

Inter-faculty programme

Economia

Medicina e chirurgia "A. Gemelli"

2 years Master Degree Programme in

Management of services

Profile **Healthcare Management (HeMa)**



Student Guide



Rome
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**UNIVERSITÀ
CATTOLICA**
del Sacro Cuore

UNIVERSITÀ CATTOLICA DEL SACRO CUORE
00168 ROMA– Largo Francesco Vito 1

**GUIDE OF
MASTER DEGREE PROGRAMME
IN
MANAGEMENT OF SERVICES
Profile HEALTHCARE MANAGEMENT (HeMa)**

Study plans

Academic Year 2022/2023

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FACULTY'S INTRODUCTION

The Faculty and its development

The Faculty of Economics, established in 1947, has earned a place among the **best Italian and European faculties** thanks to the rigorousness of its research, the quality and comprehensive nature of its programmes and the strong relationship between research and teaching, which allows its highly-qualified teaching staff to teach students the fruit of that research, thereby ensuring high levels of knowledge, learning, and skills.

The Faculty's approach to economics, both in terms of teaching and research, encourages researchers to begin with the particular and proceed to the general step by step: from the individual - their identity and individuality - to family units, regions, national contexts and the broader international perspective. Reasoning about economics is essential to make sense of the variety of ways in which people everywhere select, act for, aim to and achieve a goal.

The Faculty is committed to ensuring that students are educated to become individuals distinguished by their knowledge and ready to carry out key tasks in society and to demonstrate their commitment to the world.

The Faculty's **formative project** is primarily characterised by its firm anchoring in a system of values, proper to our university's Catholic connotation, that sets the objective of economic action in the integral development of human beings and communities; a system of values that, in the words of one of our lecturers, Professor Francesco Vito, considers economics to be "at the service of man". As a community, both for life and research, our university asks students to engage in intense and constant participation in academic life, making the best use of the many opportunities for growth it offers on a daily basis.

The approach of the Faculty of Economics has always been **student centred**, focusing on students' commitment and responsibility: focusing on their cultural preparation - primarily - and on their systemic, functional and specialised knowledge; providing the real possibility of cultivating a rich university life; enhancing the quality of the time dedicated to teaching, learning and studying by focusing on attendance and active-learning models; the programmability of time and spaces; the continuous certification of the preparation for the level of learning achieved; the tangible and close links to the world of work and the professions through our apprenticeships and qualified internships; the work to improve language skills, through raising the undergraduate and postgraduate level of English language knowledge; the constant openness to internationalisation, with **Bachelor's degree** programmes in **Economics and Management** (three-year course of study), the **Master of Science in Management (Master's degree)**, in **Data Analytics for Business** (interfaculty

Master's degree with Mathematical, physical and natural sciences) and in ***Innovation and Technology Management*** (interfaculty Master's degree with Mathematical, Physical and Natural Sciences), the ***Economics*** profile of the Master's in Economics; the ***Methods and Topics in Arts Management - MATAM*** profile of the Master's in the Economics and Management of Cultural Heritage and Entertainment; the ***Healthcare Management*** profile of the Master's in Service Management of services - Rome campus; and the availability of campuses internationally renowned for their excellence as interfaculty exchange partners, in Europe, the American continent, China, India and Africa.

The design of the study plans aims to balance a **strong interdisciplinary and multidisciplinary foundation** with a course structure that reflects the specialised needs of reality.

The three-year formative cycle is based on a set of courses common to all degrees, with two exceptions, as shown in the following pages. The reasons for this choice relate to the need to anchor education in a group of basic disciplines in the economic, managerial, legal, quantitative and humanistic fields, but also to allow young people to make a better-informed choice of their degree programme.

In particular, **in the academic year 2022/2023**, the formative project of the Faculty of Economics is characterised as follows: courses are more clearly divided into curricula; collaboration with the world of work and professions in designing courses and in implementing parts of them; degrees are structured to incorporate the effective and significant presence of research activities consistent with professional profiles and specific skills; a balanced distribution of students' learning commitments, proportionate to the staff and skills actually available; introduction of homogeneous and compact organisational forms of teaching; implementation of advanced and more interactive teaching methods.

