Module Manual

Master of Science (M.Sc.)

Global Technology and Innovation Management & Entrepreneurship

Joint Master

Cohort: Winter Term 2020

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Program description

Content

The MSc. in **Global Technology and Innovation Management & Entrepreneurship (G-TIME)** is a unique 2-year programme offered jointly by a consortium of internationally renowned universities. The consortium consists of following partners: **Aalborg University** (Denmark), **Kaunas University of Technology** (Lithuania), **Manipal University** (India), **Ritsumeikan Asia Pacific University** (Japan), **Hamburg University of Technology** (Germany) and **University of Strathclyde** (Scotland).

The MSc. G-TIME 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 different universities. The program starts off in Hamburg (Germany) where all students spend the first year (1st & 2nd semester) together. During the second year (3rd & 4th semester) students deepen their G-TIME knowledge at one of the international partner institutions.

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. G-TIME 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 including start-ups
- 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 Hamburg University of Technology. Depending on their special interests they choose one of the international partner institutions for the second year.

Semesters 1 and 2 at Hamburg University of Technology provide a strong foundation in the field of Technology and Innovation Management. They look 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 addition, they provide a foundation in the field of Entrepreneurship.

The course content of semester 3 (year 2) depends on which partner institution is chosen. Based on their specific core competencies each partner offers courses which complement / deepen the study program of the first year.

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

Core qualification

The MSc. in **Global Technology and Innovation Management & Entrepreneurship (G-TIME)** is a unique 2-year programme offered jointly by a consortium of internationally renowned universities. The consortium consists of following partners: **Aalborg University** (Denmark), **Kaunas University of Technology** (Lithuania), **Manipal University** (India), **Ritsumeikan Asia Pacific University** (Japan), **Hamburg University of Technology** (Germany) and **University of Strathclyde** (Scotland).

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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	
	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,

Social Competence	• 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 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 M1600: Mindfulness and Communication

Courses

Title	Typ	Hrs/wk	CP
Mindfulness and Leadership (L2421)	Project Seminar	2	2
Intercultural Competencies (L2420)	Lecture	2	2
Communication Skills (L2422)	Project Seminar	2	2

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 96, Study Time in Lecture 84
Credit points	6
Course achievement	None
Examination	Written elaboration
Examination duration and scale	90 Minuten
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Core qualification: Compulsory

Course L2421: Mindfulness and Leadership	
Typ	Project Seminar
Hrs/wk	2
CP	2
Workload in Hours	Independent Study Time 32, Study Time in Lecture 28
Lecturer	Prof. Cornelius Herstatt, Sandra-Luisa Moschner
Language	EN
Cycle	WiSe
Content	Mindfulness defines a situation, in which a person is mentally present without being distracted from thoughts or emotions. These are neither analyzed nor judged. Mindfulness is an important element of the Buddhist tradition and is taught through mindfulness-based stress reduction (MBSR)-trainings, Yoga, and meditation approaches in western culture. Until today, effects of mindfulness are tested and studied in medical and psychological clinical contexts. However, nowadays it is also part of the new work trend and enters the business context. During the seminar different mindfulness practices are presented, practiced and their effects on creativity, innovation, and entrepreneurship are discussed.
Literature	Csiksdentmihalyi, M. (1990). Flow. The Psychology of Optimal Experience. HarperCollins. Williams, M., Penman, D. (2011). Mediation im Alltag. Gelassenheit finden in einer hektischen Welt. Arkana. Murnieks, C. Y. et al. (In Press). Close your eyes or open your mind: Effects of sleep and mindfulness exercises on entrepreneurs' exhaustion. Journal of Business Venturing. Byrne, E. K., Thatchenkery, T. (2018). How to Use Mindfulness to Increase Your Team's Creativity. Harvard Business Review. Memmert, D. (2007). Can Creativity Be Improved by an Attention-Broadening Training Program? An Exploratory Study Focusing on Team Sports. Creativity Research Journal 19 (2-3), S. 281-291. Den Heijer, P. et al. (2017). Don’t Forget to Breathe: A Controlled Trial of Mindfulness Practices in Agile Project Teams. Working Paper.

Course L2420: Intercultural Competencies	
Typ	Lecture
Hrs/wk	2
CP	2
Workload in Hours	Independent Study Time 32, Study Time in Lecture 28
Lecturer	Dr. Stephan Buse, 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 L2422: Communication Skills	
Typ	Project Seminar
Hrs/wk	2
CP	2
Workload in Hours	Independent Study Time 32, Study Time in Lecture 28
Lecturer	Prof. Cornelius Herstatt, Dummy Dozent
Language	EN
Cycle	WiSe
Content	The purpose of this course is to equip students with important communication skills to successfully navigate the dynamic world of professionals dealing with innovation. Students will explore the field of communication by getting in touch with different communication models, like the Schramm model of communication. Successfully communicating complex ideas in a simple, yet engaging way is key to bring about change in organizations. Here, proficiency with tools like PowerPoint is crucial to create compelling visual support. Also, future change makers need to bring together perspectives in multidisciplinary and increasingly intercultural teams. Being able to give and receive feedback in a constructive way is equally important. Communication will be discussed in these different facets in an interactive format and a focus on practical application.
Literature	Kratzer, J., Leenders, O. T. A., & Engelen, J. M. V. (2004). Stimulating the potential: Creative performance and communication in innovation teams. Creativity and Innovation Management, 13(1), 63-71. Hoegl, M., & Gemuenden, H. G. (2001). Teamwork quality and the success of innovative projects: A theoretical concept and empirical evidence. Organization science, 12(4), 435-449. Schram, W. E. (1954). The process and effects of mass communication. Thach, E. C. (2002). The impact of executive coaching and 360 feedback on leadership effectiveness. Leadership & Organization Development Journal, 23(4), 205-214. Löwgren, J., & Stolterman, E. (2004). Thoughtful interaction design: A design perspective on information technology. MIT Press.

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 M1599: Technology Management (GTIME)

Courses

Title	Typ	Hrs/wk	CP
Technology Management (GTIME) (L2423)	Project-/problem-based Learning	3	3
Technology Management Seminar (GTIME) (L2424)	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
Autonomy	• Gain access to knowledge sources • 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 min
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Core qualification: Compulsory

Course L2423: Technology Management (GTIME)	
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, Dummy Dozent
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 be separately choosen.
Literature	Leiblein, M./Ziedonis, A.: Technology Strategy and Inoovation Management, Elgar Research Collection, Northhampton (MA) 2011

Course L2424: Technology Management Seminar (GTIME)	
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, Dummy Dozent
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.

Module M1602: Product Planning (GTIME)

Courses

Title	Typ	Hrs/wk	CP
Product Planning (GTIME) (L2425)	Project-/problem-based Learning	3	3
Product Planning Seminar (GTIME) (L2426)	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	None
Examination	Written exam
Examination duration and scale	90 min

Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Core qualification: Compulsory

Course L2425: Product Planning (GTIME)	
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, Dummy Dozent
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
Literature	Ulrich, K./Eppinger, S.: Product Design and Development, 2nd. Edition, McGraw-Hill 2010

Course L2426: Product Planning Seminar (GTIME)	
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, Dummy Dozent
Language	EN
Cycle	WiSe
Content	Seminar is integrative part of the Module Product Planning (GTIME). For content see lecture information. The seminar can not be choosen independantly.
Literature	See lecture information "Product Planning".

Module M1590: Project Seminar Innovation Marketing (GTIME)

Courses

Title	Typ	Hrs/wk	CP
Seminar Innovation Marketing (GTIME) (L2427)	Project Seminar	4	6

Module Responsible	Prof. Christian Lüthje
Admission Requirements	None
Recommended Previous Knowledge	
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 scale	approx. 40 pages written elaboration, presentation, oral participation
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Core qualification: Compulsory

Course L2427: Seminar Innovation Marketing (GTIME)	
Typ	Project Seminar
Hrs/wk	4
CP	6
Workload in Hours	Independent Study Time 124, Study Time in Lecture 56
Lecturer	Prof. Christian Lüthje, Dummy Dozent
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 M0855: Marketing (Sales and Services / Innovation Marketing)

Courses

Title	Typ	Hrs/wk	CP
Marketing of Innovations (L2009)	Lecture	4	4
PBL Marketing of Innovations (L0862)	Project-/problem-based Learning	1	2

Module Responsible

Prof. Christian Lüthje

Admission Requirements

None

Recommended Previous Knowledge

- Module International Business
- Basic understanding of business administration principles (strategic planning, decision theory, project management, international business)
- Bachelor-level Marketing Knowledge (Marketing Instruments, Market and Competitor Strategies, Basics of Buying Behavior)
- Unerstanding the differences beweetn B2B and B2C marketing
- Understanding of the importance of managing innovation in global industrial markets
- Good English proficiency; presentation skills

Educational Objectives

After taking part successfully, students have reached the following learning results

Professional Competence

Knowledge

Students will have gained a deep understanding of

- Specific characteristics in the marketing of innovative poroducts and services
- Approaches for analyzing the current market situation and the future market development
- The gathering of information about future customer needs and requirements
- Concepts and approaches to integrate lead users and their needs into product and service development processes
- Approaches and tools for ensuring customer-orientation in the development of new products and innovative services
- Marketing mix elements that take into consideration the specific requirements and challenges of innovative products and services
- Pricing methods for new products and services
- The organization of complex sales forces and personal selling
- Communication concepts and instruments for new products and services

Skills

Based on the acquired knowledge students will be able to:

- Design and to evaluate decisions regarding marketing and innovation strategies
- Analyze markets by applying market and technology portfolios
- Conduct forecasts and develop compelling scenarios as a basis for strategic planning
- Translate customer needs into concepts, prototypes and marketable offers and successfully apply advanced methods for customer-oriented product and service development
- Use adequate methods to foster efficient diffusion of innovative products and services
- Choose suitable pricing strategies and communication activities for innovations
- Make strategic sales decisions for products and services (i.e. selection of sales channels)
- Apply methods of sales force management (i.e. customer value analysis)

Personal

Competence	
Social Competence	The students will be able to • have fruitful discussions and exchange arguments • develop original results in a group • present results in a clear and concise way • carry out respectful team work
Autonomy	The students will be able to • Acquire knowledge independently in the specific context and to map this knowledge on other new complex problem fields. • Consider proposed business actions in the field of marketing and reflect on them.
Workload in Hours	Independent Study Time 110, Study Time in Lecture 70
Credit points	6
Course achievement	None
Examination	Subject theoretical and practical work
Examination duration and scale	Written elaboration, excercises, presentation, oral participation
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: 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 L2009: Marketing of Innovations	
Typ	Lecture
Hrs/wk	4
CP	4
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Lecturer	Prof. Christian Lüthje
Language	EN
Cycle	SoSe
Content	I. Introduction • Innovation and service marketing (importance of innovative products and services, model, objectives and examples of innovation marketing, characteristics of services, challenges of service marketing) II. Methods and approaches of strategic marketing planning • patterns of industrial development, patent and technology portfolios III. Strategic foresight and scenario analysis • objectives and challenges of strategic foresight, scenario analysis, Delphi method IV. User innovations • Role of users in the innovation process, user communities, user innovation toolkits, lead users analysis V. Customer-oriented Product and Service Engineering • Conjoint Analysis, Kano, QFD, Morphological Analysis, Blueprinting VII. Pricing • Basics of Pricing, Value-based pricing, Pricing models VIII. Sales Management • Basics of Sales Management, Assessing Customer Value, Planning Customer Visits IX. Communications • Diffusion of Innovations, Communication Objectives, Communication Instruments
Literature	**Mohr, J., Sengupta, S., Slater, S. (2014). Marketing of high-technology products and innovations, third edition, Pearson education. ISBN-10: 1292040335 . Chapter 6 (188-210), Chapter 7 (227-256), Chapter 10 (352-365), Chapter 12 (419-426).** Crawford, M., Di Benedetto, A. (2008). New products management, 9th edition, McGrw Hill, Boston et al., 2008 Christensen, C. M. (1997). Innovator's Dilemma: When New Technologies Cause Great Firms to Fail, Harvard Business Press, Chapter 1: How can great firms fail?,pp. 3-24. Hair, J. F., Bush, R. P., Ortinau, D. J. (2009). Marketing research. 4 th edition, Boston et al., McGraw Hill Tidd; J. & Hull, Frank M. (Editors) (2007) Service Innovation, London Von Hippel, E.(2005). Democratizing Innovation, Cambridge: MIT Press

