

Business Design Programme

Programme Description

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I Introduction

Name: Business Design Programme (Swedish: Affärsdesignprogrammet)

Background

The rapidly emerging global information- and network society is dramatically rewriting the rules of business. Innovative ideas, successful management strategies, and know-how are increasingly replacing physical assets as the keys to competitiveness for enterprises in all sectors. This transformation will mainly be driven by a bottom-up effort from industry and universities by persons possessing a new set of advanced skills and tools adjusted to value creation based on entrepreneurship and the management of intellectual property. With the Business Design programme, students are offered the chance to become one of the leaders of this process, by participating in a cutting edge reality-based business education combining Management, Economics, Law, and Technology. The Business Design programme is provided at three different schools: Chalmers School of Entrepreneurship (CSE), Gothenburg International Bioscience Business School (GIBBS) and School of Intellectual Capital Management (ICM).

Prerequisites

In order to qualify for the Business Design Programme, students must fulfill the general requirements for a master's programme. Students are also required to have a minimum of 30 ECTS in the area of innovation and entrepreneurship. Most engineering, legal, economic or design educations qualify. Students with other backgrounds may also qualify. Further specific admissions criteria for each individual track are found in the "admissions process and requirements" document (please see appendix B for details). Please note that this document, especially concerning the dates, is subject to change each year – for an updated version, please contact anneli.hildenborg@cip.chalmers.se.

Degree

After having completed the Business Design Programme, the students are eligible for a Master of Science degree in Innovation and Entrepreneurship.

For participants with a bachelor degree from Chalmers the Business Design Programme is also expected to be accredited for a Master of Science degree in that area. So far Industrial Economics, Biomedical Engineering and Automation and Mechatronics are accredited.

Career Opportunities

Incubation Track: CSE & GIBBS

The majority of the CSE alumni (140 students have graduated so far) work in newly started growth companies with business, product and technology development. The broad education platform, however, makes students highly competitive also outside of the start-up sphere and CSE graduates can therefore be found at a wide range of positions including business development in large corporations, management consulting, university innovation systems, and venture capital to name a few.

GIBBS started in 2005 and thus lacks statistics on career development for alumni. However, GIBBS is run on the same platform as CSE and therefore career paths for graduates are likely to follow the same paths as for CSE graduates (see above).

Internship Track: ICM

ICM graduates have historically started their professional journey primarily as business analysts, management consultants, business lawyers, IP specialists in enterprises of all sizes both in Sweden and internationally, as well as entrepreneurs in various fields. Through its comprehensive, interdisciplinary nature, however, the education opens up a large space of potential future career opportunities, and ICM's industry network in combination with the ICM Alumni network forms a strong platform for future career development.

Programme Aim

The purpose of the business design programme is to equip students with skills and tools necessary to facilitate, create and manage technology-based business. The students shall, after completion of the programme, have a broad knowledge of business design and a deep knowledge in their specialization area.

2 Learning Outcomes

After having completed the programme, students should be able to:

1. **Construct knowledge-based business** in interplay with complementary competences, thereby integrating technological, economic, managerial and legal skills, into innovations, products, ventures and market offerings.
2. **Analyze, construct and use tools** to design innovations, such as e.g. different intellectual property tools (patents, standards, contracts, designs, trademarks, databases, copyrights, etc), in interaction with research, market assessment and product development.
3. Communicate, reflect, manage **group dynamics and responsible leadership** applied on real-life and simulated complex situations.
4. Reflect **around citizenship and entrepreneurship for sustainable development**.
5. (Incubation track only): Create and manage start-up ventures
6. (Internship track only): Conduct strategic business development and business management

