ important aspects of (intercultural) communication issues.
	  ◦ methods of analysis and assessment of market entry risks by applying modern theories such as the “Innovator’s Dilemma” framework;
	  ◦ modes of cooperation such as prime contractor and consortium models and their industrial cooperation related advantages and disadvantages;
	  ◦ special methods of assessment of specific country risks;

	The students will be able to apply this knowledge to • identify and systematically address relevant partners when selling to business organizations; • place, price and communicate industrial products with the help state-of-the-art B2B marketing tools; • define the specifics of global industries and respond to them deriving appropriate practical recommendations (global competitors, regional consumers, local and global suppliers, etc.); • derive advantages and disadvantages of different target market, market entry, timing and allocation strategies;

Skills	• apply the theoretical knowledge to business cases or real examples (e.g. internationalization processes of well-known hotel chains or franchise companies, etc.); • interpret symbols, rituals and gestures appropriately in an intercultural context. **Based on these skills, the students will be able to** • analyze market-entry options and market positioning in B2B markets; • systematically analyze, work up and present information needed for making the decision for or against internationalization of company's operations and regarding HOW, WHEN and WHAT; • analyze and evaluate risks in the context of international business operations; • decide which mode of market entry (e.g. franchising) yields most potential; • make methodically based internationalization decisions as well as master the specifics of strategic management in an international context and apply concrete planning processes; • develop strategies when approaching international client companies and manage relationships with complex client entities; • develop sophisticated market-entry strategies and to position innovative industrial goods in global business-to-business markets; • develop communication strategies in the domain of industrial goods, develop pricing plans by applying state-of-the-art tools like Vickrey-auctions to measure willingness-to-pay and methods such as tender-bidding models. • solve complex operating planning tasks independently or in a team applying appropriate methods and comprehensibly present the results of their analysis; • identify problems and resolve cultural issues in multi-cultural teams and in intercultural collaborations • successfully manage cultural diversity.
Personal Competence	
Social Competence	The students will be able to • have fruitful professional discussions; • present and defend the results of their work in a group of students; • work successfully in multi-cultural teams • communicate and collaborate successfully and respectfully with others, also on an intercultural basis.
Autonomy	The students will be able to • acquire knowledge in the specific context independently and to map this knowledge onto other new complex problem fields.

Workload in Hours	Independent Study Time 96, Study Time in Lecture 84			
Credit points	6			
Course achievement	**Compulsory**	**Bonus**	**Form**	**Description**
	Yes	5 %	Excercises	
Examination	Subject theoretical and practical work			
Examination duration and scale	3 written tests during the semester			
Assignment for the Following Curricula	Global Innovation Management: Core qualification: Compulsory International Management and Engineering: Core qualification: Compulsory			

Course L0762: Business-to-Business Marketing

Typ	Lecture
Hrs/wk	2
CP	2
Workload in Hours	Independent Study Time 32, Study Time in Lecture 28
Lecturer	Prof. Christian Lüthje
Language	EN
Cycle	WiSe
Content	**Contents** Business-to-business (B2B) markets play an important role in most economies. At the same time, B2B markets differ strongly from consumer goods markets. For example, companies' buying decisions follow different rules than those of consuming individuals. Consequently, marketing mix decisions in B2B markets need to follow the specific circumstances in such markets. The aim of this lecture is to enable students to understand the specifics of marketing in B2B markets. At the beginning, students learn which strategic marketing decisions may be most appropriate in industrial markets. Following that, the lecture will focus more on different options to design marketing mix elements - Pricing, Communication and Distribution - in B2B markets. We extend the student's basic knowhow in marketing and focus on the specific requirements in B2B markets. Topics • The importance, specific characteristics and developments of B2B markets today • Organizational buying behavior and the corporate buying process • B2B marketing strategies regarding modes and time of market entry with focus on innovative industrial products • Types of project-related cooperation in the B2B project business • Specific operational marketing methods in communication (success factors of fares and exhibitions, importance of public relations for B2B markets); pricing (measuring willingness-to-pay via auctions; value-based pricing in industrial markets, bidding models and auctioning); distribution and channel strategies for B2B markets • Marketing in complex value chains: Solving the problem of direct customers' unwillingness to adopt innovative products by directly addressing indirect customers **Knowledge** The students will develop a thorough understanding of: • How organizations and firms buy • How marketing can be performed in complex value chains • Promising market and competitive strategies in B2B markets • Modes of cooperation in B2B markets • Marketing-Mix decisions in B2B marketing (communication, pricing, distribution) **Skills** • analyzing the advantages and disadvantages of different target market, market entry, timing and allocation strategies; • identifying and systematically address relevant partners when selling to business organizations; • developing context-specific market-entry and timing strategies; • making appropriate decisions for the pricing and communication of industrial products; • applying the theoretical knowledge to business cases or real examples **Social Competence** The students will be able to