The Faculty of Economics also stands out for its focus on **building on the already ample opportunities for accessing** higher education which is nowadays a key resource. Indeed, ever since the beginning of the post-war period, the Faculty has offered courses in the late afternoon and evening, in addition to those held in the morning and afternoon. This was to allow people to access university who, for various work-related reasons, could not attend during the day.

An ideal innovation for working students in the evening courses is the launch of the Master's in **Management and Business Consultancy**, which has also been available at the Rome campus since the academic year 2019/2020.

The Master's degree in **Management and Business Consultancy**, based on the experience of the late-afternoon programme in "**Markets and Business Strategies**", shares part of the basic formative path with the other Master's programmes in business economics, whilst also offering an original blended formula.

Thanks to close collaboration with the Centre for Innovation and Development of Educational and Technological Activities of the University (Ilab) and with the Research Centre on Media, Information and Technology Education (Cremit), 50% of the degree programme is delivered in person, during the weekends (no longer in the evening), with the other 50% delivered online using the latest e-learning technologies.

Classroom learning is still present, therefore, and offers more than frontal lectures: it is also an opportunity for discussion between students and revision of work completed online.

In addition to providing moments for self-learning through the study and consultation of teaching materials, the online part of the programme requires students to engage in a series of distance-learning activities on the university Blackboard platform. These include consulting "video lectures" or supplementary materials; creating a database of contents; conducting practical tasks and/or case studies, including in groups; evaluating the topics covered; and, finally, coaching/tutoring activities, thanks to constant contact and discussion with the course lecturer.

Since the academic year 2019/2020, the blended model offering has included four new courses for the study plans of the third year of the late-afternoon/evening degree in Economics and Business Management.

Finally, we wish to highlight the ways in which the Faculty emphasises both **foreign language knowledge** and **computer tools** in its formative design by organising courses that use the **most advanced teaching and learning technologies**. With regard to language skills, constant collaboration with the Faculty of Linguistic Sciences and the exchange agreements in place make it possible to learn the main European languages and those of rapidly developing countries, and to follow courses at the best European and international universities, so that students can integrate their learning in specific disciplinary areas with the language and culture of different countries.

Teaching staff

Resident Faculty

Prof. GIUSEPPE ARBIA: Statistics and big data

Prof. STEFANIA BRUNO (School of Medicine and Surgery): Epidemiology

Prof. AMERICO CICHETTI: Human Resource management in complex organizations

Prof. ALFREDO D'ANGELO: Management and innovation in health and social services

Prof. ANTONIO DE BELVIS: Healthcare and insurance in comparative systems

Prof. MARIA CHIARA MALAGUTI: International law and health

Prof. CARLO PROVENZANO (School of Medicine and Surgery): Ethics, medicine and public health (Philosophical history of medicine)

Prof. PIETRO REFOLO (School of Medicine and Surgery): Ethics, medicine and public health (Medical anthropology)

Prof. MARCO RIZZO: Planning and control in healthcare

Prof. DARIO SACCHINI (School of Medicine and Surgery): Ethics, medicine and public health (Bioethics)

Prof. LUCA SALMASI, Pharmacoconomics and health technology assessment

Prof. ELISA RAOLI: Financial and management accounting in health care

Prof. GILBERTO TURATI (Academic Course Director), Health economics

Prof. STEFANO VILLA, Quality and operations management

Adjunct Resident Faculty

Prof. ARIANNA ARIENZO (VoiceMed, Luxembourg): Management and innovation in health and social services

Prof. ANDREA CAMBIERI (Gemelli Hospital, Rome): Quality and operations management

Visiting Faculty

Management

Prof. FEDERICA ANGELI (York Management School, University of York, UK)

Prof. GILLIE GABAY (College of Management Academic Studies, Israel)

Prof. PAUL GEMMEL (Ghent University, Belgium)

Prof. MAGDALENE ROSENMOELLER (IESE Business School, University of Navarra, Spain)

Prof. ROSALBA SCHINO (Boston University, USA)

Economics

Prof. JOAN COSTA-I-FONT (London School of Economics and Political Science, UK)

Prof. FRANCESCO MOSCONE (Brunel University London, UK)

