

Syllabus

Finance of Innovation (1 year)

(3 ECTS)

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Author, lecturer (e-mail, web-page)

Yury Dranev, (ydranev@hse.ru, <https://www.hse.ru/org/persons/8514877>)

1. Course Description

The course is delivered to master students of The National Research University Higher School of Economics in one module. The course length is 114 academic hours of which 36 hours are classroom hours for lectures and seminars and 78 hours are devoted to self-study.

a. Pre-requisites

- Basics of finance and management
- Interdisciplinary and systemic thinking

b. Abstract

This course provides a background on how organizations make innovation project management decisions including financing and investing. A general introduction to finance issues in innovation projects is provided, followed by a discussion of specifics of innovation project management for companies and the meaning of expected return and cost of capital. This illustrates management of the financial structure and leverage for strategic development, shows how managers, shareholders and investors resolve possible conflicts of interests based on corporate governance best practices. Also capital budgeting issues in innovation project management are considered. This helps students to understand the principal factors determining companies' incentives for whether to invest or not in a project in the long-term. Approaches towards assessing innovation projects with regard to the financial investment are discussed and sources of finance for innovation projects introduced.

c. Course Language: English.

2. Learning Objectives

The course spans 1 academic module. Students are assessed with a written exam. The teaching is based on selected writings and experiences of the instructor. In addition views from different perspectives on the meaning of finance of innovation provide in-depth learning opportunities for all students.

Lectures are designed to deliver theoretical frameworks and international experiences. The course is accompanied by a seminar where students present projects on innovative financing. Lectures and seminars introduce and develop new approaches to understand and further develop different facets of innovation thinking and to provide participants with ready to use state of the art knowledge as well as academic training.

3. Learning Outcomes

- Finance sources for innovation projects
- Innovation projects assessment and valuation
- Capital cost and opportunity cost
- Instruments and sources of financing innovation
- Understanding of innovation from financial point of view
- Knowing principles of equity and debt financing
- Be familiar with approaches to financing of innovation through venture capital and public support
- Estimating return on investment in innovation projects
- Abilities for financial valuation of innovation projects

4. Course Plan

a. Lectures

Module	Topic	
Basic concepts	Requirements on innovation from financial point of view	<ul style="list-style-type: none"> • The role of innovations in the modern economy • Creating value through technology innovation
	Financial issues of strategic and competitive analysis for innovative project	<ul style="list-style-type: none"> • Stages of innovations. Uncertainties in financial assessment at different stages. • The most promising innovative products and markets for investors.
Financing innovative projects: instruments and sources	Issues of investment in innovation	<ul style="list-style-type: none"> • The investment process: term sheet, commitment letter, due diligence, closing • Active and passive investors: monitoring of portfolio firms • Exit and assessment of investment in innovation • Equity financing and debt financing

	Venture capital and Public support	<ul style="list-style-type: none"> • Sources of venture capital • Advantages of venture capital syndication • Availability of venture capital • Government policies and innovation • Sources of government support • Instruments of government support
Financial assessment	Market forecasting for innovative project	<ul style="list-style-type: none"> • Analysis of the industry trends and forecasts • Estimation of projected relative market share • Adoption curves
	Building a financial model for innovative project	<ul style="list-style-type: none"> • Revenue modelling • Unit economics • Cost structure modelling
	Estimation of return on investment in innovation projects	<ul style="list-style-type: none"> • Estimating the cost of capital • Net present value analysis
	Financial valuation of innovation projects	<ul style="list-style-type: none"> • Comparables analysis • Other approaches to valuation of innovative projects

b. Seminars

The seminar consists of an introductory session which highlights the possible projects on financing innovation. Following the introductory session students will develop a homework project on implementation of innovations which is based on sound financial analysis and available data. The students will be asked to prepare a presentation for each seminar following development of their projects. Finally description of a project should be introduced in a concluding session essay which is devoted to presentations of innovative solutions and financial issues of their implementation. All achievements of the project should be described in a short written essay.

Topics:

- Basic concepts
- Financing innovative projects: instruments and sources
- Financial assessment I
- Financial assessment II

5. Reading List

a. Basic and required

- 1) G. Dosi (1990): Finance, innovation and industrial change. *Journal of Economic Behavior & Organization*, 1990
- 2) D. Cumming (2007): Government policy towards entrepreneurial finance: Innovation investment funds. *Journal of Business Venturing*, 2007
- 3) S. L. Schmukler (2007): Innovative Experiences in Access to Finance: Market-Friendly Roles for the Visible Hand? Policy Research Workign Paper 4326, World Bank 2007

- 4) J. R. Brown, S. M. Fazzari, B.C. Petersen (2009): Financing innovation and growth: Cash flow, external equity, and the 1990s R&D boom. *The Journal of Finance*, 2009
- 5) J. Atanassov (2005): Finance and Innovation The Case of Publicly Traded Firms
<http://hdl.handle.net/2027.42/39169>
- 6) Akhavein, J., Frame, W. S., & White, L. J., (2001) The Diffusion of Financial Innovations: An Examination of the Adoption of Small Business Credit Scoring by Large Banking Organizations. *Journal of Business*, 78(2), 577-596.

b. Optional and recommended:

- 1) Gill, A. Q., Bunker, D., & Seltsikas, P., (2015) Moving Forward: Emerging Themes in Financial Services Technologies' Adoption. *Communications of the Association for Information Systems*, 36, 205-230.
- 2) M. O'Sullivan (2005): Finance and innovation. *The Oxford handbook of innovation*, 2005
- 3) A. Metrick, A. Yasuda(2011): *Venture capital and the finance of innovation*. Wiley 2011
- 4) Z. Bo (2002): *On the new Development of the Theory of Finance Innovation*. Nankai Economic Studies, 2002
- 5) Hanafizadeh, P., Keating, B. W., & Khedmatgozar, H. R., (2014) A systematic review of Internet banking adoption. *Telematics and Informatics*, 31, 492-510.

6. Grading System

Final control (F): written exam (1.20 minutes exam)

Seminar (S): Homework includes preparation of oral presentations at seminars and written essay before final exam.

The overall course grade (10-point scale) is calculated as a sum of

$$G = 0,2 F + 0,8 S$$

The overall course grade G (10-point scale) includes results achieved by students in their exam F , seminar (S); it is rounded up to an integer number of points.

Summary Table: Correspondence of ten-point to five-point system's marks

Ten-point scale [10]
1 – unsatisfactory
2 – very bad
3 – bad
4 – satisfactory
5 – quite satisfactory
6 – good
7 – very good
8 – nearly excellent
9 – excellent
10 – brilliant

7. Course Assignments (S)

Project and written essay.

8. Examination Type

Final control (F) is written exam (80 minutes).

9. Methods of Instruction

Lectures and seminars

10. HSE Library E-resources

Emerald Emerging Markets Case Studies.

URL: https://www.emeraldinsight.com/topic/cs_all?sortBy=Ppub

11. Software Support, including Open-Source Database Software

- Microsoft Windows 7 Professional RUS: internal university network (agreement)
- Microsoft Windows 10: internal university network (agreement)
- Microsoft Windows 8.1 Professional RUS: internal university network (agreement)
- Microsoft Office Professional Plus 2010: internal university network (agreement)

12. Special Equipment

Classrooms for lectures provide proper use and presentations of particular topics, specifically:

- PC with internet access and office software or laptop
- multimedia projector
- screen
- flipchart