Course L0862: PBL Marketing of Innovations	
Typ	Project-/problem-based Learning
Hrs/wk	1
CP	2
Workload in Hours	Independent Study Time 46, Study Time in Lecture 14
Lecturer	Prof. Christian Lüthje
Language	EN
Cycle	SoSe
Content	This PBL course is seggregated into two afternoon sessions. This cours aims at enhancing the students' practical skills in (1) forecasting the future development of markets and (2) making appropriate market-related decisions (particularly segmentation, managing the marketing mix). The students will be prompted to use the knowledge gathered in the lecture of this module and will be invited to (1) Conduct a scenario analysis for an innovative product category and (2) Engage in decision making wtihin a market simulation game.
Literature	

Module M1358: Global Innovation Management

Courses

Title	Typ	Hrs/wk	CP
Managing Global Innovation (L1933)	Project-/problem-based Learning	3	3
Managing Global Innovation - Seminar (L1934)	Seminar	2	3

Module Responsible	Dr. Stephan Buse
Admission Requirements	None
Recommended Previous Knowledge	Basic knowledge of innovation management and globalisation
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	Students learn about economic theories and models that underlie innovation management in an increasingly globalized world. Particular attention is paid to emerging countries such as India and China, but also to other countries in Africa, Asia and South America, as they are becoming increasingly important as innovation locations and sales markets in global economic competition. The following theories/models will be dealt with in the modules/ sessions: • Lead Market Theory • Frugal Innovations • Open Innovation Approach • Transnational Model • Internationalisation of Research & Development
Skills	By means of the theories and models discussed, students are enabled to analyse the significance and effects of globalisation from an economic as well as a business perspective. Furthermore, they learn to assess the competitiveness of entrepreneurial innovation strategies and innovation locations.
Personal Competence	
Social Competence	After successful completion of the module, students can work together purposefully and respectfully in (inter)national teams. In addition, they can conduct subject-specific discussions on issues of global innovation management and present and represent the results of their work in accordance with the requirements of the professional world.
Autonomy	Upon successful completion of the module, students can conduct case studies on global innovation management issues independently and/or as part of a team. They are able to independently select and apply adequate analysis tools and to reflect their analysis results self-critically.
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 min
Assignment for	

the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Core qualification: Compulsory

Course L1933: Managing Global Innovation	
Typ	Project-/problem-based Learning
Hrs/wk	3
CP	3
Workload in Hours	Independent Study Time 48, Study Time in Lecture 42
Lecturer	Dr. Stephan Buse, Dr. Rajnish Tiwari
Language	EN
Cycle	SoSe
Content	Students learn about economic theories and models that underlie innovation management in an increasingly globalized world. Particular attention is paid to emerging countries such as India and China, but also to other countries in Africa, Asia and South America, as they are becoming increasingly important as innovation locations and sales markets in global economic competition. In the problem-oriented course, the following theories/models will be dealt with: - Lead Market Theory - Frugal Innovations - Open Innovation Approach - Transnational Model - Internationalization of Research & Development By means of the theories and models discussed, students are enabled to analyse the significance and effects of globalisation from an economic as well as a business perspective. Furthermore, they learn to assess the competitiveness of entrepreneurial innovation strategies and innovation locations.
Literature	• Bartlett, C. A. and S. Ghoshal (1998). Managing across Borders: The Transnational Solution. Boston, Harvard Business School Press. • Bartlett, C. A. and S. Ghoshal (1990). Managing innovation in the transnational corporation. Managing the Global Firm. C. A. Bartlett, Y. L. Doz and G. Hedlund. London, Routledge: 215-255. • Chesbrough, H. (2003). Open Innovation: The New Imperative for Creating and Profiting from Technology. Boston, Harvard Business School Press. • Christensen, C. M. and M. E. Raynor (2003). The innovator's solution: creating and sustaining successful growth. Boston, MA, Harvard Business School Press. • Herstatt, C. and R. Tiwari, Eds. (2017). Lead Market India: Key Elements and Corporate Perspectives for Frugal Innovations. Heidelberg, Springer. • Herstatt, C., R. Tiwari and S. Buse (2017). Innovating for Emerging Markets? An Assessment of German Hidden Champions' Strategies. Technologie, Strategie und Organisation. W. Burr and M. Stephan. Wiesbaden, Springer Gabler: 219-238. • Tiwari, R. and C. Herstatt (2014). Aiming Big with Small Cars: Emergence of a Lead Market in India. Heidelberg, Springer.

Course L1934: Managing Global Innovation - Seminar	
Typ	Seminar
Hrs/wk	2
CP	3
Workload in Hours	Independent Study Time 62, Study Time in Lecture 28
Lecturer	Dr. Stephan Buse, Dr. Rajnish Tiwari
Language	EN
Cycle	SoSe
Content	The seminar "Management of Global Innovations" serves the deepening and practice-oriented application of the teaching material conveyed in the problem-oriented course of the same name. Students work in groups on questions of global innovation management. Consequently, participation in the seminar requires participation in the problem-oriented course of the same name.
Literature	Die Grundlagenliteratur ist deckungsgleich zu der gleichnamigen Vorlesungsliteratur. Hinzukommt themenspezifische Fachliteratur bezüglich der zu behandelnden Fragestellungen. The basic literature is congruent with the lecture literature of the same name. In addition, there are subject-specific specialist literature relating to the questions to be dealt with.

Module M1034: Technology Entrepreneuship

Courses

Title	Typ	Hrs/wk	CP
Creation of Business Opportunities (L1280)	Project-/problem-based Learning	3	4
Entrepreneurship (L1279)	Lecture	2	2

Module Responsible	Prof. Christoph Ihl
Admission Requirements	None
Recommended Previous Knowledge	Basic knowledge in business economics obtained in the compulsory modules as well as an interest in new technologies and the pursuit of new business opportunities either in corporate or startup contexts.
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	Wissen (subject-related knowledge and understanding): • develop a working knowledge and understanding of the entrepreneurial perspective • understand the difference between a good idea and scalable business opportunity • understand the process of taking a technology idea and finding a high-potential commercial opportunity • understand the components of business models • understand the components of business opportunity assessment and business plans
Skills	• Fertigkeiten (subject-related skills): ◦ identify and define business opportunities ◦ assess and validate entrepreneurial opportunities ◦ create and verify a business model of how to sell and market an entrepreneurial opportunity ◦ formulate and test business model assumptions and hypotheses ◦ conduct customer and expert interviews regarding business opportunities ◦ prepare business opportunity assessment ◦ create and verify a plan for gathering resources such as talent and capital ◦ pitch a business opportunity to your classmates and the teaching team
Personal Competence	
Social Competence	Sozialkompetenz (Social Competence): • team work • communication and presentation • give and take critical comments • engaging in fruitful discussions
	Selbständigkeit (Autonomy):

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	None
Examination	Subject theoretical and practical work
Examination duration and scale	Three presentations on the respective project status
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Core qualification: Elective Compulsory International Management and Engineering: Specialisation I. Electives Management: Elective Compulsory Logistics, Infrastructure and Mobility: Core qualification: Elective Compulsory Mechanical Engineering and Management: Specialisation Management: Elective Compulsory

Course L1280: Creation of Business Opportunities	
Typ	Project-/problem-based Learning
Hrs/wk	3
CP	4
Workload in Hours	Independent Study Time 78, Study Time in Lecture 42
Lecturer	Prof. Christoph Ihl
Language	EN
Cycle	SoSe
Content	Important note: This course is part of an 6 ECTS module consisting of two courses "Entrepreneurship" & "Creation of Business Opportunities", which have to be taken together in one semester. Startups are temporary, team-based organizations, which can form both within and outside of established companies, to pursue one central objective: taking a new venture idea to market by designing a business model that can be scaled to a full-grown company. In this course, students will form startup teams around self-selected ideas and run through the process just like real startups would do in the first three months of intensive work. Startup Engineering takes an incremental and iterative approach, in that it favors variety and alternatives over one detailed, linear five-year business plan to reach steady state operations. From a problem solving and systems thinking perspective, student teams create different possible versions of a new venture and alternative hypotheses about value creation for customers and value capture vis-à-vis competitors. We will draw on recent scientific findings about international success factors of new venture design. To test critical hypotheses early on, student teams engage in scientific, evidence-based, experimental trial-and-error learning process that measures real progress. Upon completion of this course, students will be able to: · Apply a modern innovation toolkit relevant in both the corporate & startup world · Analyze given business opportunities in terms of its constituent elements · Design new business models by gathering and combining relevant ideas, facts and information · Evaluate business opportunities and derive judgment about next steps & decisions Course language is English, but participants can decide to give their graded presentations in German. Students are invited to apply to this course module already with a startup idea and/ or team, but this is not a requirement! We will form teams and ideas in the beginning of the course. Class meetings have alternate intervals of lecture inputs, teamwork, mentoring, and peer feedback. Attendance is mandatory for at least 80% of class time due to large proportion of teamwork sessions. Student teams give three presentations and submit them with backup analyses. Grading scheme: · Startup discovery presentation after 5 weeks: 30% · Startup validation presentation after 10 weeks: 30% · Final startup pitches after 13 weeks: 40%
Literature	• Blank, S. & Dorf, B. (2012). The startup owner's manual. • Gans, J. & Stern, S. (2016). Entrepreneurial Strategy. • Osterwalder, A. & Yves, P. (2010). Business model generation. • Maurya, A. (2012). Running lean: Iterate from plan A to a plan that works. • Maurya, A. (2016). Scaling lean: Mastering the Key Metrics for Startup Growth. • Wilcox, J. (2016). FOCUS Framework: How to Find Product-Market Fit.

Course L1279: Entrepreneurship	
Typ	Lecture
Hrs/wk	2
CP	2
Workload in Hours	Independent Study Time 32, Study Time in Lecture 28
Lecturer	Prof. Christoph Ihl
Language	EN
Cycle	SoSe
Content	Important note: This course is part of an 6 ECTS module consisting of two courses "Entrepreneurship" & "Creation of Business Opportunities", which have to be taken together in one semester. Startups are temporary, team-based organizations, which can form both within and outside of established companies, to pursue one central objective: taking a new venture idea to market by designing a business model that can be scaled to a full-grown company. In this course, students will form startup teams around self-selected ideas and run through the process just like real startups would do in the first three months of intensive work. Startup Engineering takes an incremental and iterative approach, in that it favors variety and alternatives over one detailed, linear five-year business plan to reach steady state operations. From a problem solving and systems thinking perspective, student teams create different possible versions of a new venture and alternative hypotheses about value creation for customers and value capture vis-à-vis competitors. We will draw on recent scientific findings about international success factors of new venture design. To test critical hypotheses early on, student teams engage in scientific, evidence-based, experimental trial-and-error learning process that measures real progress. Upon completion of this course, students will be able to: · Apply a modern innovation toolkit relevant in both the corporate & startup world · Analyze given business opportunities in terms of its constituent elements · Design new business models by gathering and combining relevant ideas, facts and information · Evaluate business opportunities and derive judgment about next steps & decisions Course language is English, but participants can decide to give their graded presentations in German. Students are invited to apply to this course module already with a startup idea and/ or team, but this is not a requirement! We will form teams and ideas in the beginning of the course. Class meetings have alternate intervals of lecture inputs, teamwork, mentoring, and peer feedback. Attendance is mandatory for at least 80% of class time due to large proportion of teamwork sessions. Student teams give three presentations and submit them with backup analyses. Grading scheme: · Startup discovery presentation after 5 weeks: 30% · Startup validation presentation after 10 weeks: 30% · Final startup pitches after 13 weeks: 40%
Literature	• Blank, S. & Dorf, B. (2012). The startup owner's manual. • Gans, J. & Stern, S. (2016). Entrepreneurial Strategy. • Osterwalder, A. & Yves, P. (2010). Business model generation. • Maurya, A. (2012). Running lean: Iterate from plan A to a plan that works. • Maurya, A. (2016). Scaling lean: Mastering the Key Metrics for Startup Growth. • Wilcox, J. (2016). FOCUS Framework: How to Find Product-Market Fit.