	• having fruitful professional discussions; • presenting and defending the results of their work in groupwork; **Self-reliance** • acquiring knowledge in the specific context independently and to map this knowledge onto other new complex problem fields. **Assessment** Written examination & Class participation in interactive elements (presentations, homework)
Literature	Blythe, J., Zimmerman, A. (2005) Business-to-Business Marketing: A global perspective, London, Thomson Monroe, K. B. (2002). Pricing: Making Profitable Decisions, 3 rd Edition Morris, M., Pitt, L., Honeycutt, E. (2001), Business-to-Business Marketing, New York, Sage Publishing, 3rd Edition Nagle, T., Hogan, J., Zale, J. (2009), Strategy and Tactics of Pricing, New York, Prentice Hall, 5th Edition

Course L0846: Intercultural Management and Communication	
Typ	Lecture
Hrs/wk	2
CP	2
Workload in Hours	Independent Study Time 32, Study Time in Lecture 28
Lecturer	Dr. Rajnish Tiwari
Language	EN
Cycle	WiSe
Content	Globalization of business processes and the revolution in information and communication technologies (ICT) have resulted in distributed workflows across geographic boundaries. These developments as well as increased immigration emanating, for example, as a consequence of a shortage of skilled labour in many industrialized nations, have led to the creation of (virtual) multi-cultural, multi-ethnic teams with diverse cultural backgrounds. Such diversity generally has a positive impact on creativity and innovativeness, as many empirical studies confirm. Nevertheless, varying cultural practices, communication styles, and contextual sensibilities have the potential to disturb or even disrupt collaborative work processes, if left unmanaged. This course focuses on inter-cultural management from both, theoretical as well as practical, points of view to provide a solid fundament to students enabling them to operate successfully in cross-cultural settings. Case studies and guest lecture(s) will be used to provide added practical relevance to the course. In addition, where practicable, student assignments will be used to foster autonomous learning. Some of the main topics covered in this course include: • Understanding “culture” and its impact on human interaction • Verbal and non-verbal communication • High and low context communication • Role of formality and non-formality in communication • Varying interpretations of symbols, rituals & gestures • Managing diversity in domestic settings
Literature	• Bartlett, C.A. / Ghoshal, S. (2002): Managing Across Borders: The Transnational Solution, 2nd edition, Boston • Deresky, H. (2006): International Management: Managing Across Borders and Cultures, 3rd edition, Upper Saddle River • French, R. (2010): Cross-cultural Management in Work Organisations, 2nd edition, London • Hofstede, G. (2003): Culture's Consequences : Comparing Values, Behaviors, Institutions and Organizations across Nations, 2nd edition, Thousand Oaks • Hofstede, G. / Hofstede, G.J. (2006): Cultures and Organizations: Software of the mind, 2nd edition, New York

