DESCRIPTION OF ELECTIVE COURSE

Name of the school : Haute école de gestion de Genève	**Academic Year:** 2022-2023

FIRST PART: DESCRIPTION OF MODULE	
1. Domain	Business and Services
2. Department	International Business Management
3. Course name	**Management of Innovation and Technology**
4. Code	30914 + 30924
5. Type of education	☒ Bachelor ☐ Master ☐ MAS ☐ ☐ DAS / CAS / single days
6. Number of ECTS Credits	**9** per semester for each biannual module
7. Prerequisites	☒ Validation of the modules in semesters 1 and 2 ☒ Attendance of the modules in semesters 3 and 4 for full-time students, and semesters 5 and 6 for part-time students ☐ …………………………..
8. Teaching language	☐ French ☐ German ☒ English ☐ Other: …………………………..
9. Objectives	Starting with the concept that an innovation is the right idea on the right market, this course provides the students with tools, methodologies, and frameworks to manage innovation. It's about learning how to develop the right ideas, and how to target the right markets, and how these tools can then be applied in the technological sector, with all the specificities that it entails. Nowadays, innovation happens within the boundaries of a firm in many different and complementary ways. Firms and entrepreneurs innovate in their products, production processes, organizational setups and marketing strategies. They can explore and exploit different sources of knowledge, combined with a creative process. The second semester focuses on the technological sector to put these tools into a new perspective. It allows the students to tackle strategic questions in this sector, as well as to have a global view of the whole value chain applied to industrial or technological products. Some technical skills are introduced to analyze and manipulate data in a business context The course is split into 4 parts:

Fall semester - Design Thinking and Creativity

Design Thinking can be used to optimize, transform, or create products, services, and processes alike. Practiced in multi-disciplinary and non-hierarchical teams, Design Thinking also enables organizations to collaborate better and more in-between departments, and to become more agile overall. When used regularly, Design Thinking tools bring a change of mindset to an organization and contribute to its increased adaptation to our VUCA (volatile, uncertain, complex, ambiguous) world.

During the course, we will cover the underlying principles and key steps of the Design Thinking approach and take a deep dive into each of its four phases: Discovery, Definition, Ideation and Prototyping. Thanks to a mix of theory and practice, participants will learn how to understand user needs in-depth, using different elicitation techniques, before moving to solutions. Participants will then learn how to come up with innovative solutions using structured brainstorming and idea prioritization techniques, before testing these ideas with users.

At the end of this course, students should be able to:

- Understand the overall approach and underlying principles of the Design Thinking approach.
- (Re)frame challenges and issues in a human-centered way.
- Gain a deep understanding of users' needs before moving to any solution.
- Acquire a toolbox of different elicitation techniques (user journeys, observations, in-depth interviews, etc.)
- Alternate different ideation techniques (analogous, asynchronous, constraint, crazy, 6-3-5 brainstorming, de bono hats, SCAMPER method)
- Know how to create and test a solution prototype via different techniques (storyboard, role plays, wizard of oz, etc.)
- Understand its links with sister approaches (Value Proposition Design, Lean, Scrum, Design Sprints, Business Model Canvas, etc.)

Fall Semester – Business Model Innovation

You have a new concept for an innovative product or service that is technology-driven. How do you transform this concept into a innovative business model that is sustainable, profitable, and scalable? Have you ever wondered how startups and existing technology-oriented companies have developed differentiating business models to create competitive advantages and unique value propositions (UVP)? This course will address these topics with a practical approach to understanding, analyzing, and developing innovative business models.

At the end of this course, students should be able to:

- Comprehend what a business model is (and is not), and how it creates and captures value for a firm: its customers, its users, its shareholders, and other stakeholders;
- Analyze existing business models and understand how companies innovate those business models;
- Develop UVPs through innovative business models.

Spring Semester - Managing value chain transformation
Technologies have become pervasive and fundamental to the operation of modern

businesses. These technologies are at the core of today's knowledge-based economy, fuelling the development of innovative products, services, and business processes. Developing modern products and services, however, requires more than just technical excellence. Technology leaders also need a deep understanding of business fundamentals and of how to integrate novel technologies, business processes, and market forces together to create successful products and services.

The Managing Value Chain Transformation module emphasizes strategic and management issues relevant to the development, application, and management of cutting-edge technologies and new digital capabilities. Utilizing the strengths of "Management Innovation & Technology" HEG Geneva program, the module provides students a foundation to assess coming waves of technology, their impact on business process, and their impact on relationships with suppliers, customers, and competitors. Participants of this module are prepared to address the complex issues that lie at the intersection of business and technology. They are trained to lead their future organizations in developing and executing digital strategies.

In addition, over the last decade, the impact of changes in business model combined with the digital revolution has raised questions regarding operations such as: how should the value chain's operations be modified to meet the requirements of the digital consumer? the global consumer? The increased volatility of demand? How can firms continue to benefit from the advantages of their global supply base?