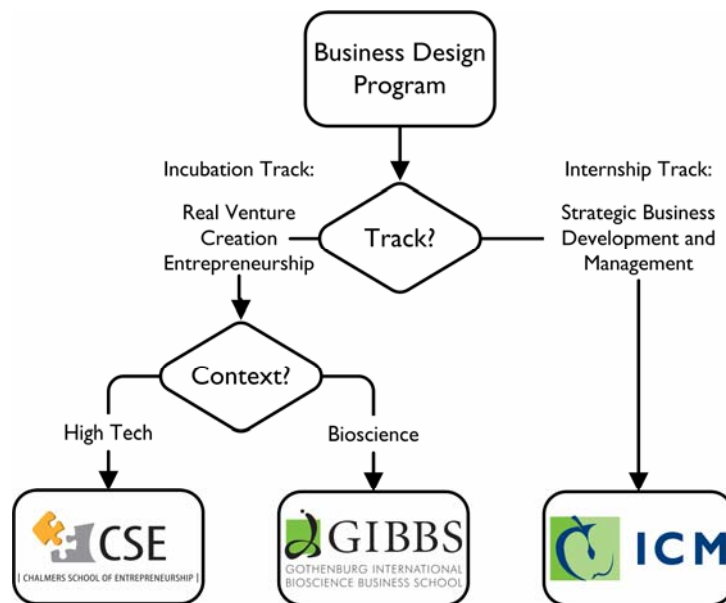
Translated to CDIO goals, this would include the following:

- A. Apply technical knowledge and reasoning (corresponding to learning outcome 1 & 2)
 - A.1 Use their knowledge of underlying sciences (corresponding to learning outcome 1)
 - A.2 Use their knowledge of MELT (management, economics, law and technology) tools (corresponding to learning outcome 2)
- B. Personal and Professional Skills and Attributes (corresponding to learning outcome 1, 2, 3 & 4)
 - B.1 Apply engineering reasoning and problem solving (corresponding to learning outcome 1 & 2)
 - B.2 Use their reflective skills (corresponding to learning outcome 4)
- C. Be able to work in a group and communicate (corresponding to learning outcome 3)
 - C.1 Manage group dynamics (corresponding to learning outcome 3)
 - C.2 Communicate (corresponding to learning outcome 3)
 - C.3 Communicate in the English Language (corresponding to learning outcome 3)
 - C.4 Show leadership qualities (corresponding to learning outcome 3)
- D. Conceiving, Designing, Implementing and Operating Systems in the Enterprise and Societal Context (corresponding to learning outcome 1)
 - D.1 Conceiving External and Societal Context (corresponding to learning outcome 1)
 - D.2 Conceiving Enterprise and Business Context (corresponding to learning outcome 1, 5 & 6)
 - D.3 Designing and Constructing Innovations (corresponding to learning outcome 1, 5 & 6)
 - D.4 Designing and Constructing Knowledge-Based Business (corresponding to learning outcome 1, 5 & 6)

For a matrix of the CDIO goals and their relation to courses, please see appendix C.

3 Programme Idea

The pedagogic approach in the programme emphasizes science-based entrepreneurship and business design, through real-life innovation projects, longer project assignments, IT-based simulations and role-plays, problem based learning, teamwork, and interplay with Chalmers, its innovation system, and the surrounding knowledge-based industry. In short, the programme offers the student a laboratory for simulated and real-life action learning. This laboratory has been built around Chalmers School of Entrepreneurship (CSE) and the Center for Intellectual Property studies (CIP) since 1997 and is today internationally recognized as providing a unique environment and teaching tools for advanced entrepreneurial learning. Students are expected to have a high level of motivation for and interest in technology-based innovation projects through start-ups or within established firms (through collaborative internships), including interaction with idea providers (inventors and researchers), fellow students and international experts. Students with different backgrounds in engineering, science, business and law should attend the programme. This diversity provides an environment with opportunities for students to constructively learn from one another, while enhancing their specific strengths in business design. The *Incubation and internship track* allows students to specialize into business design by being engaged in our incubator or internship programs as well as learning from courses highly integrated with these programs. In the *Elective track*, students can choose a more individualized education. The Incubation track is offered by the Chalmers School of Entrepreneurship and Gothenburg International Bioscience Business School. The Internship track is offered by CIP's School of Intellectual Capital Management.