Module M1381: Agile Design Methods

Courses

Title	Typ	Hrs/wk	CP
Agile Design Methods (L1962)	Project Seminar	3	3
Agile Design Methods (L2294)	Lecture	2	3

Module Responsible	Dr. Stephan Buse
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	The students know: • Different methods from the field of design management and can explain them and their importance for agile project management. • The distinction between linear and integrative design methods. • Appropriate software for supporting the process. • The interrelation between working culture and applied design methods. • The theoretical construct behind human-centered design and its diverse methodologies. • The difference between high and low resolution prototyping and software to realize digital Prototyps.
Skills	The students are able: • to decide on an appropriate method to approach an innovation project. They recognize the difference between agile and iterate of methodologies and water fall project management. • They apply the relevant methods for the fuzzy front end (e.g. Design Thinking) or the implementation of an idea in agile teams (e.g. Scrum). • to self-moderate the Design Thinking process in their team. • to use appropriate methods to create a common understanding and across departmental teams. • **They carry out a synthases of the use and eight through appropriate methods e.g. personas.** • to use creativity methods for idea generation such as different brainstorming methods. • to construct appropriate prototypes to test the critical function of the idea. • to apply appropriate software for supporting the process.
Personal Competence	
Social Competence	The students are able: • to work successfully and respectfully in a multicultural team. • to reach the expected results within their team and to document them. • to engage in scientific and practitioner discussions on the topic of innovation-specifically design management. • to present the results of the work to others in an understandable and catchy way.
	The students are able: • to carry out an innovation process for any given challenge independently,

Autonomy	individually or in a team. • to solve complex problems independently or in a team, selecting and using appropriate analog design methods and software. • to gather knowledge regarding a challenge independently and apply their knowledge in problem-solving. • to critically reflect on the results of the work and their own behavior in the team.
Workload in Hours	Independent Study Time 110, Study Time in Lecture 70
Credit points	6
Course achievement	None
Examination	Written elaboration
Examination duration and scale	Written Assignment
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Core qualification: Elective Compulsory

Course L1962: Agile Design Methods	
Typ	Project Seminar
Hrs/wk	3
CP	3
Workload in Hours	Independent Study Time 48, Study Time in Lecture 42
Lecturer	Dr. Stephan Buse, Sandra-Luisa Moschner
Language	EN
Cycle	SoSe
Content	The core of this projectseminar is the systematical and method - based development of individual design method skills. The course is divided into two sections: 1.) theoretical input on relevant methodologies and 2.) practical training and application of innovation methods. In the first events, basic knowledge and an overview of methodical approaches to innovation and creativity is given. In the subsequent groupwork phase, user needs are explored, solutions are developed and tested experimentally. Interim results are presented at regular intervals in the plenum. The ideas can be further developed from date to date on the basis of verified or falsified assumptions. Different design methodologies will be explained and set in context: Design Thinking, Scrum, Kanban, Simplicity, Appreciative Inquiry, Lean start-up, Business Model Canvas, Value Proposition Design. The didactical concept of the practice phase is problem-based learning. Therefore the methodological training will focus on design thinking applied to a real-world problem. In an iterative manner, the student teams go through all Design Thinking stages in a workshop style - starting from understand, to empathize, define, ideate, prototype and test, several times in projects. Agile design methods forster a new working paradim, a mindset of collaboration. The students will experience the connection between methodology and working culture and reflect on their personal develpoment on the one hand and the team dynamics on the other hand.
Literature	• "Design Thinking" (Tim Brown, 2008) • Change by Design (Tim Brown, 2008) • Creative Confidence (Kelley/Kelley, 2013) • Value Proposition Design (Osterwalder/Pigneur, 2014) • Business Model Canvas (Osterwalder/Pigneur, 2010) • The Lean Startup (Eric Ries, 2011) • This Is Service Design Thinking (Stickdorn/Schneider, 2012)

Course L2294: Agile Design Methods	
Typ	Lecture
Hrs/wk	2
CP	3
Workload in Hours	Independent Study Time 62, Study Time in Lecture 28
Lecturer	Dr. Stephan Buse, Sandra-Luisa Moschner
Language	EN
Cycle	SoSe
Content	See interlocking course
Literature	See interlocking course

Module M1360: Innovation Management

Courses

Title	Typ	Hrs/wk	CP
Managing Innovations (L1937)	Project-/problem-based Learning	3	3
Managing Innovations - Seminar (L1938)	Seminar	2	3

Module Responsible	Prof. Cornelius Herstatt
Admission Requirements	None
Recommended Previous Knowledge	Basic knowledge in business administration
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 110, Study Time in Lecture 70
Credit points	6
Course achievement	None
Examination	Written exam
Examination duration and scale	90 min
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Core qualification: Compulsory

Course L1937: Managing Innovations	
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	SoSe
Content	The course aims to equip students with an understanding of key issues in the management of innovation and an appreciation of the relevant skills needed to manage innovation at both strategic and operational levels. It provides evidence of different approaches based on leading research, real world examples and experiences of firms and organizations from around the world. The management of innovation is one of the most important and challenging aspects of modern organization. Innovation is a fundamental driver of competitiveness and it plays a large part in improving quality of life. Innovation, and particularly technological innovation, is inherently difficult, uncertain and risky, and most new technologies fail to be translated into successful products and services. Given this, it is essential that students understand the strategies, tools and techniques for managing innovation, which often requires a different set of management knowledge and skills from those employed in everyday business administration. The course itself draws upon research activities of the Institute for Technology and Innovation Management at the TUHH (www.tuhh.de/tim) Lecture Topics: • The Management of (Technological) Innovation • Strategy and Organization for Innovation • Managing the Innovation Process • Innovation in the Age of Circular Economy (C2C) • Market-Research for Innovation and Design-thinking • Capturing value from R&D, Open Innovation and IP • Creativity and mindfulness in Innovation
Literature	LITERATURE Dodgson, M. Gann, D. and Salter A. The management of technological innovation: strategy and practice, Oxford University Press, 2008. Tidd, J., Bessant, J. and Pavitt, K.: Managing Innovation: Integrating technological, market and organizational change, 5th edition, John Wiley and Sons, 2013. Goffin, K., Mitchell, R.: Innovation Management: Effective strategy and implementation Paperback, 3rd edition, 15. November 2016

Course L1938: Managing Innovations - Seminar	
Typ	Seminar
Hrs/wk	2
CP	3
Workload in Hours	Independent Study Time 62, Study Time in Lecture 28
Lecturer	Prof. Cornelius Herstatt
Language	EN
Cycle	SoSe
Content	The seminar "Management of Innovations" provides a practice-oriented application of the teaching material conveyed in the lecture "Management of Innovations". Students work in groups on selected topics of innovation management. Consequently, participation in the seminar requires participation in the lecture.
Literature	Die Grundlagenliteratur ist deckungsgleich zu der gleichnamigen Vorlesungsliteratur. Hinzu kommt themenspezifische Fachliteratur bezüglich der zu behandelnden Fragestellungen.

Specialization Entrepreneurial Engineering (AAU)

The second year of the GTIME program in Aalborg with its specialisation in Entrepreneurial Engineering develops mind-sets and skills that enable students to create and realise new value for people and organisations. The students will bring a variety of different - mostly - technical competences into the programme, and the purpose is to creatively combine these technical competences with business savvy in order to create new value. From idea to reality - from thought to action.

Business creation and business development competences are keys to the global business arena of the future. Furthermore, such competences are a requisite for a range of knowledge-based organisations, from large to small and medium-sized private companies, start-up companies, as well as public services. Through the study programme, students have the opportunity to acquire the tools, methods, knowledge of processes, as well as an organisational and managerial understanding of innovation and entrepreneurship that will allow them to make a difference.

The semesters within the specialisation in Entrepreneurial Engineering are based on three generic activities, which are part of the process of creating new value: Discovery, Incubation and Acceleration. Discovery explores new opportunities, Incubation is about developing and testing new concepts, and Acceleration deals with realising new value. All three activities are incorporated in the GTIME students' Master's thesis as they can add whichever perspective they might find interesting to the project.

Another core competency of Aalborg University is its problem based project approach which is applied in different in group works. Students will be working closely with peers most of the time, and they are required to be present at the university on a daily basis and spend most of their day there. "The Aalborg Model for Problem Based Learning" is a method which is highly recognised internationally, and the university is host to a successful UNESCO chair in Problem Based Learning in Engineering Education and a Centre for PBL and Sustainability approved by UNESCO.

As a G-TIME graduate with a specialisation in Entrepreneurial Engineering, you have a variety of job options. Your skill profile is attractive for many types of companies and organisations in need of business development, including large private and public companies, small and medium-sized companies, start-up companies, as well as municipalities, regions and governmental agencies. Future job titles of successful graduates may be project manager, entrepreneur/CEO/CTO, business developer, process consultant, innovations manager or product and business developer.

Module M1388: Entrepreneurial Practice (AAU)

Courses

Title	Typ	Hrs/wk	CP
Entrepreneurial Practice (AAU) (L1967)	Project-/problem-based Learning	15	15

Module Responsible	NN
Admission Requirements	None
Recommended Previous Knowledge	General business knowledge.
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
	The student must be able to:

Knowledge	• Describe and understand general capabilities needed for organisations to become and stay innovative in their business development. • Describe and understand general abilities and conditions needed for people to become and stay entrepreneurial. • Describe and understand tools and methods for supporting entrepreneurial processes with an emphasis on discovery processes. • Describe and understand theories of creative methodologies and creative mind--set (dedicated ressources will be allocated for the initiation and sustaining of the objective).
Skills	The student must be able to: • Identify and analyse a need or problem using various theoretical perspectives related to a business development process. • Use creative theory and methods in discovery processes. • Be able to assess and analyse the entrepreneurial/innovation capabilities of the unit of analysis in focus. • The student must be able to identify possible conceptual solutions or development directions for solutions by using theory and creative skills.
Personal Competence	
Social Competence	
Autonomy	The student must be able to: • Approach an empirical field and identify a problem or need related to innovative and/or entrepreneurial processes and theories thereof, with an emphasis on discovery. • Contribute to the development of a conceptual solution by relating innovation and/or entrepreneurship theories with empirical insight. • Critically evaluate analysis and solutions. • Situational application/facilitation of creative skills (dedicated ressources will be allocated to the initiation and sustaining of the objective).
Workload in Hours	Independent Study Time 240, Study Time in Lecture 210
Credit points	15
Course achievement	None
Examination	Subject theoretical and practical work
Examination duration and scale	Examination at Aalborg University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Entrepreneurial Engineering (AAU): Compulsory

Course L1967: Entrepreneurial Practice (AAU)	
Typ	Project-/problem-based Learning
Hrs/wk	15
CP	15
Workload in Hours	Independent Study Time 240, Study Time in Lecture 210
Lecturer	NN
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1389: Agile Business Navigation (AAU)

Courses

Title	Typ	Hrs/wk	CP
Agile Business Navigation (AAU) (L1968)	Lecture	5	5

Module Responsible	NN
Admission Requirements	None
Recommended Previous Knowledge	General business knowledge.
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	• The student will be able to understand the different positions within agile methods. • The student will be able to understand the underlying methodology behind innovative agile business processes. • The student will be able to navigate between agile methods related to different practical business constrains. • The student will be able to understand human and own preferences in order to understand group dynamic within an innovative, agile team.
Skills	• The student will be able to navigate with agile methods related to different business cases and related to problem areas in an organization context. • The student will be able to navigate through innovative agile processes using methods to sustain high innovation capacity through a project cycle from idea to finalizing. • The student will be able to navigate in a multidisciplinary business environment with different business drivers in order to bring most value to an innovative project cycle. • The student will be able to set, supply and navigate an interdisciplinary team through an innovative project cycle including the facilitation of agile processes.
Personal Competence	
Social Competence	
Autonomy	• Reflect on the innovative, agile processes in relation to relevant agile methods. • The student will enhance his or her personal level of innovative businesses navigation.
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Credit points	5
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Aalborg University
Assignment for	

the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Entrepreneurial Engineering (AAU): Elective Compulsory

