

- Faculté des sciences économiques
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R&D Management (5EN1033)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Bachelor en sciences économiques, orientation comptabilité/finance	Cours: 2 ph	cont. continu	3
Bachelor en sciences économiques, orientation économie politique	Cours: 2 ph	cont. continu	3
Bachelor en sciences économiques, orientation management	Cours: 2 ph	cont. continu	3
Bachelor en sciences économiques, orientation ressources humaines	Cours: 2 ph	cont. continu	3
Bachelor en sciences économiques, orientation systèmes d'information	Cours: 2 ph	cont. continu	3

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

Période d'enseignement:

- Semestre Printemps

Equipe enseignante:

Instructor: Prof. Arsalan Nisar Shah
Office hours: By appointment
Office location: R 165
Email: arsalan.shah@unine.ch

Objectifs:

Understand the concepts of innovation, R&D management and new product development.

- Explore the models of innovation
- R&D function at an organizational level
- Managing the R&D function
- R&D strategies, evaluation of R&D projects
- Acquisition of external knowledge and technology transfer
- Enhance verbal skills through class discussions
- Build up judgemental and interpretation skills

Contenu:

Organizations can no longer rely solely on low cost manufacturing or access to wider markets as sources of superior value creation. So, more and more organizations are engaging in developing innovative products or services to differentiate for growth/profitability and sustainable value creation. The purpose of this course is to expose you to how organisations make product innovation happen. You will learn about how organizations manage product innovation and new product development. The idea is to make you think strategically about innovation of new products and services and how these are brought into the market. This is largely dependent on the R&D function of an organization and how this function is managed. You will learn about R&D management and its link with business strategy and how organizations make use of R&D function to bring new products to the market. This course is deeply rooted in the concept of technology innovation and as a result will draw greater insights from various backgrounds like entrepreneurship, business strategy and innovation management. The course will make use of case studies, exercises, group presentation and lectures.

Forme de l'évaluation:

TP: exercices, group presentation, class participation 30 %
EI: examen intermédiaire écrit 2h (open book) : 30 %
ES: examen écrit de 2h lors du dernier cours du semestre (open book) 40 %

Rattrapage examen écrit de 2 heures

Documentation:

- Tidd, J., Bessant, J. and Pavitt, K.: *Managing Innovation: Integrating technological, market and organizational change*, 3rd edition, John Wiley and Sons, 2005.

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- Dodgson, M. Gann, D. and Salter A. The management of technological innovation: strategy and practice, Oxford University Press, 2008.
- Gladwell, M. 2008. Outliers. New York: Little, Brown and Company

Forme de l'enseignement:

Course modules:

The course can be looked as a combination of three modules:

Module 1: Module 1 will introduce and explore the concept of innovation management. It will cover different models of innovation by placing emphasis on viewing innovation as a management process. We will also explore social, economic and market factors that facilitate innovation. Most of the innovations take place within the organizational context and as a result this module will explore how organisations manage and foster innovation.

Topics covered under module 1:

- Introduction to innovation management
- Managing innovation within organisations
- Managing intellectual property
- Organizational knowledge and strategic alliances and networks

Module 2: Module 2 will follow up from what has been gained from module 1.

The idea here is to provide a complete picture of how innovation takes place within organizations and its link to R&D management. It will detail the main activities performed by R&D units and how these influence the development of new products. We will look at the various challenges faced by R&D managers. Within this module, we will learn about technology transfer and the process by which organizations can acquire technologies from outside.

Topics covered under module 2:

- Introduction to R&D management
- R&D management context
- Classifying R&D management; R&D expenditure; budget
- Effective R&D management
- External R&D; external technology
- Evaluating R&D projects

Module 3: In the final module, we will look at the nature and techniques of new product development and explore the process of developing new products by examining new product management. We will discuss the challenges faced by new product managers and most of readings and cases will deliver on such issues.

Topics covered under module 3:

- New product development and innovation management
- New product development through R&D
- Models of new product development
- Managing new product development process

In the classroom

This course will be a combination of lectures, discussions and assignments. Classroom discussion will be an important part of the course.

During the

lectures, students are encouraged to ask questions and discuss the material. You will need to come to class prepared to discuss the session's case and

readings and to respond to the ideas and comments of others. My role will be more of a facilitator for a dialogue among the class participants. I would

expect your interactions to be well reasoned and informative.

Session details (Module 1/Module 2) – complete session details for module 2 and 3 will updated in due course

Lecture 1 Course introduction and overview

In this lecture, I will provide an overview of the course, objectives and learning outcomes for the course. I will introduce innovation management and highlight the importance of innovation among organizations

Readings Drucker 2002, The discipline of innovation, Harvard Business Review

Case study: Gore-Tex and W. L. Gore Associates

Lecture 2 Managing innovation within organizations

In this lecture, I will talk about managing the innovation process in organizations. I will touch upon service or production operations function for innovation.

Readings : Quinn 1985, Managing innovation: controlled chaos, HBR

Watch: Who killed the electric car?

Lecture 3 Management of research and development

In this lecture, I will introduce how R&D management is dependent on the organizational context by exploring different management techniques

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for effective R&D management. We will explore the link between R&D management and business strategy.

Howells 2008, New directions in R&D: Current and prospective challenges, R&D management , Vol 38, Issue 3, pp 241-52

Case study: Pfizer's Viagra

Optional reading: Von Hippel 2005, Democratizing Innovation, MIT Press