Incubation Track

Chalmers School of Entrepreneurship

Chalmers School of Entrepreneurship offers a unique master's level education, designed to develop the entrepreneurial leaders of tomorrow. Students of the programme interplay with academia and industry to transform a promising idea or research project into a successful high-tech venture.

The education is based on a proven system of action-based learning, where students are given a strong foundation in theoretical frameworks which they then apply in their own real start-up ventures. CSE is confident that the real-world context is the key to the development of future entrepreneurial leaders.

The student teams are supported by a network of coaching and professional advice, by different actors all collaborating to fill the individual needs of each student and project. As the programme concludes and the projects move forward, students continue to receive guidance and support from the network facilitating both personal- and business development.

Chalmers School of Entrepreneurship is situated in the research oriented environment at Chalmers and Göteborg University. The combination of the two branches enables tailored support for the different projects, as well as developed structures to suit the individual project preferences of the students. The integrated educational and experience-based learning will challenge the students to test their boundaries and exceed their potential, building the innovative companies of the future in the process.

For more information, visit <http://www.cse.cip.chalmers.se/>

Gothenburg International Bioscience Business School

The Gothenburg International Bioscience Business School (GIBBS) provides Europe's only education in bio-entrepreneurship, training tomorrow's value-creators in bioscience. GIBBS offers students an interdisciplinary master's level programme in bioscience business creation, and provides practical business experience through the opportunity to develop real-life bioscience innovation projects. GIBBS is dedicated to corporate, academic and institutional entrepreneurship within bioscience.

The GIBBS track is built around an action-oriented learning process, which stimulates creativity and curiosity by blending competences in management, economics, law, and bioscience. The first part of the education consists of simulation-based courses in entrepreneurship and intellectual property management. Newly acquired insights are practically applied in simulated business projects, in preparation for the demands of the real-life business creation projects that GIBBS students will subsequently take on during the project year.

For the project year, the students will form teams and be matched with an idea provider, with whom they will develop and run a bioscience start-up. Each project will build on a bioscience based innovation with clear commercial potential, and the students are expected to fully commit themselves to evaluating, developing, and marketing the innovation in a way that captures this potential. Course-based education will continue in parallel with project development, to ensure that each project has access to the full skill-set needed to successfully build their business. By the end of the education, students will have mastered the skills needed for bioscience entrepreneurship.

For more information, visit <http://www.cip.chalmers.se/gibbs/>

Internship Track

School of Intellectual Capital Management

School of Intellectual Capital Management (ICM) offers an award-winning master's level education focused on preparing tomorrow's business leaders for the knowledge-based economy by developing the necessary skills to design organizations, innovations and markets. By bringing together the fields of Management, Economics, Law, and Technology, ICM students are exposed to the complementary competences and perspectives that allow them to aim for the top of their field.

ICM prepares students for business development and management in the knowledge based economy through a highly developed and demanding business simulation environment. Students are given the role of intellectual capital manager (value manager) in a cutting edge technological venture, and are expected to meet and exceed the

requirements of a real-life modern business situation. The simulated situations cover a wide range of contingencies and fields of expertise, requiring students to draw on all the necessary skills and tools that ICM provides them with.

Through an active and fruitful collaboration with leading industry actors, especially through the unique ICMXCHANGE program, ICM is able to guarantee its students a close connection to business reality throughout the education. This broad international network participates actively in designing and operating the education as well as providing master's thesis opportunities and internship possibilities. Throughout the summer, ICM offers exceptional achievers prestigious internship positions with companies across the world, including leading technology-based enterprises, law firms, IP and business consultancies, university technology transfer offices, business incubators and science parks, where they apply and further develop the abilities they have acquired at ICM.