Prof. ELENA PIZZO (University College London, UK)

Quantitative methods

Prof. XIAODONG LIU (University of Colorado, Boulder, USA)

Prof. NUNO MIGUEL DE SOUSA LUNET (University of Porto, Portugal)

Prof. DANIEL ZELTERMAN (Yale School of public health, USA)

Law

Prof. EVA VILLARREAL PASCUAL (Inter-American Commission of Women - Organization of American States, USA)

STUDY PLANS

MASTER'S DEGREE

Management of services (class LM-77)

Coordinator: Prof. Gilberto Turati

Profile in Healthcare management (HeMa)

The Healthcare Management (HeMa) programme, a specific curriculum within the 2-year Laurea Magistrale in Management dei Servizi is designed for students interested in pursuing a career in the healthcare sector, in both public and private organisations. The curriculum is structured to achieve a good balance between economics, management and statistics, the three core-areas of study. An important feature of the HEMA programme is that all courses are shared between a resident faculty member and a visiting professor from abroad. This will give students the opportunity to learn in a truly international, multidisciplinary and dynamic environment. The programme is characterised by an extensive use of case studies as a way to introduce students to a wide range of practical management issues in healthcare organisations. In addition, HEMA students will be part of a prestigious University that – in addition to a strong reputation in research and education – holds a strong set of values that considers the integrated and balanced development of each community and of each citizen at the center of the healthcare system.

Main Learning Objectives

Students enrolled in the HEMA programme will acquire knowledge about:

- how to manage quality and operations, human resources and technological innovation in healthcare organisations;
- how to use accounting information to take economic decisions;
- how to interpret the evolution of healthcare spending and the functioning of healthcare markets;
- how to use the most advanced methodologies in Health Technology Assessment;
- how to use cutting-edge statistical and econometric tools for analysing economic and epidemiological data.

Students will apply this knowledge to discuss practical cases during their classes and to participate actively to the workshops and seminars that will be organised throughout the year.

Teaching calendar

Class schedules and exams are available to the web page <https://roma.unicatt.it/polo-studenti-e-didattica-programmi-dei-corsi-e-orari-delle-lezioni/RM/corsi-integrati?anno=2022&tipo=CDL&codCdl=2G1R&codFacolta=75065>

Admission to the master's degree courses

The curricular requirements and qualifications needed to access the master's programmes are defined by the Admission regulations available online on the individual programme pages (<https://courses.unicatt.eu/cdl-admissions-and-enrolment-guidelines-and-admission-criteria-137845>); students can check online whether they have the necessary curriculum requirements to enrol by accessing the course enrolment portal and filling in the data requested.

Registration/pre-enrolment on the master's courses takes place from June onwards, with deadlines as per the admission regulations.

STUDY PLANS

Theology courses: the curriculum of the two-year master's degree will be supplemented with a 30-hour semester-long course, made up of seminars and/or single-subject lectures, the topics of which will depend on decisions made by the Theology teaching board (see also the chapter "*Theology Courses*" on page 63 of this Guide).

First year

FALL SEMESTER	CFU/ECTS
- International law and health	8
- Management and innovation in health and social services	8
- Quality and operation management	8
- Statistics and big data	8
SPRING SEMESTER	
- Epidemiology	8
- Financial and management accounting in health care	8
- Health economics	8
- Human resources management in complex organizations	8

Second year

FALL SEMESTER	CFU/ECTS
- Pharmaeconomics and health technology assessment	8
- Healthcare and insurance in comparative systems	8
- Electives ¹	8
SPRING SEMESTER	
- Planning and control in healthcare	8
- Internship <i>or</i> Electives ¹	8
- Final dissertation	16

¹ Electives

Health econometrics and program evaluation, Ethics medicine and public health (the course is borrowed from the Degree in Medicine and surgery; students are requested to check the teaching calendar).

Besides the lists reported above, students can propose an elective course among any of the other courses taught in English. The submitted proposal must be in line with the aim of the program and must be approved by the program coordinator.

