



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA
DEPARTMENT OF ECONOMICS

**Laurea Magistralis in Economics and
Econometrics
(Master's in Economics and Econometrics)
LM(EC)²**

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**INFORMATION FOR
FRESHERS**

[www.LM\(EC\)².unibo.it](http://www.LM(EC)^2.unibo.it)

LAUREA MAGISTRALIS IN ECONOMICS AND ECONOMETRICS

The *Laurea Magistralis* in Economics and Econometrics at the University of Bologna

The *Laurea Magistralis* in Economics and Econometrics (LM(EC)²) is a two-year Master's Degree which offers excellent opportunities for students willing to acquire a solid preparation in economics and econometrics, with the aim of entering the labour market or continuing into a Ph.D. Students will be offered extensive and rigorous training in economics, econometrics, mathematics and statistics. After a first year of core courses, in the second year, students choose the preferred learning activities from a list of advanced courses in economics or in econometrics. Students will be guided through the programme under close supervision by senior and junior academics of international reputation, who are full-time members of the Economics Department at the University of Bologna.

All courses will be taught in English. Upon successful completion of the requirements for the LM(EC)², students may be considered for admission to the Ph.D. program in Economics offered by our Department.

The University of Bologna provides a lively and stimulating environment for research in one of the most attractive Italian cities, well known for its high living quality. The department offers weekly seminars in all the main fields, the possibility to interact with a large number of short-term and long-term international visitors and many conferences.

This booklet provides a description of the programme of studies and of the requirements students have to fulfil in their first and second year. Further information about the LM(EC)² can be found at the following link: [www.LM\(EC\)².unibo.it](http://www.LM(EC)^2.unibo.it)

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A. *Organization of Studies*

1. LM(EC)²: Objectives and principles

LM(EC)² addresses motivated students holding an undergraduate degree who intend to acquire a sound and formalized training in economics and econometrics. LM(EC)² aims at providing its students with formal course-based training in the areas of economics and econometrics at the level needed for them to pursue successful academic or professional careers in leading universities or other research-oriented organizations in the public and private sectors. The whole programme is taught in English. Students are expected to attend courses, participate in the general research activities of the Department of Economics (such as workshops, seminars and conferences) and write a dissertation under the guidance of a supervisor.

The first year includes (mainly) mandatory mathematics, econometrics, finance, microeconomics and macroeconomics courses. The second year offers a wide choice of advanced courses in economics or econometrics.

In the second year, students choose at least two courses **in the Advanced Economics group** and at least two **in the Advanced Econometrics group**.

Courses in the **Advanced Economics group** provide a deep understanding of the foundations of advanced micro and macroeconomic theories and their application to a wide range of fields of specialization. The objective is to gain knowledge on specific areas of economic research, such as behavioural economics, development economics, industrial economics, international economics, labor economics, monetary and financial economics, information economics, and public economics.

Courses in the **Advanced Econometrics group** focus on advanced econometric techniques and quantitative methods used in time series, macroeconomics, finance, microeconomics, and for policy design and evaluation at both the micro and macro level. The objective is to give the students a flexible, cutting-edge set of tools for the specification, estimation, and testing of economic/econometric models to solve the modeling issues arising in different contexts, including data-rich environments.

For the remaining 12 CFU necessary to graduate, students can choose additional courses in each of the two groups or a course and a short internship (6CFU) or a long internship (12 CFU).

During the second year, students are assigned supervisors who oversee the preparation of their final dissertations. Supervisors are selected on the basis of students' preferences.

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The entire programme should be completed in two years.

An essential part of the programme consists of independent, but closely supervised and monitored research activity. For this reason, while in the first-year students focus on intensive course work as a foundation for successful research, in the second year students are required to work both on courses and on a final dissertation, to be defended in front of a commission composed by Faculty members. Students may also decide to gain credits from an internship that can be carried out outside or within Unibo (e.g. students may act as Research Assistants of a faculty member of LM(EC)² or of another member of the Department of Economics of the University of Bologna.)

Students are strongly encouraged to regularly attend departmental workshops and seminars during their study. Before the final defense, opportunities to present and discuss research may be offered to students by Faculty members under their supervision.