Course L1968: Agile Business Navigation (AAU)	
Typ	Lecture
Hrs/wk	5
CP	5
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Lecturer	NN
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1392: Corporate Entrepreneurship (AAU)

Courses

Title	Typ	Hrs/wk	CP
Corporate Entrepreneurship (AAU) (L1971)	Lecture	5	5

Module Responsible	NN
Admission Requirements	None
Recommended Previous Knowledge	General business knowledge.
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	The student must be able to: • Gain theoretical insight into high impact innovation concepts such as corporate entrepreneurship, disruptive innovation, breakthrough/radical innovation/innovation. • Understand the role and impact of corporate entrepreurship/(radical) innovation in organisations. • Understanding high-impact innovation processes and how to organize them in and around companies.
Skills	• Be able to identify and analyse challenges of corporate entrepreneurship/innovation in organizations. • Be able to choose and use relevant theories, methods, and tools.
Personal Competence	
Social Competence	
Autonomy	• Be able to audit, evaluate and contribute to design of the innovative capabilities of an established organisation. • Be able to better navigate in contexts of corporate entrepreneurship/(radical) innovation given the complexity, politics and emergent nature of the processes. • Ability to develop conceptual solutions to the challenges faced by established organisations when attempting to organise corporate entrepreneurship/(radical) innovation.
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Credit points	5
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Aalborg University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Entrepreneurial Engineering (AAU): Elective Compulsory

Course L1971: Corporate Entrepreneurship (AAU)	
Typ	Lecture
Hrs/wk	5
CP	5
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Lecturer	NN
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1391: Understanding Entrepreneurship (AAU)

Courses

Title	Typ	Hrs/wk	CP
Understanding Entrepreneurship (AAU) (L1970)	Lecture	5	5

Module Responsible	NN
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	During this course the students will gain knowledge about the foundations of entrepreneurship as an academic field of research. We will discuss entrepreneurship from a macroeconomic, a psychological, and a managerial point of view. • The students will acquire an understanding of entrepreneurship concepts and theories, methods and tools. • The student must understand theories of the entrepreneurial role at a personal, organisational as well as societal level.
Skills	The student will continuously be required to relate the theoretical learnings to entrepreneurship as a practice. The students will thereby acquire an understanding of entrepreneurship theory, methods and tools. The student must understand the implications of the entrepreneurial role on a personal, organizational as well as societal level. The student must furthermore be able to understand and describe his or her own situation in relation to an entrepreneurial context. • The student must be able to analyse entrepreneurial problems by using relevant theory, methods and tools. • The students must be able to use theory in analysing entrepreneurial challenges at the personal and organisational level.
Personal Competence	
Social Competence	
Autonomy	The student must be able to select and use various relevant theoretical perspectives, methods and tools in relation to the planning and engaging in entreneurial business development processes.
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Credit points	5
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Aalborg University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Entrepreneurial Engineering (AAU): Elective Compulsory

Course L1970: Understanding Entrepreneurship (AAU)	
Typ	Lecture
Hrs/wk	5
CP	5
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Lecturer	NN
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1393: Applied Business Modelling (AAU)

Courses

Title	Typ	Hrs/wk	CP
Applied Business Modelling (AAU) (L1972)	Lecture	5	5

Module Responsible	NN
Admission Requirements	None
Recommended Previous Knowledge	General business knowledge.
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	• The student will be able to understand the different elements of the business model as well as the internal connections between the elements of the model. • The student will be able to distinguish between different business models archetypes and how their design features differ.
Skills	• The student will be able to develop the most suitable business model for a new business based on data collected through desk - and field research. • The student will be able to distinguish between different archetypes of business models and describe the implications of adopting a new business model within an existing business. • The student will be able to use the business model as a strategic tool of communication within new business creation. • The student will be able to unfold different scenarios through business model prototyping.
Personal Competence	
Social Competence	
Autonomy	The student will be able to analyse and develop new business with both an external and internal perspective through a business modelling approach.
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Credit points	5
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Aalborg University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Entrepreneurial Engineering (AAU): Elective Compulsory

Course L1972: Applied Business Modelling (AAU)	
Typ	Lecture
Hrs/wk	5
CP	5
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Lecturer	NN
Language	EN
Cycle	SoSe
Content	
Literature	

Module M1390: Design Based Innovation (AAU)

Courses

Title	Typ	Hrs/wk	CP
Design Based Innovation (AAU) (L1969)	Lecture	5	5

Module Responsible	NN
Admission Requirements	None
Recommended Previous Knowledge	Basics in design management.
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	The students • must understand the prototyping process and the strengths and weaknesses of fast prototyping. • must understand the concept of problem framing and reframing through a rapid and iterative prototyping process for developing a product/service business concept... • must understand the process of user-driven innovation used in a prototyping process.
Skills	The students • must be able to use observation, interviews and other research methods to collect data on user/customer behaviour. • must be able to transform data on user/customer behavior into specifications and demands and subsequently use this as basis for problem framing and a prototyping process. • must be able to apply prototyping tools to problem solving, product-, service- and business development. • must be able to work through and document a process of design-driven innovation. • must be able to frame specific problem-areas and/or opportunities.
Personal Competence	
Social Competence	
Autonomy	The students • must be able to plan and execute a prototyping process that to a large extent involves users, customers and other stakeholders. • must bel able to navigate through and facilitate an open-ended process. • must be able to reflect on the process and outcome of the prototyping process within a business development context.
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Credit points	5
Course	None

achievement	
Examination	Written exam
Examination duration and scale	Examination at Aalborg University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Entrepreneurial Engineering (AAU): Elective Compulsory

Course L1969: Design Based Innovation (AAU)	
Typ	Lecture
Hrs/wk	5
CP	5
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Lecturer	NN
Language	EN
Cycle	SoSe
Content	
Literature	

Module M1394: Market, Resources and Entrepreneurship (AAU)

Courses

Title	Typ	Hrs/wk	CP
Market, Resources and Entrepreneurship (AAU) (L1973)	Lecture	5	5

Module Responsible	NN
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	• The student will understand theories of market analysis and market development strategies and implementation of strategies. • The student will understand and distinguish between the different types of financing including: lending based, equity based and cash-flow based.
Skills	• The student will learn aspect of how to identify and analyse markets and how to make strategies for approaching the market. • The student will learn how to address financing issues of the business from a resource standpoint. • The students will learn to identify the most suitable form of financing and resource acquirement for a specific business.
Personal Competence	
Social Competence	
Autonomy	• The student will be able to use methods of identifying a market, and develop a market strategy, and to implementing the strategy. • The student will be able to identify the needs of the new business and approach potential stakeholders and key persons in order to acquire the resources to meet the needs. • The student will be able to operate under the restraints of limited resources and optimize the usage of those resources.
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Credit points	5
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Aalborg University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Entrepreneurial Engineering (AAU): Elective Compulsory

Course L1973: Market, Resources and Entrepreneurship (AAU)	
Typ	Lecture
Hrs/wk	5
CP	5
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Lecturer	NN
Language	EN
Cycle	SoSe
Content	
Literature	

Specialization Global Design Management (UoS)

The Global Design Management specialisation taught during the second year of the GTIME programme in Glasgow focuses on enabling the systematic role of design in linking creativity to innovation throughout the product development process; from conceptualisation through production and delivery to the market place. The programme aims to develop graduates with management capability who can deploy well-coordinated global product development strategies, operations and projects towards innovation within contemporary industrial settings. Graduates will understand design in innovation as a rigorous engineering process through which innovation can be driven and realised in a competitive global economy, and as a human centred approach that can discover latent societal needs and problems and develop solutions that are sensitive to the needs of all stakeholders.

Different modules introduce the students to key concepts within complex innovative design processes and management approaches, management of globally distributed creative teams at partner universities and the Postgraduate Group Project places student teams to work with an industrial client on a real world solution to client's prioritised brief. Students may integrate and apply design, manufacturing and operations management knowledge and skills to an industry based product and process development project and further develop project management skills. The latter half of the second year at the University of Strathclyde is characterised by the Global Research Project as an individual research project for which the student develops a relevant study topic of interest then executes, documents and presents critical research findings.

These taught and project based modules are supplemented by 2 modules chosen by the students from an approved list of optional modules. These include human centred design, design aesthetics, design methods, sustainable design and remanufacturing, product costing and financial management, quality management and lean six sigma, technology and innovation management, systems thinking, supply chain management and enterprise resource planning.

Module M1386: Global Design (UoS)

Courses

Title	Typ	Hrs/wk	CP
Global Design (UoS) (L1965)	Lecture	5	5

Module Responsible	Dr. Andrew Wodehouse
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	- Demonstrate knowledge and understanding of the nature of distributed design. - Demonstrate knowledge and understanding of the management of distributed design projects. - Demonstrate knowledge and understanding of how technology can effectively support distributed design activity.
	Explain the concepts of distributed design engineering. Discuss how the benefits and issues related to distributed design compare to those

Skills	of co-located design. Describe management tools and techniques for successfully managing distributed design. Apply these tools and techniques to carry out distributed design project work. Show how these tools and techniques can overcome issues relating to distributed design. Describe appropriate technology and how it can be used to support distributed design. Apply the use of technology to successfully carry out distributed design project work. Show how appropriate technology can be used to overcome issues relating to distributed design.
Personal Competence	
Social Competence	Teamwork: virtually; collocated; synchronous and asynchronous
Autonomy	Literature searching, gathering, analysis Literature review Presentation skills
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Credit points	5
Course achievement	None
Examination	Subject theoretical and practical work
Examination duration and scale	Examination at University of Strathclyde
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Global Design Management (UoS): Compulsory

Course L1965: Global Design (UoS)	
Typ	Lecture
Hrs/wk	5
CP	5
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Lecturer	Dr. Andrew Wodehouse
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1385: Design Management (UoS)

Courses

Title	Typ	Hrs/wk	CP
Design Management (UoS) (L1964)	Lecture	5	5

Module Responsible	Prof. Alex Duffy
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	1. Appreciate and understand the role of design within an organisation and the organisational structures required for effective design. 2. Appreciate the role of design models, approaches and methods. 3. Know a variety of aspects and the complexities of design development. 4. Appreciate the role of innovation in design and know how to measure design performance.
Skills	Ability to articulate the impact of early product delivery with regards to quality, cost and market sales. Describe the different main organisational structures and their impact on the design activity. Articulation of the different types of design models, approaches and methods. Appreciation of the different strengths and weaknesses of models, approaches and methods. Able to describe multiple aspects of design development. Articulation of complexities in design development.
Personal Competence	
Social Competence	Teamwork
Autonomy	- Literature searching, gathering, analysis. - Problem synthesis. - Literature review writing. - Presentation skills.
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Credit points	5
Course achievement	None
Examination	Written elaboration
Examination duration and scale	Examination at University of Strathclyde

Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Global Design Management (UoS): Compulsory

Course L1964: Design Management (UoS)	
Typ	Lecture
Hrs/wk	5
CP	5
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Lecturer	Prof. Alex Duffy
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1387: Postgraduate Group Project (UoS)

Courses

Title	Typ	Hrs/wk	CP
Postgraduate Group Project (UoS) (L1966)	Project Seminar	20	20

Module Responsible	Dr. Anup Nair
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	Demonstrate knowledge and understanding of the various elements associated with the respective course disciplines. Demonstrate knowledge and understanding of products and management practices in industry. Demonstrate knowledge and ability in applying and using various analysis and modelling tools and techniques in product and process realisation. Demonstrate project planning and management, data collection and analysis, presentation, consulting and team working skills.
Skills	Ability to describe and discuss course contents relevant to the particular project and the course theme. Critically review and evaluate products and management practices of the particular company. Critically review and evaluate analysis tools and modelling techniques. Discuss and critically evaluate the implementation of analysis tools and modelling techniques.
Personal Competence	
Social Competence	Teamwork, team leadership.
Autonomy	Ability to plan, control and lead an industrial project from inception to completion. Evidence of achieving deliverables which meet the client company requirements. Ability to work responsibly as part of a project team.
Workload in Hours	Independent Study Time 320, Study Time in Lecture 280
Credit points	20
Course achievement	None
Examination	Subject theoretical and practical work
Examination duration and scale	Examination at University of Strathclyde
Assignment for the Following	Global Technology and Innovation Management & Entrepreneurship: Specialisation

Curricula	Global Design Management (UoS): Compulsory

Course L1966: Postgraduate Group Project (UoS)	
Typ	Project Seminar
Hrs/wk	20
CP	20
Workload in Hours	Independent Study Time 320, Study Time in Lecture 280
Lecturer	Dr. Anup Nair
Language	EN
Cycle	WiSe
Content	
Literature	

Specialization Opportunities and Challenges for Innovation Management in New Economic Powerhouses (MU)

Manipal University is synonymous with excellence in higher education. Over 28,000 students from 57 different nations live, learn and play in the sprawling university town. The university has pioneered in every sector, engineering, management, communication and humanities and management, with all its institutes being mapped on the national and international radar. The School of Management, established in 1999, has been shaping professionally competent, socially responsible and ethical management postgraduates. The School draws its strength from its team of dedicated and experienced faculty members. Many of them have industry experience and have commendable record in research and research publication.

