

Semmelweis University, Faculty of Medicine

Pharmaceutical Innovation and Business Administration Master of Science

Name of the host institution (and any contributing institution):

Department of Pharmacology and Pharmacotherapy

Name of subject: Pharmaceutical Innovation Life Science Ecosystems – Evolution, Management Needs and Research Skills

in English: Pharmaceutical Innovation Life Science Ecosystems – Evolution, Management Needs and Research Skills

in German: not applicable

Credit value: 5

Semester: 2025/2026 1st Semester

in which the subject is taught according to the curriculum

Hours per semester	Lecture	Course work	Seminar
150		130	20

Hours per week	Lecture	Practical lesson	Seminar
Course blocks tailored to the students' employment obligations in person on 26-27 th September, and online on Fridays and Saturdays in total 6 hours			

Type of course:

compulsory

Academic year:

2025/2026

Language of instruction (for optional and elective subjects):

English

Course code:

(in the case of a new course, to be completed by the Dean's Office, following approval

Course coordinator name:

Péter Ferdinandy
collaborator: András Fehérváry, MBA, MALD, DES (PhD Cand.)

Course coordinator location of work, telephone availability: Department of Pharmacology and Pharmacotherapy, 1089 Budapest, Nagyvárad tér 4. Tel: +36-1-2104416, e-mail: ferdinandy.peter@semmelweis.hu; fehervary.istvan@phd.semmelweis.hu

Course coordinator position: Head of Department, full professor

Course coordinator Date and number of habilitation: June 2 2001., 26/2001 Hab..

Objective of instruction and its place in the curriculum:

The course introduces students to the governance, design, and evolution of pharmaceutical innovation ecosystems. It connects theory, policy, and practical tools for analyzing national and regional biopharma innovation strategies. Students gain interdisciplinary insight into regulatory frameworks, innovation management, research translation, and international benchmarking in life sciences.

Method of instruction (lecture, group work, practical lesson, etc.):

Lecture, case-based learning, policy simulation, group work

Competencies acquired through completion of course:

Understand ecosystem governance frameworks

Analyze benchmarking indices (e.g., GII, UK LSCI, IMD)

Compare innovation ecosystems through real-world case studies

Apply policy tools and strategy models for ecosystem planning

Develop interdisciplinary research and leadership skills

Course outcome (names and codes of related subjects):
None

Prerequisites for course registration and completion: (CODE):
None

In the case of multi-semester courses, position on the possibility of and conditions for concurrent registration:

none

The number of students required to start the course (minimum, maximum), student selection method:

all students admitted to the MSc course

Detailed course syllabus (if the course can be divided into modules, please indicate):

(Theoretical and practical instruction must be broken down into hours (weeks), numbered separately; names of instructors and lecturers must be

**listed, indicating guest lecturers/instructors. It cannot be attached separately!
For guest lecturers, attachment of CV is required in all cases!)**

In-person module: 14 hours

Day 1: Foundations and Evolution of Pharma Innovation Ecosystems

13:00 – Welcome & Orientation

13:30 – Session 1: Defining Innovation Ecosystems

14:00 – Session 2: Theoretical Frameworks (Porter, Mazzucato, Triple Helix)

14:30 – Session 3: Innovation Indices Deep Dive

15:15 – Session 4: Comparative Ecosystem Case Studies

17:00 – Wrap-up and Reflection

Day 2: Strategic Design and Management

09:00 – Session 5: Governance and Policy Levers

10:30 – Session 6: Designing Ecosystems

12:00 – Session 7: Applied Design Workshop

13:00 – Session 8: Management Skills

14:00 – Roundtable: Future Directions

15:00 – Wrap-up & Online Learning Brief

Online Module (Autumn): Translational governance, policy simulation, global value chains (6 hours)

Other courses with overlapping topics (obligatory, optional, or elective courses) in interdisciplinary areas. To minimize overlaps, topics should be coordinated. Code(s) of courses (to be provided):

None

Requirements for attendance, options for making up missed sessions, and method of absence justification:

Mandatory full attendance for the in-person weekend sessions. One justified absence allowed.

Assessment methods during semester (number, topics, and dates of midterms and reports, method of inclusion in the course grade, opportunities for make-up and improvement of marks):

Group project (40%), written reflection on online modules (30%), participation (30%)

(number, topics, and dates of midterms and reports, method of inclusion in the course grade, opportunities for make-up and improvement of marks)

Number and type of individual assignments to be completed, submission deadlines:

1 group project; 1 written report (1,000 words)

Requirements for the successful completion of the course:

Completion of both group and individual assignments; attendance

Type of assessment:

Mid-term group project and written assignment (no exam)

Examination requirements (list of examination topics, subject areas of tests, lists of mandatory parameters, figures, concepts and calculations, practical skills, optional topics for the project assignment recognized as an exam and the criteria for its completion and evaluation)

Assessment based on applied understanding of ecosystem models, policy frameworks, and benchmark analysis

Method and type of grading (Share of theoretical and practical examinations in the overall evaluation. Inclusion of the results in the end-of-term assessment. Possibilities of and conditions for offered grades.): (Share of theoretical and practical examinations in the overall evaluation, Inclusion of the results in the end-of-term assessment, Possibilities of and conditions for offered grades)

Signature of habilitated instructor (course coordinator) announcing the course:

Prof. Dr. Péter Ferdinandy
Head of Department

Signature of the director of the host institution:

Prof. Dr. Péter Ferdinandy
Head of Department

Date of submission:

8th August 2025