The activities of LM(EC)² take place from September to July. Unless differently agreed, or when they participate in international mobility programmes, students are required to be residents in Bologna throughout their two years of study. Students' performance is evaluated by exams and other assignments. Questions related to the overall functioning of the LM(EC)² are directed to the Coordinator and the Director. Questions related to individual courses and exams are directed to the corresponding instructors.

The following two sections provide more detailed information about the prerequisites and the structure of the programme for students enrolled in their first year.

2. Prerequisite knowledge

The first-year courses assume that students are familiar with the basic tools of economics, mathematics and statistics at the level of standard undergraduate textbooks, such as:

2.1. Economics

- Blanchard O.J., *Macroeconomics*, 3rd edition, Prentice Hall, Upper Saddle River,
- N.J.Williamson S.D. *Macroeconomics*, 2nd edition, Prentice Hall, Upper Saddle River, N.J.
- Pindyck and Rubinfeld, *Microeconomics*, 6th Edition, Prentice Hall
- Nicholson, *Intermediate Microeconomics and Its Applications*. 9th ed. Stamford, CT: Thomson Learning

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2.2. Mathematics

- Simon C.P. and L. Blume, *Mathematics for Economists*, (1994), Norton, New York.

2.3. Statistics

- Amemiya T., *Introduction to Statistics and Econometrics* (1994), Harvard University Press (pp. 1-250).

2.4. Crash courses in Mathematics and Statistics

All students are highly recommended to attend crash courses in Mathematics and Statistics in September, to gain/refresh fundamental prerequisite knowledge in these subjects.

3. Structure of the academic year and course requirements

The academic year consists of 2 terms of approximately 12 weeks each divided into 2 quarters (called subcycles) of approximately 6 weeks. In each quarter, 5 weeks are devoted to lectures and 1 week to exams. The 1st term starts in the first half of September and ends before Christmas. The 2nd term starts in mid-February and lasts until the end of May. The course structure diagram with the list of courses linked to contents and timetable can be found here <https://corsi.unibo.it/2cycle/lmec/course-structure-diagram>. The typical career of an LMEC student is as follows:

3.1 First Year

In the first year, students have to take five mandatory core courses, called *Integrated Courses (I.C.)* because they are made of two parts (or modules).

- **Quantitative Methods for Economic Analysis** (=Mathematical Economics + Statistics for High Dimensional Data)
- **Microeconomics** (= Microeconomics + Game Theory)
- **Macroeconomics** (= Macroeconomics + either Growth Theory or Consumption and Investment Theory)
- **Finance** (= Financial Products and Markets + Asset Pricing)
- **Econometrics** (= Econometric Methods+ either MicroEconometrics or MacroEconometrics)

Lectures: Students begin their 1st quarter (Q1) in the Autumn term with “Microeconomics” and “Econometric Methods”. In the 2nd quarter (Q2) they take “Mathematical Economics,” either “MicroEconometrics” or “MacroEconometrics,” and “Macroeconomics”. The Spring term begins with the 3rd quarter (Q3). Students have to take: “Game Theory”, either “Growth Theory” or

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“Consumption and Investment Theory”, and “Statistics for High Dimensional Data.” In the 4th and last quarter (Q4) students will take “Financial Products and Markets” and “Asset Pricing”.

	COURSE	HOURS	CFU
CRASH COURSES	LABORATORY OF MATHEMATICAL ECONOMICS	30	3
	PROBABILITY AND STATISTICS	40	3
FIRST SEMESTER	MICROECONOMICS (Q1)	30	6
	ECONOMETRIC METHODS (Q1)	30	6
	MATHEMATICAL ECONOMICS (Q2)	30	6
	MACROECONOMICS (Q2)	30	6
	Either MACROECONOMETRICS or MICROECONOMETRICS (Q2)	30	6
SECOND SEMESTER	GAME THEORY (Q3)	30	6
	STATISTICS FOR HIGH-DIMENSIONAL DATA (Q3)	30	6
	Either GROWTH THEORY or CONSUMPTION AND INVESTMENT THEORY (Q3)	30	6
	FINANCIAL PRODUCTS AND MARKETS (Q4)	30	6
	ASSET PRICING (Q4)	30	6

Exams: There are 3 chances per academic year to pass each exam. The first and second chances are given during the exam period/s that immediately follow the end of the relative course unit, while the third chance is given in September for all LM(EC)² course units.