The second year of the GTIME program offered by the School, attempts to explore the rapidly changing business landscape in India. It attempts to provide students with a platform to explore this rich developing economy and trace its journey as it emerges into a strong economic power house. The third semester would commence with a one-week cultural immersion program that will sensitize students to the rich cultural heritage of India. This cultural program will also be a birds-eye view of the business culture operational in India. The courses offered in the third semester will provide students with insights into the business models operational in India and changing contours of the business environment. A potent, powerful blend pedagogy consisting of lectures, discussions, on-site visits and case studies will be employed. The project undertaken by the students in the fourth semester will enable them to obtain a hands one experience in an organization where he/she will be able to relate the class room discussions practically.

Module M1369: Business Modelling and System Dynamics (MU)

Courses

Title	Typ	Hrs/wk	CP
Business Modelling and System Dynamics (MU) (L1948)	Lecture	5	5

Module Responsible	Prof. Lewlyn Rodrigues
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	• Know the importance of system thinking in an organization. • Understand the importance of modelling and simulation of a dynamic system. • Appreciate the wide range of applications of System Dynamics • Understand the stages of modelling process. • Methods for validating a System Dynamics model.
Skills	After completing this module, students will have skills in: • Identifying key parameters and its influence on the system for a specific problem. • Developing a System Dynamics model. • Interpretation of simulation results and policy formulation.
Personal	

Competence	
Social Competence	
Autonomy	After completing this module, students will have skills: • In predicting dynamic scenarios in business innovation. • Developing business models which will be helpful in predicting the success of innovation. • Applying a holistic view to business problems.
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Credit points	5
Course achievement	None
Examination	Written exam
Examination duration and scale	Prüfung abgelegt an der Manipal University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Opportunities and Challenges for Innovation Management in New Economic Powerhouses (MU): Compulsory

Course L1948: Business Modelling and System Dynamics (MU)	
Typ	Lecture
Hrs/wk	5
CP	5
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Lecturer	Prof. Lewlyn Rodrigues
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1370: Management in Practice (MU)

Courses

Title	Typ	Hrs/wk	CP
Management in Practice (MU) (L1949)	Lecture	6	6

Module Responsible	Prof. Lakshmi Narayanan
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	• Understand the Indian Business Climate & Culture Dynamics • Exposure to structure and context of business operations , business etiquette and practices, business negotiations, and the current investment climate in India • Exposure to technology capabilities and innovation in business design • Liaison with an MSME in India • Exposure to business incubator: Manipal University Technology Business Incubator (MUTBI) • Promotes innovation driven start-ups
Skills	After completing this module, students will have skills in: • Analyzing cultural diversity and its impact on business and analysing the various culture dynamics involved in a business. • design a business proposal • Design an appropriate structure that suits the Indian business practices. • Designing appropriate business negotiation strategies.
Personal Competence	
Social Competence	Teamwork and leadership.
Autonomy	After completing this module, students will have skills: • for better coping with challenges of business environment in India with special focus on cultural aspects. • for better understanding of the functioning of Indian industries and to promote innovation in the business venture.
Workload in Hours	Independent Study Time 96, Study Time in Lecture 84
Credit points	6
Course achievement	None
Examination	Written exam
Examination duration and scale	Prüfung abgelegt an der Manipal University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Opportunities and Challenges for Innovation Management in New Economic Powerhouses (MU): Compulsory

Course L1949: Management in Practice (MU)	
Typ	Lecture
Hrs/wk	6
CP	6
Workload in Hours	Independent Study Time 96, Study Time in Lecture 84
Lecturer	Prof. Lakshmi Narayanan
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1371: Technology and Business (MU)

Courses

Title	Typ	Hrs/wk	CP
Technology and Business (MU) (L1950)	Lecture	6	6

Module Responsible	Prof. Pallavi Upadhyaya
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	• Important trends in information technology and their applications in business • Role of information technology in process innovation • Understand various business models of electronic marketplaces in India • Understand new technologies that facilitate MSMEs to market their products and services
Skills	After completing this module, students will have skills in: • Analyzing issues in information systems implementation. • Evaluate suitable e-marketplace for new product launch. • Designing appropriate e-marketing strategies.
Personal Competence	
Social Competence	Teamwork and communication skills
Autonomy	- Descision making - Analysation and evaluation of market opportunities
Workload in Hours	Independent Study Time 96, Study Time in Lecture 84
Credit points	6
Course achievement	None
Examination	Written exam
Examination duration and scale	Prüfung abgelegt an der Manipal University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Opportunities and Challenges for Innovation Management in New Economic Powerhouses (MU): Compulsory

Course L1950: Technology and Business (MU)	
Typ	Lecture
Hrs/wk	6
CP	6
Workload in Hours	Independent Study Time 96, Study Time in Lecture 84
Lecturer	Prof. Pallavi Upadhyaya
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1372: Technology, Creativity and Innovation (MU)

Courses

Title	Typ	Hrs/wk	CP
Technology, Creativity and Innovation (MU) (L1951)	Lecture	5	5

Module Responsible	Prof. Shiva Prasad
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	• Types of creativity and innovation and its barriers. • Frameworks and strategies for building an ecosystem for creativity and innovation. • Managing creativity, innovation and technology. • Understand the basic frameworks for assessing the technology capabilities of a business. • Know the importance of facilitating the adoption of new technology. • Understand the importance of creativity, innovation & technology to gain competitive advantage.
Skills	After completing this module, students will have skills in: • Developing framework and strategies for enabling a supportive environment for fostering creativity and innovation. • Assess and audit the technology capabilities of a business. • Analyse the problems related to creativity, innovation and technology management.
Personal Competence	
Social Competence	Teamwork and communication skills
Autonomy	After completing this module, students will have skills: • Identify the need for innovation and apply creative solutions for the technological development. • Assessing the feasibility of innovative ideas.
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Credit points	5
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Manipal University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Opportunities and Challenges for Innovation Management in New Economic Powerhouses (MU): Compulsory

Course L1951: Technology, Creativity and Innovation (MU)	
Typ	Lecture
Hrs/wk	5
CP	5
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Lecturer	Prof. Shiva Prasad
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1373: Business Research Methods (MU)

Courses

Title	Typ	Hrs/wk	CP
Business Research Methods (MU) (L1952)	Lecture	5	5

Module Responsible	Dr. Rajasekharan Pillai
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	After the completion of the module the learners will: • familiarize the way of scientific research and it characteristics. • get an orientation on sampling designs; • obtain knowledge about various measurement scales used in research and different scaling techniques; • fully be oriented to prominent methods of data collection. • learn the tools of data processing and analysis amenable to be interpreted and inferred, with the help of SPSS.
Skills	- Students can obtain knowledge about research process, research design, inter alia, practical significance of knowing RM. - They will be able to develop questionnaire independently. - They will be able to understand various methods of testing of hypotheses.
Personal Competence	
Social Competence	Coordination and teamwork.
Autonomy	Students will gain competences in researching data and communicating it to various parties within a professional environment.
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Credit points	5
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Manipal University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Opportunities and Challenges for Innovation Management in New Economic Powerhouses (MU): Compulsory

Course L1952: Business Research Methods (MU)	
Typ	Lecture
Hrs/wk	5
CP	5
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Lecturer	Dr. Rajasekharan Pillai
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1374: Seminar Series on Innovation Management (MU)

Courses

Title	Typ	Hrs/wk	CP
Seminar Series on Innovation Management (MU) (L1953)	Seminar	3	3

Module Responsible	Dr. V K Ranjith
Admission Requirements	None
Recommended Previous Knowledge	Basics in Innovation Management
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	• Innovation Process in emerging economies • Context of innovation • Innovation and markets • Innovative practices in the select industries- Healthcare, Education and FMCG • Innovation and the role of incubators-A case of Manipal University
Skills	After completing this module, students will have skills in: • understanding innovation in the emerging market process. • decision making for facilitating the innovation process. • methods to foster innovation.
Personal Competence	
Social Competence	Teamwork and communication skills.
Autonomy	- Leadership - Decision making
Workload in Hours	Independent Study Time 48, Study Time in Lecture 42
Credit points	3
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Manipal University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Opportunities and Challenges for Innovation Management in New Economic Powerhouses (MU): Elective Compulsory

Course L1953: Seminar Series on Innovation Management (MU)	
Typ	Seminar
Hrs/wk	3
CP	3
Workload in Hours	Independent Study Time 48, Study Time in Lecture 42
Lecturer	Dr. V K Ranjith
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1375: Foreign Language Hindi (MU)

Courses

Title	Typ	Hrs/wk	CP
Foreign Language Hindi (MU) (L1954)	Lecture	3	3

Module Responsible	NN
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	By the end of the module students will have learned: • To speak and familiarize themselves with Hindi as a foreign language • The students will be able to identify the basic sounds, words and expressions of the Hindi language. They will be able to say or express basic ideas, sentences, and desires in simple sentences. They will learn to write the Hindi script and learn enough vocabulary to continue with the Basic 2 level course.
Skills	Students will gain basic communication skills in the Indian language.
Personal Competence	
Social Competence	Communication skills.
Autonomy	The course will help students orienting themselves in every day life in India through a better understanding of language and culture.
Workload in Hours	Independent Study Time 48, Study Time in Lecture 42
Credit points	3
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Manipal University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Opportunities and Challenges for Innovation Management in New Economic Powerhouses (MU): Elective Compulsory

Course L1954: Foreign Language Hindi (MU)	
Typ	Lecture
Hrs/wk	3
CP	3
Workload in Hours	Independent Study Time 48, Study Time in Lecture 42
Lecturer	NN
Language	EN
Cycle	WiSe
Content	
Literature	

Specialization Technology and Innovation Management in Japan (APU)

Ritsumeikan University uses the second year of the GTIME program to introduce the students to innovation processes and management approaches used in Japan. Since the global success of Japanese companies, practitioners and scholars around the world have shown an increased interest in and appreciation for Japanese management principles and innovative practices. Japanese companies have for a long time adapted Western ideas of quality and innovation to the Japanese context and introduced new and innovative innovation processes and management techniques. Japan is still a leading driver in the migration toward global operations, integrating design, sourcing, manufacturing and distribution of products and services globally.

The second year in Japan adds to the global character of the master in innovation and technology management. Considering the renowned innovation process of the industry in Japan and the unique innovation processes used in Japan, it is a clear advantage to have focused course- and seminar modules about Japanese product and process innovation conduced in Japan. The students who choose Ritsumeikan University in Japan as their second year destination gain invaluable insights into the Japanese approach to innovation and the international competitiveness that arises from it.