For more information, visit <http://www.icm.cip.chalmers.se/>

Programme Plan (tentative)

Incubation Track: CSE & GIBBS

Year 1 (mandatory and elective)

Quarter 1 (mandatory)	Quarter 2 (mandatory)	Quarter 3 (elective)	Quarter 4 (elective) ¹
IP Strategies 7,5 ECTS (IPS)	Technology-based Entrepreneurship 15 ECTS (TBE)		Idea evaluation 7,5 ECTS (IE) (mandatory)
Design of Technological Innovations and Markets 7,5 ECTS (DTIM)			

Year 2 (mandatory)

Quarter 1 (mandatory)	Quarter 2 (mandatory)	Quarter 3 (mandatory)	Quarter 4 (mandatory)
New Venture Strategy and Formation 7,5 ECTS (NVSF)			
Entrepreneurial Leadership and Organizing 7,5 ECTS (ELO)			
Valuation and Entrepreneurial Finance 7,5 ECTS (VEF)			
Marketing a Knowledge-Based Business 7,5 ECTS (MKB)			
Master's thesis 30 ECTS			

¹ The following courses will be provided as electives from the Business Design program: Idea evaluation and feasibility study, 7,5 ECTS credits and Technology-based business law, 7,5 ECTS credits, Project management 7,5 ECTS credits, Business Development for Growth Companies (Venture Cup) 7,5 ECTS credits and Societal entrepreneurship 7,5 ECTS credits.

Internship Track: ICM

Year 1 (mandatory)

Quarter 1 (mandatory)	Quarter 2 (mandatory)	Quarter 3 (mandatory)	Quarter 4 (mandatory)
IP Strategies 7,5 ECTS (IPS)	Technology-based Entrepreneurship 15 ECTS (TEB)	Patents and Innovation Engineering 7,5 ECTS (PIE)	Knowledge-based Business Development and Management 15 ECTS (KBDM)
Design of Technological Innovations and Markets 7,5 ECTS (DTIM)		Brand Management 7,5 ECTS (BM)	

Year 2 (mandatory)

Quarter 1 (mandatory)	Quarter 2 (mandatory)	Quarter 3 (mandatory)	Quarter 4 (mandatory)
Management of Open Innovation and Network-based Markets 7,5 ECTS (MOINM)	Advanced ICM Theory 7,5 ECTS (AICMT)	Applied Intellectual Capital Management 15 ECTS (AICM)	
Master's thesis 30 ECTS			

Elective Track

Year 1 (mandatory and elective)

Quarter 1	Quarter 2	Quarter 3	Quarter 4
IP Strategies 7,5 ECTS (IPS)	Technology-based Entrepreneurship 15 ECTS (TBE)	Electives 30 ECTS ²	
Design of Technological Innovations and Markets 7,5 ECTS (DTIM)			

Year 2 (mandatory and elective)

Quarter 1	Quarter 2	Quarter 3	Quarter 4
Electives 30 ECTS ³			
Master's thesis 30 ECTS			

² Please note that at least 15 ECTS credits in total must be within the subject of Innovation and Entrepreneurship. These credits can be obtained either during the first year third or fourth quarter, or during the second year.

³ Please note that at least 15 ECTS credits in total must be within the subject of Innovation and Entrepreneurship. These credits can be obtained either during the first year third or fourth quarter, or during the second year.

All students attend the first semester of the programme together. Students get to study the basics necessary to be able to construct knowledge-based business. All students also write their master's thesis during the second year. However, after the first semester, the tracks split up.

The students who have chosen the elective track have a large freedom to design their own education, with some restrictions (see the matrix above including footnotes).

Students attending the incubation track will, during the second semester, have an opportunity to choose courses preparing them for the project year. During the third and fourth semester, the students will work with a real project in a pre-incubator, at the same time as they are studying four courses, each designed to give the students the tools and skills they need in order to run their projects. Many assignments are directly related to the project, where the students get to apply the tools and skills they have acquired during the first and second semesters. For example, students create business plans, market analyses, budgets and similar for their own projects.