Course L0157: International Management	
Typ	Lecture
Hrs/wk	2
CP	2
Workload in Hours	Independent Study Time 32, Study Time in Lecture 28
Lecturer	Prof. Thomas Wrona
Language	EN
Cycle	WiSe
Content	Growing internationalization of companies and increased globalization require dealing with operations and specifics of international management as well as creating an understanding of intercultural differences. In order to help the students to understand these specifics and challenges accompanying international companies, the course will be divided in the following parts: • Important Aspects in International Management • Theories of Internationalization • Specific characteristics of international companies and their strategies • Organizational Structure and Leadership in international companies During the course, the content will be covered from a theoretical as well as a practical point of view by using examples of different companies. In order to provide practical relevance to the course, a guest speaker from a well-known international company will be invited or alternatively a company visit will be organized as well as an analysis of a case study will take place.
Literature	1. Course notes and materials provided before the lecture. 2. Selected books: ◦ Bartlett/Ghoshal (2002): Managing Across Borders, The Transnational Solution, 2nd edition, Boston ◦ Buckley, P.J./Ghauri, P.N. (1998), The Internationalization of the Firm, 2nd edition ◦ Czinkota, Ronkainen, Moffett, Marinova, Marinov (2009), International Business, Hoboken ◦ Dunning, J.H. (1993), The Globalization of Business: The Challenge of the 1990s, London ◦ Ghoshal, S. (1987), Global Strategy: An Organizing Framework, Strategic Management Journal, p. 425-440 ◦ Praveen Parboteeah, K.,Cullen, J.B. (2011) , Strategic International Management, International 5th Edition ◦ Rugman, A.M./Collinson, S. (2012): International Business, 6th Edition, Essex 2012

Module M0814: Technology Management

Courses

Title	Typ	Hrs/wk	CP
Technology Management (L0849)	Project-/problem-based Learning	3	3
Technology Management Seminar (L0850)	Project-/problem-based Learning	2	3

Module Responsible	Prof. Cornelius Herstatt
Admission Requirements	None
Recommended Previous Knowledge	Bachelor knowledge in business management
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	

Knowledge	Students will gain deep insights into:
	• International R&D-Management
	• Technology Timing Strategies
	  ◦ Technology Strategies and Lifecycle Management (I/II)
	  ◦ Technology Intelligence and Planning
	• Technology Portfolio Management
	  ◦ Technology Portfolio Methodology
	  ◦ Technology Acquisition and Exploitation
	  ◦ IP Management
	• Organizing Technology Development
	  ◦ Technology Organization & Management
	  ◦ Technology Funding & Controlling

Skills	The course aims to: • Develop an understanding of the importance of Technology Management - on a national as well as international level • Equip students with an understanding of important elements of Technology Management (strategic, operational, organizational and process-related aspects) • Foster a strategic orientation to problem-solving within the innovation process as well as Technology Management and its importance for corporate strategy • Clarify activities of Technology Management (e.g. technology sourcing, maintenance and exploitation) • Strengthen essential communication skills and a basic understanding of managerial, organizational and financial issues concerning Technology-, Innovation- and R&D-management. Further topics to be discussed include: • Basic concepts, models and tools, relevant to the management of technology, R&D and innovation • Innovation as a process (steps, activities and results)
Personal Competence	
Social Competence	• Interact within a team • Raise awareness for globabl issues
	• Gain access to knowledge sources

Autonomy	• Discuss recent research debates in the context of Technology and Innovation Management • Develop presentation skills • Discussion of international cases in R&D-Management
Workload in Hours	Independent Study Time 110, Study Time in Lecture 70
Credit points	6
Course achievement	None
Examination	Written exam
Examination duration and scale	90 minutes
Assignment for the Following Curricula	Global Innovation Management: Core qualification: Compulsory International Management and Engineering: Specialisation I. Electives Management: Elective Compulsory Mechanical Engineering and Management: Specialisation Management: Elective Compulsory Biomedical Engineering: Specialisation Artificial Organs and Regenerative Medicine: Elective Compulsory Biomedical Engineering: Specialisation Implants and Endoprostheses: Elective Compulsory Biomedical Engineering: Specialisation Medical Technology and Control Theory: Elective Compulsory Biomedical Engineering: Specialisation Management and Business Administration: Compulsory

Course L0849: Technology Management	
Typ	Project-/problem-based Learning
Hrs/wk	3
CP	3
Workload in Hours	Independent Study Time 48, Study Time in Lecture 42
Lecturer	Prof. Cornelius Herstatt
Language	EN
Cycle	WiSe
Content	The role of technology for the competitive advantage of the firm and industries; Basic concepts, models and tools for the management of technology; managerial decision making regarding the identification, selection and protection of technology (make or buy, keep or sell, current and future technologies). Theories, practical examples (cases), lectures, interactive sessions and group study. This lecture is part of the Module Technology Management and can not separately choosen.
Literature	Leiblein, M./Ziedonis, A.: Technology Strategy and Inoovation Management, Elgar Research Collection, Northhampton (MA) 2011