Module M1355: Information Technology Management (APU)

Courses

Title	Typ	Hrs/wk	CP
Information Technology Management (APU) (L1930)	Lecture	4	4

Module Responsible	Prof. Yukihiko Nakata
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	Subject-related knowledge and understanding: • The value of IT to organizations. • The role of information technology for product and process development and the value of innovations. • Recognize and analyze the information-communication systems/services nexus. • Understand the principles necessary to overcome the management challenges of integrating IT in innovation and employing it an organization. • Understanding how best practices can be implemented into the IT organization successfully.
Skills	Subject-related skills: After completing this module, students will have skills in: • Determining what is to be contained in an IT Strategic Plan. • Integrating IT into product and service concept development • Coping with challenges of IT integration in product development and an

	organization
Personal Competence	
Social Competence	Key Qualifications: After completing this module, students will have skills: • Identify the role of information for the success of innovation and competitiveness • Integration of information management in all stages of product development • Master total information technology management (ITM) in R&D and business processes.
Autonomy	
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Credit points	4
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Ritsumeikan Asia Pacific University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Technology and Innovation Management in Japan (APU): Compulsory

Course L1930: Information Technology Management (APU)	
Typ	Lecture
Hrs/wk	4
CP	4
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Lecturer	Prof. Yukihiko Nakata
Language	EN
Cycle	WiSe

Content	The aim of this course is to demonstrate and discuss the essential role of information technology for innovation and competitive advantage of a company. Innovations of the 21st century such as Apple's iPod - and the competiveness advantage that results from it - are more and more based on information than on physical apparatus. Innovations are embedded in information networks and the value of a physical apparatus is based on how much information is processed or made available through the apparatus. In addition, information technologies are the core for management, manufacturing and service processes.
	In this sense Information Technology Management is important to accelerate innovations and strengthen competitiveness and, therefore, one of the key parts of Management of Technology (MOT), which is the management to lead R&D to business and add extra value.
	The course objective is to master “Total Information Technology Management (ITM)”. This concepts generally aim at leading R&D and business processes to effectively utilize IT in order to strengthen competitiveness.
	The course is a complement to the courses “Strategy of Technology (SOT)” and “Management of Technological (MOT)”.
	• Why "Information Technology Management"?
	• Paradigm Shift of IT Management
	  ◦ IT in the 21st century
	  ◦ Smartphone, Big data etc.
	• The Role of Information in innovation
	  ◦ Case Study of iPod: Video Case Study
	  ◦ “The iPod Revolution”
	• E-Business and E-Commerce
	  ◦ E-business
	  ◦ Online Shopping Video Case Study
	  ◦ CEO exchange: Bezos of Amazon and Dyer of Land’s End
	• Transaction Processing, Functional Application and Integration Managing Production
	• Emerging IT Management
	• Knowledge Management:
	  ◦ Requirements for Digitalization
	  ◦ IT systems for Knowledge Management
	• Enterprise System for Total Supply Chain Management
	  ◦ Supply Chain Enterprise Resource
	  ◦ Radio Frequency Identification (RFID
	  ◦ Case Study of JR-Suica Video Case Study “Project X; Challenger IC Card System of JR-Suica”
	• Build to Order
	  ◦ Mass customization
	  ◦ Video Case Study; CEO exchange: Dell of Dell and Smith of FedEx
	• Social Networking Service: Business Developing by IT

Literature	• Turban, E., Volonino, L., Wood, G. R. (2005) Information Technology for Management: Digital Strategies for Insight, Action, and Sustainable Performance, John Wiley & Sons.

Module M1356: Technology Management (APU)

Courses

Title	Typ	Hrs/wk	CP
Technology Management (APU) (L1931)	Lecture	4	4

Module Responsible	Prof. Masanori Namba
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	Students will learn the basic concepts on innovation and the features of technology which enable them to understand the integrated and complex process of R&D, New Product Development, Business Operations, and the role and the effective use of Information Technology for overall management.
Skills	- Skills in managing business and innovation processes - Managing a variety of technologies - Project management towards an innovative company strategy
Personal Competence	
Social Competence	- Teamwork and communication skills - Intercultural management skills
Autonomy	- Leadership - Analytical decision making
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Credit points	4
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Ritsumeikan Asia Pacific University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Technology and Innovation Management in Japan (APU): Compulsory

Course L1931: Technology Management (APU)	
Typ	Lecture
Hrs/wk	4
CP	4
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Lecturer	Prof. Masanori Namba
Language	EN
Cycle	WiSe

Content	• Part 1 Sources of Competitiveness: Linkage of R&D and Production
	  ◦ Class 1 R&D and Production activities as Information Processing
	  ◦ Class 2 Innovator's Dilemma and Case Study History of HDD
	  ◦ Class 3 Pitfalls in new product development & new business development, and Case Study (IBM)
	  ◦ Class 4 Management of emerging technology and Case Study (Path to new technology)
	• Part 2 Strategy for Creation of Core Competences
	  ◦ Class 5 Core Competences and their evolution, and Case Study (Intel)
	  ◦ Class 6 Market Creation: Ideation, Conceptualization and Business Model, Case Study (TiVo)
	  ◦ Class 7 Project Management for New Product Development (Stage Gates/ PACE method)
	  ◦ Class 8 New Business Development (Alliance/introduction to Self Development)
	• Part 3 Managing of Information Technology(IT)
	  ◦ Class 9 Information needs in an organization and role of IT
	  ◦ Class 10 Alternative ways to match the IT function to the structure and behavior of the organization
	  ◦ Class 11 Consideration of the ethical and organizational implication and effects of IT
	• Part 4 Competitiveness and Production Management
	  ◦ Class 12 Comparison of Mass Production Method & Lean System; Ford System and Toyota System
	  ◦ Class 13 Cost, Productivity and Learning Curve
	  ◦ Class 14 Supply Chain and Open Architecture
	  ◦ Class 15 Total Innovation Management

Literature	• Leifer, Richard, McDermott, Christopher M., O'Connor, Gina Colarelli, Peters, Lois S. Rice, Mark P. Veryzer Robert W. (2000) Radical Innovation: How Mature Companies Can Outsmart Upstarts, Harvard Business School Press. • Day George S., Schoemaker, Paul J.H. with Robert E. Gunther (2005) Wharton on managing emerging technologies. • Porter Michael E. (1998) On Competition (Harvard Business Review Book Series), Harvard Business School Press • Clayton, M. Christensen (2003) The Innovator's Dilemma: The Revolutionary National Book That Will Change the Way You Do Business (Harperbusiness Essentials) Harperbusiness. • Clayton, M. Christensen, Raynor Michael E. (2005) The innovator''s solution : creating and sustaining successful growth. • Tschirky, H., Jung () Technology and innovation management on the move : from managing technology to managing innovation-driven enterprises (Industrielle Organisation). • Simon, H. () Hidden champions of the twenty-first century : success strategies of unknown world market leaders, Springer.

Module M1357: Japanese Corporations and Asia Pacific (APU)

Courses

Title	Typ	Hrs/wk	CP
Japanese Corporations and Asia Pacific (APU) (L1932)	Lecture	4	4

Module Responsible	Prof. Kaoru Natsuda
Admission Requirements	None
Recommended Previous Knowledge	Basic business knowledge.
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	The aim of this course is to provide knowledge of Japanese management systems and Japanese economy in relation to the Asia Pacific region. The contents of the course include Japanese domestic business and economic systems including human resource management, keiretsu, general trading companies, the role of the Japanese government in the economy, as well as the internationalization strategy (or regionalization) of Japanese corporations. We will particularly examine how Japanese multinational corporations have conducted foreign direct investment in the region in the historical perspective. In addition, the course requires the students' participation through a presentation: Investment Promotion - how to attract Japanese corporations into the country, which will be selected in the Asia Pacific region
Skills	By the end of the module students will have learned: Completion of the course will assists students to establish a good working knowledge of Japanese business management, Japanese political economy as well as issues in the Asia Pacific. It will also assist students to develop research and presentation skills, which are required of anyone if they wish to put their analytical thinking capabilities into practice. Subject-related knowledge and understanding: • Knowledge of Japanese management such as life time employment system, seniority system, enterprise unions, kaizen. • Knowledge of Japanese political economy such as keiretsu system, developmental state concept, industrial policy. • Knowledge of Japanese foreign direct investment in the Asia since 1950s until recent years. Knowledge of the Asia Pacific economy and international relations in Asia.
Personal Competence	
Social Competence	Teamwork and communication skills
Autonomy	- Management skills - Decision making - Presentation skills
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Credit points	4
Course achievement	None

Examination	Written exam
Examination duration and scale	Examination at Ritsumeikan Asia Pacific University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Technology and Innovation Management in Japan (APU): Compulsory

Course L1932: Japanese Corporations and Asia Pacific (APU)	
Typ	Lecture
Hrs/wk	4
CP	4
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Lecturer	Prof. Kaoru Natsuda
Language	EN
Cycle	WiSe
Content	I. Competitive Advantages of Country Porter, Michael (1990) The Competitive Advantage of Nations, New York, The Free Press.(Chapter 3) World Economic Forum (2013) The Global Competitiveness Report 2013-2014, Geneva, World Economic Forum. II. Japanese Management Systems Abegglen, James (2006) 21st Century Japanese Management: New Systems, lasting value, New York, Palgrave Macmillan (chapter 4) Flath, David (2005)The Japanese Economy (2nd Edition), Oxford, Oxford University Press (Chapter 15) Itagaki, Hiroshi (2011) “The Japanese Management System and the Corporate Strategies of Japanese Companies” in Kawamura, T (ed.) Hybrid Factories in the United States, Oxford, Oxford University Press. III. Japanese Production Management Imai Masaaki (1997) Gemba Kaizen: a commonsense, low-cost approach to management, New York, MacGraw-Hill. (Chapter 1) Urata Shujiro (1999) “Intrafirm Technology Transfer by Japanese Multinationals in Asia”, in Encarnation (ed.), Japanese Multinationals in Asia, Oxford, Oxford University Press. IV. Industrial Organisation in Japan (Keiretsu & Sogo Shosha) Flath, David (2005)The Japanese Economy (2nd Edition), Oxford, Oxford University Press (Chapter 12) Chen, Min (2004) Asian Management Systems (2nd edition), London, Thomson. (Chapter 12) V. Government-Business Relationship in Japan and the Asia Pacific Chen, Min (2004) Asian Management Systems (2nd edition), London, Thomson. (Chapter 11) Chiu, Stephen and Lui, Tai-lok (1998) “ The Role of the State in Economic Development”, in Thompson, G. (ed.) Economic Dynamism in the Asia-Pacific, London, Routledge.

	VI. Japanese Foreign Economic Policies and FDI in the Asia Pacific Natsuda, Kaoru (2008) "Japan's Foreign Economic Policies towards East Asia in the Post War Era", Asian Profile, vol. 36, no.5,pp.455-468 Farrell, Roger (2008) Japanese Investment in the World Economy, Cheltenham, Edward Elgar. VII. Japanese Production Networks in the Asia Pacific Hatch, Walter and Yamamura Kozo (1996) Asia in Japan's Embrace: Creating a Regional Production, Cambridge, Cambridge University Press. (Chapter 2) VIII. Investment Promotion Presentation VIIII. Japanese Corporations and Future of the Asia Pacific
Literature	• Abegglen, James (2006) 21st Century Japanese Management: New Systems, lasting value, New York, Palgrave Macmillan. • Chen, Min (2004) Asian Management Systems (2nd edition), London, Thomson. • Flath, David (2005)The Japanese Economy (2nd Edition), Oxford, Oxford University Press.