Students attending the internship track will, during the second semester and the beginning of the third semester, work in a simulated lab environment with virtual business simulations. Each student will perform given tasks on a very practical level, including e.g. negotiation, presentations, drafting memos, creating strategies, draft patent claims etc. During the remaining part of the third semester and during the fourth semester, students will work with real-life projects (master's thesis extended) and at the same time study advanced courses linked to their projects.

International Comparison

Frequent international benchmarking studies regarding master-level entrepreneurship programmes as well as more specific science-based business design programmes have been carried out.⁴ A general conclusion is that the Business Design programme is best compared with a handful of MBA and MSc. programmes in the U.S. (Stanford, MIT, Babson, etc.), U.K. (Cambridge, Imperial College, etc.) and Australia (Swinbourne). Here the Business Design programme has similarities when it comes to gradually including a constructive and action-oriented pedagogy. There is an increased linking of programmes towards e.g. business plan competitions and incubators among these actors. However, so far, no programme has so fully and systematically integrated learning and incubation as the Business Design programme.

Apart from the level of action-based constructive pedagogy, another factor of comparison is the amount of integration of science, technology and/or medicine into the programmes. In recent years a handful of international MSc. programmes have been started, with entrepreneurship focus including courses in science as well. In comparison, the Business Design programme aligns well with these developments through the way science and technology is constructively integrated into the innovation processes that the programme is linked to.

Linkage to Chalmers Research and PhD Schools

The research platform at CIP is interdisciplinary with strong ties primarily to the department of Technology Management and Economics at Chalmers and the department of Law at the School of Business, Economics and Law. Research around the programme includes technical and medical research linked to the innovation projects driven in the environment, as well as international research collaboration with e.g. UC Berkeley, MIT, Lund University, University of Newcastle, Hanken (Finland), and Bond University (Australia). The programme also links to the PhD school in Technology management at the department of Technology management and economics.

⁴ Rasmussen, Einar A., & Sørheim, Roger (2006), "Action-based entrepreneurship education". *Technovation* vol. 26, issue 2, p. 185-194, collected from www.sciencedirect.com.

Teaching Resources and Competence

Since long a broad interdisciplinary faculty has been engaged around the programme along with strong participation from industry. Apart from the department of Technology Management and Economics, partaking faculty come from the department of Product and Production Development at Chalmers, as well as from the School of Business, Economics and Law, the faculty of Arts, and the department of Psychology at Göteborg University. An international business and research community – networked by CIP – is actively engaged in the programme in different capacities, such as lecturers, coaches, advisors, and “role-players” in the simulated lab-environment.

The program draws upon research groups in the area of innovation and entrepreneurship at the department of Technology management and economics with competence in areas such as entrepreneurship, social entrepreneurship, group dynamics, project management, marketing, venture strategy and science and technology studies.

Linkage to Industry

As repeatedly mentioned above, the programme is highly linked to the local milieu (the “innovation system”) through Chalmers School of Entrepreneurship and Gothenburg International Bioscience Business School as well as to CIP’s international business network. The international internship program, at firms including Ericsson, Xerox Parc, Procter & Gamble and Nike, provided by CIP result in strong international job opportunities, as do our incubator programs (at Chalmers and Sahlgrenska) within the innovation system of the region and elsewhere, when it comes to providing our entrepreneurs with a strong growth environment. The pedagogic model also includes guest lecturers from industry, often giving concrete advice in their role as consultants within the areas of management, law, accounting etc., but also inspiring the students through lectures well founded in reality.

Collaboration with Göteborg University

CIP, as a joint center between Chalmers and Göteborg University has a long-standing tradition of interdisciplinary collaboration, especially between Chalmers and the School of Business, Economics and Law.