Career opportunities

The programme offers knowledge, skills and competencies particularly valuable to pursuing careers in organisations such as:

- Healthcare providers like hospitals, nursing homes and local health authorities
- Companies supplying medical equipment and devices, pharmaceuticals and biotechnologies
- Governmental agencies in charge of regulating the healthcare system
- Insurance companies
- Consulting companies

Important things to know

High social and economic impact. Healthcare is an increasingly important sector in world economies, absorbing growing shares of GDP. It influences the quality of life of all citizens. In addition, it is characterized by a fast growing technological innovation.

Growing career opportunities. The healthcare sector is changing at a rapid pace. Understanding and anticipating future challenges will be key to guarantee sustainability. This requires strong management competencies and skills.

Leading institution. Università Cattolica del Sacro Cuore has invested extensively in the area of healthcare management in the past fifteen years. The Post-Graduate School of Health Economics and Management (ALTEMS)

and specific research centers, like the Center for Healthcare Management (CERISMAS), are active in academic research, consultancy, and executive education.

On-campus teaching hospital. The Healthcare Management programme benefits from the partnership between the School of Economics and the School of Medicine and Surgery, as well as the close relationship with the Policlinico ‘Agostino Gemelli’, one of the largest hospitals in Italy. This on-campus teaching hospital is a place where students can experience in practice what they have discussed during their classes.

Internship

1. *Curricular training*

The practical traineeship experience is an extraordinary opportunity to complete one's education within a working context, where professional contents, interpersonal relations and organisational aspects are combined, compared and integrated. From the point of view of content, the stay in the company as a trainee is an opportunity for professional and personal growth that allows students to complete and improve their curriculum, insofar as the traineeship is experienced as a complementary – not alternative – moment to the learning process in the classroom and individual study.

2. *Types of curricular training*

Curricular traineeships are of two types:

- Curricular traineeship with credits (ECTS)

*Entry requirements*¹: a number of credits ≥ 62 (not necessarily related to the first year of the degree programme) and an average $\geq 26/30$

Students who have met the necessary requirements may choose the curricular traineeship with credits as an alternative to an optional second-year exam.

The traineeship is worth

8 CFU, with grade, in the *Healthcare Management* and *Management for the Enterprise* profiles;

9 CFU, without grade, for the *Professional and Business Consulting* profile².

The minimum duration of the traineeship with credits is 220 hours, on average two to three months full time or five to six months part time.

The activities covered by the traineeship with ECTS **cannot** be used to write the dissertation.

- Curricular zero ECTS traineeships

Curricular zero ECTS traineeships can be undertaken by students who have not yet met the requirements for credit, or who have already taken their optional examinations, or who wish to use the traineeship for their dissertation.

3. *The traineeship supervisor*

The university traineeship supervisor accompanies the student throughout the entire traineeship process, guiding the activities of identifying host sites, selecting proposals, evaluating activities carried out, assigning credits, etc.

For all administrative activities the reference is the Internships & Placements office.

4. *How to apply for a traineeship*

Students interested in undertaking any kind of curricular traineeship must inform their supervisor by completing and submitting the “traineeship request form” and the required documents (including their CV in electronic format) at least two months before the start of the traineeship.

Subsequently, the student, with the support of the supervisor, will have to take steps to identify a host location, as described in point 5.

5. *Identifying the location of the traineeship*

The conduct of the traineeship and the identification of the host location **ALWAYS** require an active role on the part of the student. Traineeships may be:

- **proposed by the University** through the <http://step.unicatt.it> platform, or indicated to students by the traineeship supervisor by means of an announcement on the Blackboard platform or by email. The student must **apply independently** as indicated in the traineeship advertisements.

If the company asks the supervisor for profiles with particular characteristics or within a tight deadline, the supervisor will apply directly on behalf of the student, sending the company the CVs of the candidates who meet the company’s requirements.

Information on traineeship proposals **will be sent to the student via institutional email**; students should therefore regularly check their @icatt.it email account.

The internship, by its very nature, relies on a direct **company-student** relationship; the University offers “opportunities” to students: the opportunity is first of all an interview and, therefore, only in case of a positive outcome of the interview, the possibility of the traineeship opens up.

A student who refuses (or fails) 3 interview proposals or, in the event of a positive selection, refuses (without good and serious reasons) the traineeship proposed by the University, will not receive any further proposals from the University.