Module M1362: Major Seminar (APU)

Courses

Title	Typ	Hrs/wk	CP
Major Seminar (APU) (L1939)	Seminar	6	6

Module Responsible	Prof. Rian Beise-Zee
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	Changing programme related topics.
Skills	Competence to be gained according to the different topics (projects in cooperation with Japanese firms).
Personal Competence	
Social Competence	Teamwork and communication skills.
Autonomy	Management and decision making skills.
Workload in Hours	Independent Study Time 96, Study Time in Lecture 84
Credit points	6
Course achievement	None
Examination	Written elaboration
Examination duration and scale	Examination at Ritsumeikan Asia Pacific University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Technology and Innovation Management in Japan (APU): Compulsory

Course L1939: Major Seminar (APU)

Typ	Seminar
Hrs/wk	6
CP	6
Workload in Hours	Independent Study Time 96, Study Time in Lecture 84
Lecturer	Prof. Rian Beise-Zee
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1366: Management in Asia and Japan (APU)

Courses

Title	Typ	Hrs/wk	CP
Management in Asia and Japan (APU) (L1945)	Lecture	4	4

Module Responsible	Prof. Ali Haidar
Admission Requirements	None
Recommended Previous Knowledge	Basic management subjects.
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	• Learn ways of sustaining economic growth that Asian countries are currently experiencing • Develop successful management career in Asia • Balance the needs of the society and the objectives of corporations
Skills	Develop oral and written communication skills.
Personal Competence	
Social Competence	• Be culturally sensitive • Teamwork • International communication skills
Autonomy	- Management skills - Leadership
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Credit points	4
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Ritsumeikan Asia Pacific University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Technology and Innovation Management in Japan (APU): Elective Compulsory

Course L1945: Management in Asia and Japan (APU)	
Typ	Lecture
Hrs/wk	4
CP	4
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Lecturer	Prof. Ali Haidar
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1359: National Innovation Systems (APU)

Courses

Title	Typ	Hrs/wk	CP
National Innovation Systems (APU) (L1935)	Lecture	4	4

Module Responsible	Prof. Behrooz Asgari
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	Subject-related knowledge and understanding: • Key concepts of national systems of innovation • The nation-specific determinants of innovation • The system-approach to the development of product and service innovations
Skills	After completing this module, students will have skills in: • language and concepts of national and regional determinants of innovation for product and service development • related product development issues to the national and regional
Personal Competence	
Social Competence	
Autonomy	After completing this module, students will have skills: • familiarization with the system approach of innovation • ability of apply principles of national systems of innovation to decision problems of policy makers and public administrators
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Credit points	4
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Ritsumeikan Asia Pacific University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Technology and Innovation Management in Japan (APU): Compulsory

Course L1935: National Innovation Systems (APU)	
Typ	Lecture
Hrs/wk	4
CP	4
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Lecturer	Prof. Behrooz Asgari
Language	EN
Cycle	WiSe

Content	• Why study National Innovation Systems?
	  ◦ The Concept of National Innovation Systems
	  ◦ National Structures and Policies framing innovations
	• Analytical Perspectives: What is Innovation?
	  ◦ History and Development of the NIS Concept
	  ◦ The system nature of innovation
	• Recent Trends in NIS Research
	• NIS and Innovation Policy
	• Examples of National Innovation Systems
	  ◦ United States
	  ◦ Japan
	  ◦ Korea
	  ◦ Malaysia

Literature	No textbook , but a journal articles and book chapters

Module M1361: Quality and Operations Management (APU)

Courses

Title	Typ	Hrs/wk	CP
Quality and Operations Management (APU) (L1936)	Lecture	4	4

Module Responsible	Prof. Behrooz Asgari
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	• knowledge base for studies and work in the field of Quality and Operations Management • knowledge of the foundations of Quality and Operations Management • an introduction to tools and approaches useful in improving organisational processes and products • Understanding of Japanese-style quality management philosophy and processes
Skills	After completing this module, students will have skills in: • language, concepts, and tools to deal with quality and operations issues in order to gain competitive advantage through operations.
Personal Competence	
Social Competence	
Autonomy	After completing this module, students will have skills: • familiarization with the problems and issues confronting operations managers • ability of apply principles and methods of an integrated quality and operations management.
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Credit points	4
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Ritsumeikan Asia Pacific University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Technology and Innovation Management in Japan (APU): Compulsory

Course L1936: Quality and Operations Management (APU)	
Typ	Lecture
Hrs/wk	4
CP	4
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Lecturer	Prof. Behrooz Asgari
Language	EN
Cycle	WiSe

Content	• Operations Strategy in a Global Environment
	  ◦ Operations and Productivity
	  ◦ Quality and Operations Management
	  ◦ Lean Production
	• Decision-Making Tools
	• Forecasting
	• Managing Quality
	  ◦ Design for Quality
	  ◦ Improvement Processes
	  ◦ Total Quality Management
	• Statistical Process Control
	• Process Strategy
	  ◦ Process View. Inventory, Thruput, Flowtime
	  ◦ Work flow management
	  ◦ Bottleneck Analysis, Level vs. Chase plans
	  ◦ Control charts and Just-in-time Processes
	• Capacity Planning
	  ◦ Linear Programming: Objectives, Constraints
	  ◦ Linear Programming Formulations
	• Location Strategies
	  ◦ Transportation Models
	  ◦ Layout Strategy

Literature	• Russell, Roberta S., Taylor, Bernard W. (2014) Operations management, Wiley; 8th Edition International Student Version

Module M1363: Project Management (APU)

Courses

Title	Typ	Hrs/wk	CP
Project Management (APU) (L1940)	Lecture	4	4

Module Responsible	Prof. Noboyuki Yamamura
Admission Requirements	None
Recommended Previous Knowledge	Basic management subjects.
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	• Practical knowledge and skills to structure manage and evaluate projects • Identify project risks • Apply methods for motivating teams and retaining focus • Knowledge project management that combines the 3K of kakusin (innovation), kaihatsu (development), and kaizen (improvement)
Skills	• Identify project risks. • apply methods for motivating teams and retaining focus. • Use tools and techniques for planning and tracking a project. • the implementation of innovative project management techniques and processes. • adaptation of project management techniques to projects in developing countries including alternative planning strategies for conditions of uncertainty and organizational factors in policies, gaining acceptance, assuring implementation, and coping with unanticipated consequences.
Personal Competence	
Social Competence	- Teamwork and communication skills - Intercultural management skills specific to Japan and Asia
Autonomy	- Leadership and decision making skills. - Project management skills.
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Credit points	4
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Ritsumeikan Asia Pacific University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Technology and Innovation Management in Japan (APU): Elective Compulsory

Course L1940: Project Management (APU)	
Typ	Lecture
Hrs/wk	4
CP	4
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Lecturer	Prof. Noboyuki Yamamura
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1368: Management of Japanese Family Businesses (APU)

Courses

Title	Typ	Hrs/wk	CP
Management of Japanese Family Businesses (APU) (L1947)	Lecture	4	4

Module Responsible	Prof. Kenji Yokoyama
Admission Requirements	None
Recommended Previous Knowledge	Basic management subjects.
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	• Five Models of family business • Issues, such as succession, innovation, relationship with community and longebity • How Japanese family business is different from those of other countries • The secret of the success of Japanese Family business • What are important for successful family business
Skills	The students will learn management and leadership skills specific to small and medium size familiy businesses in Japan. This incorporates general communication and project management skills as well as intercultural skills for the Japanese region.
Personal Competence	
Social Competence	- Teamwork and communication skills. - Project management skills.
Autonomy	Leadership and decision making skills
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Credit points	4
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Ritsumeikan Asia Pacific University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Technology and Innovation Management in Japan (APU): Elective Compulsory

Course L1947: Management of Japanese Family Businesses (APU)	
Typ	Lecture
Hrs/wk	4
CP	4
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Lecturer	Prof. Kenji Yokoyama
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1367: Supply Chain Management (APU)

Courses

Title	Typ	Hrs/wk	CP
Supply Chain Management (APU) (L1946)	Lecture	4	4

Module Responsible	Prof. Rian Beise-Zee
Admission Requirements	None
Recommended Previous Knowledge	Basic management subjects.
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	• How the supply chain is designed using fundamental principles • How to achieve balance and efficiency by focusing on Variety: of offerings based on operational efficiency and market demand, Velocity through all processes of the supply chain and Manage inconsistencies carefully to reduce cost and improve quality and transparency to enable continuous learning and improvement • How to improve production and operations in a variety of industries, including manufacturing, banking, health care and retailing
Skills	- Skills to design a supply chain - Skills to improve a supply chain using continuous improvement approaches
Personal Competence	
Social Competence	Teamwork and communication skills.
Autonomy	- Project management skills - Analytical decision making skills
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Credit points	4
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Ritsumeikan Asia Pacific University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Technology and Innovation Management in Japan (APU): Elective Compulsory

Course L1946: Supply Chain Management (APU)	
Typ	Lecture
Hrs/wk	4
CP	4
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Lecturer	Prof. Rian Beise-Zee
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1364: Japanese I (APU)

Courses

Title	Typ	Hrs/wk	CP
Japanese I (APU) (L1943)	Lecture	4	4

Module Responsible	Prof. Rian Beise-Zee
Admission Requirements	None
Recommended Previous Knowledge	None
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	By the end of the module students will have learned: • To speak and familiarize themselves with Japanese as a foreign language • The students will be able to identify the basic sounds, words and expressions of the Japanese language. They will be able to say or express basic ideas, sentences, and desires in simple sentences. They will learn to write the Japanese script and learn enough vocabulary to continue with the Basic 2 level course.
Skills	Students will gain basic communication skills in the Japanese language.
Personal Competence	
Social Competence	Communication skills.
Autonomy	The course will help students orienting themselves in every day life in Japan through a better understanding of language and culture.
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Credit points	4
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Ritsumeikan Asia Pacific University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Technology and Innovation Management in Japan (APU): Elective Compulsory

Course L1943: Japanese I (APU)	
Typ	Lecture
Hrs/wk	4
CP	4
Workload in Hours	Independent Study Time 64, Study Time in Lecture 56
Lecturer	Prof. Rian Beise-Zee
Language	
Cycle	WiSe
Content	
Literature	

Specialization Technology Venturing (KTU)

Kaunas University of Technology (KTU) in Lithuania specialises in Technology Venturing during the second year of the GTIME program. Students will gain a broad understanding of the technology venturing process within different size projects and different industrial contexts. All studied topics are pulled together to develop 'right to win' business strategies that are sustainable and differentiated.

The modules at KTU are structured around the following topics: How to initiate technology venturing and develop business model for technology driven business? How to build a successful team for venturing and create a successful start-up? What are the differences between an idea and true opportunity and how to search for promising business opportunities? How to gather the resources necessary to create a great company and leverage venture capital? How to pitch business ideas to investors and manage stakeholder relations? How to assess business value and monitor business growth? What is entrepreneurial leadership in a large company? How to take advantage of doing business within the networks? How to manage corporate intellectual property in order stay competitive in the market? How can organizations fully exploit their potential and capture maximum value for growth and success?

The second-year modules in Kaunas are designed and executed by top academic researchers, and therefore are strongly research oriented. By introducing students to the state-of-the-art in academic research, the aim is to give them necessary tools to properly understand, evaluate and solve real-life cases, and to successfully conduct their final master degree project research.

The problem-based study approach adopted at KTU is intended to disclose a full variety of the problems related to technology venturing that arise in a wide range of different contexts, including: manufacturing, services, small to large organizations and the private and public sectors.

Module M1376: Business Models Innovation (KTU)

Courses

Title	Typ	Hrs/wk	CP
Business Models Innovation (KTU) (L1955)	Lecture	5	5

Module Responsible	Prof. Giedrius Jucevičius
Admission Requirements	None
Recommended Previous Knowledge	General management theory (non-mandatory)
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
	1. Knows the concepts of value innovation and business model innovation, understands their theoretical structure and is capable of making the projections of new value creation 2. Knows the theoretical alternatives of new value creation and is capable of applying the methods of rethinking the boundaries of markets and industries 3. Knows the main patterns of business models and is capable of linking them with the new value propositions 4. Is capable of identifying the opportunities of new business models and new value propositions in the contemporary business environment

Knowledge	5. Knows the recent trends of consumption in the contemporary markets and is capable of integrating them into the construction of new value propositions 6. Understands the challenges underlying the practical implementation of value innovation and is capable of meeting them successfully in the organizational practice 7. Knows the key theories and practices in change management, related to value innovation, and is capable of applying them successfully in organizational activities 8. Is capable of testing the prototypes of new value propositions in the market and interpreting the obtained data
Skills	1. Able to identify new business possibilities through profound and entrepreneurial evaluation of economic, social, and other changes 2. Capable of creating innovative business models, processes of innovation implementation, and business intelligence systems. 3. Able to think sistemically, critically, and creatively; capable of communicating and presenting the acquired knowledge.
Personal Competence	
Social Competence	Teamwork, discussion, ideas sharing, harmonizing business development and the principles of sustainable development
Autonomy	Presentation skills, literature research, data collection, analyses and interpretation based on gained theoretical concepts.
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Credit points	5
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Kaunas Technical University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Technology Venturing (KTU): Compulsory

Course L1955: Business Models Innovation (KTU)	
Typ	Lecture
Hrs/wk	5
CP	5
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Lecturer	Prof. Giedrius Jucevičius
Language	EN
Cycle	WiSe

Content	• New competition arena: disruptive changes in technology and business
	  ◦ Variety of innovations
	  ◦ Disruptive innovations: markets and technologies
	  ◦ Towards value- and business model innovation
	• Redefinition of market boundaries
	  ◦ What is my business?
	  ◦ Value innovation, “blue ocean strategy”, “white space” and other concepts
	  ◦ Changes in value chains and evolving profit patterns
	• Business model innovation
	  ◦ Business model as dominant business logic
	  ◦ Business model canvas
	  ◦ Innovative business model in different industrial contexts
	• Putting new value architecture into practice
	  ◦ Prototyping
	  ◦ Testing
	  ◦ Lean business model canvas
	• Managing organizational change to support value innovation
	  ◦ Key concepts in change management
	  ◦ Overcoming the barriers to implementing value innovation

Literature	Osterwalder, A., Pigneur, Y. (2010). Business Model Generation. London: John Wiley Press. Kim, W.Ch., Mauborgne, R. (2005). Blue Ocean Strategy. Harvard Business School Press. Anthony, Scott D., (2008). "The innovator’s guide to growth. : putting disruptive innovation to work". Johnson, Mark W. (2010). Seizing the white space. Boston: Harvard Business Press. Blank, S., Dorf, B. (2012). The Startup Owner's Manual: The Step-By-Step Guide for Building a Great Company Ries, E. (2011). The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses.