- The grade of an integrated course is represented by the weighted average of its two composing parts (or modules).
- For each module composing an integrated course, students may decline the grade assigned once per year (each professors will choose how to manage the communication about accepting/declining grades).
- Students must pass (grade $\geq 18/30$) **both modules** of an integrated course by the end of the academic year (September). If they don't, they must retake both modules the following year.
- Academic calendar: [https://corsi.unibo.it/2cycle/lm\(ec\)^2/academic-calendar](https://corsi.unibo.it/2cycle/lm(ec)^2/academic-calendar)

3.2 Second Year

During the second year, students will attend the mandatory courses: “Law, Economics and Markets”. They will also choose at least two courses **in the Advanced Economics group** and at least two **in the Advanced Econometrics group**.

See the table below for a complete list.

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To complete their course requirements, students will have to select other 12 CFU (CFU are the Italian Academic Credits: 1 CFU = 1 ECTS), taking them during the first or second year, or both. Students may choose between two additional courses, or one and a short internship, or a long internship. For information on internships see [https://corsi.unibo.it/2cycle/lm\(ec\)^2/curricular-internship](https://corsi.unibo.it/2cycle/lm(ec)^2/curricular-internship) or contact the LM(EC)² Internships tutors Prof. Francesca Barigozzi (for internships external to Unibo, 12 CFU) and Prof. Enrico Cantoni (for research assistantships at the Department of Economics, 6 CFU).

The additional courses can be selected among the advanced Economics and Econometrics group lists. Students may also choose other courses offered by the University of Bologna on condition that they are taught in English and are at Master's Degree level; however, in this case a special approval by the course Director is needed. For a complete and updated list of electives and optionals please check the course structure diagram at [https://corsi.unibo.it/2cycle/lm\(ec\)^2/course-structure-diagram](https://corsi.unibo.it/2cycle/lm(ec)^2/course-structure-diagram).

Finally, students have to earn 3 CFU by either attending a foreign language course (except English) offered by the University of Bologna, or (preferably) by participating to seminars or workshops, such as those organised by at the Department of Economics (<http://www.dse.unibo.it/it/eventi>), or other seminars organized by LM(EC)² and advertised on the LM(EC)²'s webpage [www.lm\(ec\)^2.unibo.it](http://www.lm(ec)^2.unibo.it).

MANDATORY COURSE	LAW ECONOMICS AND MARKETS		
2 COURSES TO BE CHOSEN FROM EACH OF THE TWO FOLLOWING LISTS			
ADVANCED ECONOMICS GROUP		ADVANCED ECONOMETRICS GROUP	
GROWTH THEORY		MICROECONOMETRICS	
CONSUMPTION and INVESTMENT THEORY		MACROECONOMETRICS	
INFORMATION ECONOMICS		MICROECONOMETRICS and SIMULATION METHODS	
PUBLIC ECONOMICS		ECONOMETRICS OF PANEL DATA	
BEHAVIORAL ECONOMICS		FINANTIAL TIME SERIES ECONOMETRICS	
DEVELOPMENT ECONOMICS		CAUSAL INFERENCE and PROGRAM EVALUATION	
INDUSTRIAL ORGANIZATION: THEORY AND APPLICATIONS		MACHINE LEARNING for ECONOMISTS	
INTERNATIONAL TRADE: THEORY AND APPLICATIONS		STRUCTURAL MACROECONOMETRICS	
POLITICAL ECONOMICS		RESEARCH METHODS IN APPLIED ECONOMICS	
LONG-RUN DEVELOPMENT: THEORY AND EMPIRICS		BAYESIAN ECONOMETRICS	

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3.3 Supervisors and tutors

During their second year, students choose a supervisor to oversee the preparation of their final dissertation. Supervisors are chosen on the basis of a student's preference and can be selected among the LM(EC)² faculty, or the members of the Department of Economics.

There will also be at least one tutor (or Teaching Assistant) for each part of the integrated courses, with extensive office hours. Students are invited to meet tutors/TAs in order to receive extra-support.