- **proposed by the student** on the basis of personal contacts with the company. In this case, the supervisor must verify, by contacting the proposed company, the validity of the training project offered and, in the case of traineeships with credits, the possibility of credit recognition. In any case, the traineeship takes place in companies that have an agreement with the University: therefore, if the proposed company does not yet have an agreement, the student must ask the company to enter into an agreement through the STEP portal as a necessary condition for the traineeship to take place.

If there is any doubt about the possible recognition of credits, the student must seek advice from the supervisor before starting the traineeship.

They will NOT be recognised for credit purposes:

- those activities carried out in close contact with persons related to the candidate by any degree;
- traineeship activities that have already produced training credits for the purposes of obtaining an Undergraduate degree or a Specializing Master's degree;
- traineeship activities already started or completed.

6. *Activation of curricular traineeships*

Curricular traineeships, with or without ECTS, should always be activated on the portal <http://step.unicatt.it>

The procedure, usually initiated by the host company, involves filling in the Training Project online, which is the formal document relating to the traineeship activity. The Training Project must be approved, also online, by three subjects: host company, University (in the figure of the supervisor) and student.

For the procedure, consult the website of the relevant degree programme.

7. *Performance and certification of hours*

In carrying out the traineeship, the student must comply with the commitments made at the selection stage with the host company and adhere to their training project.

The student is required to update the supervisor on the progress of the traineeship and to contact the supervisor if any adjustments to the activity should be made. The student is also required to fill in a log of the hours spent in the company (downloadable from the materials available online).

In the event of proven non-compliance by the student, the traineeship supervisor may request that the traineeship activity be stopped and that the training credits be cancelled.

8. *Evaluation of the traineeship by the company*

From the date of the end of the traineeship, the host company will be asked (by communication from the Internships & Placements office) to complete an online form³ at <http://step.unicatt.it>.

9. *Recognition of credits (for curricular traineeships with ECTS)*

Credits are always recognised by the traineeship supervisor.

At the end of the traineeship period, the student must inform the supervisor of the conclusion of their training project.

In order to obtain credit recognition, the student must provide the university supervisor with 3 documents (preferably all together)

- the “Hours Log”, which must certify all the hours of presence in the company equal to or greater than 220, signed and stamped by the company in original;

- the “Final report on the curricular traineeship activity”, which must contain information on the activity carried out and on the learning that has taken place in terms of content; the final report is a separate product that cannot substitute the thesis;
- the ‘Traineeship’ statute for recording credits, which can be obtained by registering for the exam in which the traineeship is completed.

Incomplete documentation submitted may prevent recognition of the curricular traineeship and the awarding of credits.

The supervisor, having viewed and assessed the documents handed in in good time, and having also collected the *evaluation from the host company* (carried out as in point 8), proceeds to record the credits and award the grade where applicable. The mark awarded by the university supervisor is final; if the student refuses the mark awarded to him/her, he/she must obtain the necessary credits by an alternative means (another traineeship or optional exam). Similarly, if credits are not awarded due to the student’s non-compliance or interruption of the traineeship, the student must choose an alternative way of obtaining the credits. As a general rule, the status report is sent to the Teaching Secretariat at the end of the exam roll and in time for registration for the degree sessions. Any requests for urgent assignment of ECTS must be communicated promptly by the student to the traineeship supervisor.

10. *Interruption of curricular training*

A student who needs to interrupt the traineeship must immediately inform the host company and the traineeship supervisor, specifying the reasons for the interruption. The company, in turn, must notify the interruption through the STEP portal.

An early interruption that does not allow the minimum number of hours required for the awarding of credits will not entitle the student to be awarded ECTS relating to the traineeship. An early interruption may also affect the mark awarded for the traineeship.

The traineeship may also be interrupted in the event of proven non-compliance on the part of the student, in which case the supervisor does not proceed to award course credits.

In the event of early termination of the traineeship, non-compliance by the student or non-recognition of credits, the student must choose another course to complete to be included in their study plan with a total number of hours equivalent to the traineeship.