Module M1377: Technology Venturing (KTU)

Courses

Title	Typ	Hrs/wk	CP
Technology Venturing (KTU) (L1956)	Lecture	5	5

Module Responsible	Prof. Monika Petraite
Admission Requirements	None
Recommended Previous Knowledge	General management theory (non-mandatory)
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	1. The student is able to initiate technological venture and develop business model for technology driven business. I.e., he (she) is able to generate business idea, and knows major business generation techniques, and is capable to build a technology venturing team corresponding to the competences desired, and team life cycle, as well as is capable to act as a business mentor for start-up. He (she) is knows the techniques of technological business opportunity search and evaluation, including market validation techniques, as well as business communication methods 2. The student is able to put technology venture in action, while executing technology business idea market validation, defining go-to-market strategy and taking entrepreneurial marketing decisions, combined with agile product development and business idea pivoting techniques. 3. The student is able to carry out financial planning and deal with venture capital issues; to carry out financing modelling and metrics, plan capitalization, manage venture capitalist relations and pitch business ideas to investors.
Skills	Ability to solve problems, carry out financial modelling and planning, pitch ideas, communicate with stakeholders.
Personal Competence	
Social Competence	Communication, team building, idea exchange in social groups.
Autonomy	Presentation and idea pitching skills, communication, business development.
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Credit points	5
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Kaunas Technical University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Technology Venturing (KTU): Compulsory

Course L1956: Technology Venturing (KTU)	
Typ	Lecture
Hrs/wk	5
CP	5
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Lecturer	Prof. Monika Petraite
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1378: Business Valuation and Investor Relations Management (KTU)

Courses

Title	Typ	Hrs/wk	CP
Business Valuation and Investor Relations Management (KTU) (L1957)	Lecture	10	10

Module Responsible	Prof. Lina Užienė
Admission Requirements	None
Recommended Previous Knowledge	General management theory (non-mandatory)
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	1. To understand the essence of business valuation and be able to apply valuation methods within different contexts. 2. To understand business financing principles and be able to reason the selection of business financing sources. 3. To understand the concept of business risks taken and be able to apply risk management methods. 4. To understand principles of organization's communication and be able to develop relations with investors.
Skills	Ability to solve problems, analyse case studies, apply valuation methods, pitch ideas, communicate with stakeholders
Personal Competence	
Social Competence	The students shall work in teams while solving a real-life business problem, thus they will gain competence in teamwork, communication and idea exchange in social groups.
Autonomy	Presentation skills, literature research, creative methods’ application.
Workload in Hours	Independent Study Time 160, Study Time in Lecture 140
Credit points	10
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Kaunas Technical University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Technology Venturing (KTU): Compulsory

Course L1957: Business Valuation and Investor Relations Management (KTU)	
Typ	Lecture
Hrs/wk	10
CP	10
Workload in Hours	Independent Study Time 160, Study Time in Lecture 140
Lecturer	Prof. Lina Užienė
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1379: Creative Decision Making (KTU)

Courses

Title	Typ	Hrs/wk	CP
Creative Decision Making (KTU) (L1958)	Lecture	5	5

Module Responsible	Inga Uus
Admission Requirements	None
Recommended Previous Knowledge	General management theory (non-mandatory)
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	The students shall know the stages of creative decision making, they will be aware of different approaches to creative decision making as well as tactics and tools applied in creative decision making.
Skills	The students shall be able to choose appropriate ways to solve problems on individual and group levels, they shall be able to choose tactics and instruments in order the decision made could be considered creative. The students shall be able to analyse the way the decisions had been made and to recognize creative features of decisions made by others. The course attendants shall solve a real-life business problem in a creative way thus gaining practical skills in creative problem solving.
Personal Competence	
Social Competence	The students shall work in teams while solving a real-life problem, thus they will gain competence in teamwork and idea exchange in social groups.
Autonomy	Presentation skills, literature research, creative methods' application.
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Credit points	5
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Kaunas Technical University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Technology Venturing (KTU): Elective Compulsory

Course L1958: Creative Decision Making (KTU)	
Typ	Lecture
Hrs/wk	5
CP	5
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Lecturer	Inga Uus
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1380: International Management (KTU)

Courses

Title	Typ	Hrs/wk	CP
International Management (KTU) (L1959)	Lecture	5	5

Module Responsible	Prof. Jurgita Sekliuckiene
Admission Requirements	None
Recommended Previous Knowledge	General management theory (non-mandatory)
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	Students will get knowledge in the field of comparative international management. The course will provide students with deeper understanding of the international management processes, especially as far as the national cultural and institutional diversity are concerned. The national diversity is linked with the innovation processes taking place in various socio-cultural contexts. 1. Knows the main theoretical approaches to international comparative management and relation between the processes of globalization and the remaining aspects of national diversity 2. Knows the cultural and institutional parameters of the diversity of international environment of organizations, and is capable of taking them into account while implementing the organizational strategy 3. Knows the diversity of international companies and organizations, understands the international aspects of leadership and is capable of performing in the multicultural teams 4. Understands the international aspects of human resource management and is capable of applying them in organizational practice 5. Knows the strategies of entry into international markets, outsourcing and the aspects of managing the international value networks 6. Understands the functioning of international networks of knowledge and innovation and their potential contribution to the competitive advantage of the firm 7. Knows the specifics of national systems of management and innovation, and is capable of adapting accordingly the organizational strategies 8. Knows the main dimensions of cultural diversity, understands potential areas of coss-cultural conflicts and synergies, and is capable of managing in the culturally diverse environments
Skills	Case study, problem solving sessions
Personal Competence	
Social Competence	Teamwork
Autonomy	Presentation skills, literature research
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Credit points	5

Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Kaunas Technical University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Technology Venturing (KTU): Elective Compulsory

Course L1959: International Management (KTU)	
Typ	Lecture
Hrs/wk	5
CP	5
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Lecturer	Prof. Jurgita Sekliuckiene
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1382: Intellectual Property Management (KTU)

Courses

Title	Typ	Hrs/wk	CP
Intellectual Property Management (KTU) (L1960)	Lecture	5	5

Module Responsible	Prof. Lina Užienė
Admission Requirements	None
Recommended Previous Knowledge	General management theory (non-mandatory)
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	Intellectual property management competence will be formed for students, while delivering knowledge about the essence of IP, its application and protection strategies for creating international competitiveness of business. After learning the contents of the module student will know and understand main IP exploitation strategies for increasing international business competitiveness. Student will be able to manage the processes of IP creation, exploitation and protection, to define the specifics of IP objects, to perform their search, to define the efficiency of creation and usage, to model the legalization and application strategies and to select international protection means. • 1.Know and understand the essence, importance and management peculiarities of intellectual property in the context of international competitiveness. Know the intellectual property objects, their national and international legal protection, understand the operation of intellectual property information system and its possibilities in the business. • 2. Know and understand specifics and methods of intellectual property objects evaluation, applied intellectual property management strategies ant their characteristics depending on the objects of local or international protection. • 3. Is able to analyse the environment of intellectual property objects, using national and international information systems of intellectual property objects. • 4. Is able to identify intellectual property objects, to evaluate them and to select most efficient commercialization strategies, with regard to their legalization, protections and usage aspects. Is able to select intellectual property protection means, while applying valid national and international legislations.
Skills	Case study, problem solving sessions.
Personal Competence	
Social Competence	Teamwork, debate, idea exchange in social groups.
Autonomy	Presentation skills, literature research, data collection, analyses and interpretation based on gained theoretical concepts.
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Credit points	5
Course achievement	None
Examination	Written exam
Examination	

duration and scale	Examination at Kaunas Technical University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Technology Venturing (KTU): Elective Compulsory

Course L1960: Intellectual Property Management (KTU)	
Typ	Lecture
Hrs/wk	5
CP	5
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Lecturer	Prof. Lina Užienė
Language	EN
Cycle	WiSe
Content	
Literature	

Module M1383: Management of Organizational Networks (KTU)

Courses

Title	Typ	Hrs/wk	CP
Management of Organizational Networks (KTU) (L1961)	Lecture	5	5

Module Responsible	Inga Uus
Admission Requirements	None
Recommended Previous Knowledge	General management theory (non-mandatory)
Educational Objectives	After taking part successfully, students have reached the following learning results
Professional Competence	
Knowledge	As the course is aimed at gaining the knowledge of and experience in analyzing, developing and managing organizational networks and other types of inter-organizational relationships and systems in diverse institutional contexts, upon completion of the course the students shall know core concepts and theories in analyzing and managing organizational networks. They will understand the peculiarities of designing, creating and managing such inter-organizational structures. The students will also gain knowledge of specific business network structures such as clusters, national business systems, they will be able to recognize and understand the functioning of systems of social innovation, business and manufacturing.
Skills	The course provides with knowledge and skills in understanding origins and existence of contemporary organizational networks, their context and main preconditions for the development. Generally this course emphasizes different methodologies, research and approaches to organizational networks by pointing out its complexity in three levels - micro (inter-organizational aspects), meso (clusters, etc.) and macro (social systems). The students will be able to analyze the preconditions and the motives of the evolution of a business network, to define the form of an inter-organizational structure, to define the structure and the system of the relations. They will also be able to manage core activities in the network development. The students will know and shall be able to apply business and entrepreneurship mind-set in different contexts, they shall be able to interpret research results in a broader social context and prepare recommendations for solving the identified problems. The students will be able to understand the evolution, development and management of organizational clusters, they will know the core concepts in cluster management, they will be able to describe the processes that are going on in clusters as well as discuss the value of clusters in wider national and international contexts. The students will be able to use professional terms in the discussions on organizational networks, they will be able to be involved in the discussions on organizational networks at the professional level. They will as well be able to analyze core concepts in organizational networks, and they will be able to manage core processes in organizational networks. The students shall be able to identify strategic challenges, and prepare adequate responses based on smart use of key competences and absorption of external resources. The students shall be able to communicate effectively with people in multicultural environment and make use of modern information technologies.
Personal Competence	
Social Competence	Multinational virtual team work (X-Culture project)

Autonomy	Co-working in a multicultural virtual team, project work, writing of an essay.
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Credit points	5
Course achievement	None
Examination	Written exam
Examination duration and scale	Examination at Kaunas Technical University
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Specialisation Technology Venturing (KTU): Elective Compulsory

Course L1961: Management of Organizational Networks (KTU)	
Typ	Lecture
Hrs/wk	5
CP	5
Workload in Hours	Independent Study Time 80, Study Time in Lecture 70
Lecturer	Inga Uus
Language	EN
Cycle	WiSe
Content	
Literature	

Thesis

Module M-003: Master Thesis

Courses

Title	Typ	Hrs/wk	CP

Module Responsible	lt. FSPO
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.
Autonomy	Students are able: • To structure a project of their own in work packages and to work them off accordingly. • 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	according to Subject Specific Regulations
Examination duration and scale	see specific regulations
Assignment for the Following Curricula	Global Technology and Innovation Management & Entrepreneurship: Thesis: Compulsory