Course L0850: Technology Management Seminar	
Typ	Project-/problem-based Learning
Hrs/wk	2
CP	3
Workload in Hours	Independent Study Time 62, Study Time in Lecture 28
Lecturer	Prof. Cornelius Herstatt
Language	EN
Cycle	WiSe
Content	Beside the written exam at the end of the module, students have to give one presentation (RE) on a research paper and two presentations as part of a group discussion (GD) in the seminar in order to pass. With these presentations it is possible to gain a bonus of max. 20% for the exam. However, the bonus is only valid if the exam is passed without the bonus.
Literature	see lecture Technology Management.

Thesis

Master-Thesis

Module M-002: Master Thesis

Courses

Title	Typ	Hrs/wk	CP

Module Responsible	Professoren der TUHH
Admission Requirements	• According to General Regulations §21 (1): At least 60 credit points have to be achieved in study programme. The examinations board decides on exceptions.
Recommended Previous Knowledge	
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	• The students can use specialized knowledge (facts, theories, and methods) of their subject competently on specialized issues. • The students can explain in depth the relevant approaches and terminologies in one or more areas of their subject, describing current developments and taking up a critical position on them. • The students can place a research task in their subject area in its context and describe and critically assess the state of research.
Skills	The students are able: • To select, apply and, if necessary, develop further methods that are suitable for solving the specialized problem in question. • To apply knowledge they have acquired and methods they have learnt in the course of their studies to complex and/or incompletely defined problems in a solution-oriented way. • To develop new scientific findings in their subject area and subject them to a critical assessment.
Personal Competence	
Social Competence	Students can • Both in writing and orally outline a scientific issue for an expert audience accurately, understandably and in a structured way. • Deal with issues competently in an expert discussion and answer them in a manner that is appropriate to the addressees while upholding their own assessments and viewpoints convincingly.
	Students are able: • To structure a project of their own in work packages and to work them off accordingly.

Autonomy	• To work their way in depth into a largely unknown subject and to access the information required for them to do so. • To apply the techniques of scientific work comprehensively in research of their own.
Workload in Hours	Independent Study Time 900, Study Time in Lecture 0
Credit points	30
Course achievement	None
Examination	Thesis
Examination duration and scale	According to General Regulations
Assignment for the Following Curricula	Civil Engineering: Thesis: Compulsory Bioprocess Engineering: Thesis: Compulsory Chemical and Bioprocess Engineering: Thesis: Compulsory Computer Science: Thesis: Compulsory Electrical Engineering: Thesis: Compulsory Energy and Environmental Engineering: Thesis: Compulsory Energy Systems: Thesis: Compulsory Environmental Engineering: Thesis: Compulsory Aircraft Systems Engineering: Thesis: Compulsory Global Innovation Management: Thesis: Compulsory Computational Science and Engineering: Thesis: Compulsory Information and Communication Systems: Thesis: Compulsory International Management and Engineering: Thesis: Compulsory Joint European Master in Environmental Studies - Cities and Sustainability: Thesis: Compulsory Logistics, Infrastructure and Mobility: Thesis: Compulsory Materials Science: Thesis: Compulsory Mathematical Modelling in Engineering: Theory, Numerics, Applications: Thesis: Compulsory Mechanical Engineering and Management: Thesis: Compulsory Mechatronics: Thesis: Compulsory Biomedical Engineering: Thesis: Compulsory Microelectronics and Microsystems: Thesis: Compulsory Product Development, Materials and Production: Thesis: Compulsory Renewable Energies: Thesis: Compulsory Naval Architecture and Ocean Engineering: Thesis: Compulsory Ship and Offshore Technology: Thesis: Compulsory Teilstudiengang Lehramt Metalltechnik: Thesis: Compulsory Theoretical Mechanical Engineering: Thesis: Compulsory Process Engineering: Thesis: Compulsory Water and Environmental Engineering: Thesis: Compulsory Certification in Engineering & Advisory in Aviation: Thesis: Compulsory