3.4 Final dissertation

The Q3 and Q4 (Spring Term) are mostly dedicated to working on the dissertation. This should consist in an extended paper containing either a critical survey of the relevant literature or an original contribution to the literature. For students willing to continue their studies after LM(EC)², the dissertation could provide the basis of their future Ph.D. dissertation. Further information on drafting a final dissertation is available on the LM(EC)² webpage [https://corsi.unibo.it/2cycle/lm\(ec\)^2/dissertation-and-final-examination](https://corsi.unibo.it/2cycle/lm(ec)^2/dissertation-and-final-examination). The final grade for LMEC will be based on the grade of each exam and on the points attributed to the final dissertation.

4. Performance assessment

The key features of LM(EC)² performance assessment are described below.

- The performance assessment may consist of a written or an oral test and it may include midterm assessments and homework, class presentations and essays.
- Exams are graded with a number between 1 and 30 plus, in case of an outstanding performance, *Laude*; 18 is the passing grade. More specifically, exams are graded as follows:
 - <18: fail
 - 18-23: sufficient
 - 24-27: good
 - 28-30: very good
 - 30 Lode: excellent
- There is no order requirement in passing exams but students are strongly advised to take courses and exams in the suggested sequence (see Section 3). Second year teachers will expect students to have completed all first-year exams.

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- Students can decline an exam grade once per year, for each module composing the integrated course (1st year exams) or for each course (2nd year exams); each professor will choose how to manage the communication about accepting/declining grades.
- If a student fails an exam or refuses its grade, he/she has the opportunity to retake it in a following date.

B. Description of courses and workshops

An updated description of current courses is available on the LM(EC)² webpage:

[https://corsi.unibo.it/2cycle/lm\(ec\)^2/course-structure-diagram](https://corsi.unibo.it/2cycle/lm(ec)^2/course-structure-diagram).

The list of workshops and seminar is available at: <http://www.dse.unibo.it>

C. Faculty

The web pages of current faculty members are available on the LM(EC)² webpage:

[https://corsi.unibo.it/2cycle/lm\(ec\)^2/faculty](https://corsi.unibo.it/2cycle/lm(ec)^2/faculty)

D. International mobility

Studying abroad for an exchange period enriches a student's experience and extends their horizons. Therefore, LM(EC)² promotes and supports students' mobility through several exchange programmes abroad: [https://corsi.unibo.it/2cycle/lm\(ec\)^2/opportunities](https://corsi.unibo.it/2cycle/lm(ec)^2/opportunities).

- **Erasmus+ and Overseas international mobility programmes:** the University of Bologna offers extensive opportunities to its students to spend a period of study abroad in Europe (Erasmus +) and outside Europe (Overseas). Within the Erasmus+ framework, LM(EC)² has set up dedicated agreements with selected partner universities, which offer activities that are particularly suitable for LM(EC)² students. Here are a few of them: Ludwig-Maximilians-University Munich; Ecole normale supérieure de Paris-Saclay; École Centrale Marseille; University of Oslo, Department of Economics; University of Lausanne, Faculty of Business and

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Economics (HEC Lausanne). For further information, contact the LMEC Erasmus coordinator Prof. Paolo Manasse.

- **BESAP Programme:** LM(EC)² has been selected by the University of California - Berkeley as one of the few institutions worldwide to participate in the BESAP. This programme offers LM(EC)² students the opportunity to spend a semester (spring term) at the Department of Economics of the University of California - Berkeley during their second year. For further information, contact the Programme Director Francesca Barigozzi.
- **Double Degree with MAIA – SAIS Europe - Johns Hopkins University:** after completing the 60 credits required for the first year, LM(EC)² students can be admitted to the second year of the Master's in International Affairs (MAIA) at SAIS, Johns Hopkins University, Bologna Center. LM(EC)² students interested in this opportunity will follow the standard SAIS application procedure for admission. Upon completion of MAIA and the award of the relevant Master's degree, provided that specific course requirements as defined by the Double Degree agreement are satisfied, students may obtain, by submitting the relevant academic documentation, the *Laurea Magistrale* in Economics and Econometrics. For further information, contact the Programme Coordinator, Michela Sandias (michela.sandias@unibo.it).