Supply chains have with a few exceptions struggled to follow these megatrends. Our goal will be to walk through the stages of a supply chain transformation: diagnostic – analysis – solution identification and design – analyzing, capturing and creating value, measuring the outcomes.

Participants will acquire insight into analytical methods for accompanying a supply chain transformation: digitally-enabled, collaborative and agile

Spring Semester –Business Analytics

Analytics has become the technology driver of this decade. Organizations employ various analytics tools to generate descriptive, prescriptive, and predictive insights from various data sources to make educated decisions. All of these analytics tools and their respective architectures and methodologies reside under the umbrella term business analytics (BA).

BA combines **data gathering**, **data storage**, and **knowledge management** with analytics tools to present complex internal and competitive information to planners and decision makers. The strategic role of BA has become evident for many businesses since it enhances organizations' management decision-making capabilities. Thanks to a plethora of tools and methods, BA provides purposeful aggregation and consolidation of vast amounts of data from different sources that inform operational as well as strategic management decisions.

This course covers three main phases of BA. The first phase (i.e., **data gathering**, **data storage**, and **data consolidation**) comprises data warehousing, data integration, as well as relational and multidimensional analytical processing. The second phase (i.e., **knowledge discovery**) concerns data mining to extract business

knowledge from consolidated raw data. The third phase (i.e., **knowledge sharing**) encompasses visual analytics, business reporting, and dashboards. Further, to get familiar with BA tools and to get hands-on experience on the abovementioned topics, this course comprises several exercises for which students work with state-of-the-art and practical examples and analytics tools.

10. Contents *(General themes and descriptions, the accurate content may change)*	**Fall Semester – Design Thinking and Creativity** • Introduction • Discovery Phase, including elicitation techniques • Definition Phase • Ideation Phase • Prototyping and testing Phase • Links with sister approaches **Fall Semester – Business Model Innovation** • Intro to business models: How value is created and to whom? • Differentiating Product/service innovation from BMI • Why companies fail - A BMI perspective • Problem analytics • Understanding critical success factors: demand & competition analysis • Value creation, value capture, and value extraction • BM generation processes & tools: BM Canvas, Lean Canvas, Fiddle • Defining a Unique Value Proposition • BMI and entrepreneurial lifecycles • Existing industry BMI vs. entrepreneurial startups • Innovative BM testing with 3 dimensional BMs. What makes a BM innovative, attracts investors, and leads to large firm valuation? • Monetization • Sustainability and impact-driven BMs • BMI and M&A • Mission-driven BMs, non-profits, and NGOs • New BMs and Open Innovation: inbound vs. outbound; pros and cons • BMs as a narrative: storytelling, communicating to different audiences • Presenting innovative BMs: elevator pitch, executive summary, the project plan) **Spring Semester - Managing value chain transformation** • Align digital transformation and business strategy • Digital architectures • Design and manage a digital transformation project • Innovation programs • New technologies, new uses • Digital transformation and data strategy • Impacts on organizational models • Digital Mission Workshop (final exercise including writing personal MCQ + writing group exercise) • Digital disruption and supply chain strategy • Assess supply chain requirements

	- Design the digitally-enabled supply chain
	- Getting value from distributive supply deals using analytical tools
	- Getting value from integrative supply deals using analytical tools
	- Roadmap to supply chain 2030
	- Final case study and presentation of results
	
	Spring Semester –Business Analytics
	
	- Provide an overview of business analytics
	- Introduce and discuss three main processes of business analytics
	  - **Data gathering**, **data storage**, and **data integration**: data warehousing and data integration, relational and multidimensional analytical processing
	  - **Knowledge discovery**: data mining
	  - **Knowledge sharing**: visual analytics, business reporting, and dashboards
	- Discuss current issues and **future trends** in business analytics
	- Get **hands-on experience** on business analytics processes through working with state-of-the-art analytics tools

11. Evaluation	The grading of the module shall be based on: - Mid-term assessments during weeks 1 to 15 according to the decision of the instructors. (The methods and weightings are communicated by the instructor before the evaluations)
12. Remediation/repetition	☒ Compulsory remediation if the module grade is between 3.5 and 3.9 / 6. When subject to a remediation, only the grade of the remedial exam will be taken into account (maximum grade 4.0). A repeated module cannot benefit from a remedial exam. ☐ No remediation
13. Coordinator / main instructor	Alexandre Caboussat
SECOND PART: LOCATION OF THE MODULE IN THE STUDY PLAN	
14. Level	☐ Basic module ☐ Advanced module ☒ Specialized module ☐ Other: ………………….
15. Characteristics	☒ Module is mandatory (which could lead to final dismissal from the program, cf. art.15, al.1, « Statut des étudiant-e-s bachelor »)
16. Type	☒ Main module ☐ Module linked to main module ☐ Optional module ☐ Other: ………………….
17. Time organization	☒ Module over 1 semester ☒ Module over 2 semesters ☒ Spring semester ☒Fall semester ☐ Other