11. *The extension of curricular training*

Curricular traineeships may be extended as long as the total duration of the traineeship does not exceed six months and in any case does not extend beyond the time the student obtains his/her degree. If the host organisation wishes to extend the student’s experience beyond six months, it must set up a different type of traineeship, which may be “zero ECTS” (also for thesis).

12. Internships abroad

The University encourages students to carry out their traineeship or internships abroad. There are three types of internships abroad:

- **internships offered by foreign companies** and available at <http://step.unicatt.it>;
- **internships proposed by the student**;
- **internships offered** within the framework of the agreements activated by **the International Relations office** and present on the *Wea International* portal: <http://ucscinternational.unicatt.it/ucsc-international-programmi-ucsc-network-internships-abroad>

The procedures for activating the internship, for recognising the activity carried out and the training credits are the same as those set out in point 2 et seq.

In the case of type C internships, confirmation of acceptance of the student's application is formalised by a *confirmation letter* from *Wea International*.

NOTES

¹ The prerequisites for a curricular traineeship must be met before the start of the traineeship.

² The rules contained in the Agreement with the Order of Labour Consultants and Certified Public Accountants and Bookkeepers of Rome also apply to the Professional and Business Consulting profile.

³ The company can access the platform using the same credentials provided during registration and used to start the internship. In the “internships and placements” box, the company contact person must click on the “consult internship history” button, select the name of the intern and click on “evaluate project”. The **company can fill in the questionnaire from 5 days before the end of the internship to 30 days after the end of the internship**. Only after a positive assessment by the company will the supervisor be able to recognise the relative training credits and award the grade.

Final dissertation

This section contains general information on the final examination. Operational indications and precise deadlines will be made known to students through official channels, faculty notice boards, Blackboard, *iCatt*, as well as on the Faculty's web page at the following address: <https://studenticattolica.unicatt.it/studenti-corsi-e-carriera-laurea-e-prova-finale-corsi-magistrali-specialistica-quadriennale-economia>

The final examination for the Graduate degree programme consists of the writing and discussion of a written dissertation on a topic previously agreed upon with the professor.

The final Graduate degree examination is agreed upon by the student with a lecturer of the degree programme (thesis supervisor), who assumes responsibility for guidance during the course of this educational activity.

The final examination consists of the presentation and discussion of a written dissertation (thesis). The discussion of the thesis takes place in front of an appointed committee comprising the supervisor and a co-supervisor.

An original and progressive contribution

The originality and autonomy of the dissertation required for Graduate degree programmes means that the quality of the dissertation work must be verified on the basis of two fundamental profiles:

- an ability to independently develop an advanced and sufficiently articulate research topic in the formulation of research questions;
- a written research work that shows a) correct use of sources, data and methodologies; b) the student's ability to develop lines of analysis and autonomous judgment based on the sources used; c) a good command of the results obtained in the literature on the subject.

Theses that are merely descriptive and reduce themselves to repeating what has been published on certain topics, and therefore lack original features, are not consistent with the Graduate degree programme. The thesis is discussed before an appointed committee, which includes the supervisor and a specialized co-supervisor, who must be able to emphasize the original features of the candidate's work.

The final dissertation of the Graduate degree programme is assigned **18 ECTS**, and it is therefore crucial and a matter of priority that the supervisor defines criteria that are explicitly selective and rigorously applied from the first stage of assessment of dissertation proposals, which are consistent and well aligned with the profile outlined here. For students on the Professional Services profile (in agreement with the Order of Professional Accountants and Bookkeepers) who have completed their professional internship (9 ECTS), the final exam of the Graduate degree programme is assigned **9 ECTS**.

Three different types of theses

The conditions mentioned above may give rise in practice to three different types of research:

- Theoretical thesis: it is characterised by an appropriate use of sources and methodological tools, both from the scientific literature and from publications. The candidate's contribution is mainly realised in an adequate capacity of knowledge selection, of selective recourse to sources, and in grasping and representing open problems and critical issues related to the state of knowledge on the subject.
- Empirical or applied thesis: the knowledge or empirical evidence that the thesis work has initially gathered is then synthesised and reworked and then suitably used for an autonomous and specific activity of analysis in the field. In this type of thesis, particular attention is paid to the adequacy and methodological rigour of the survey and analysis techniques used and then to the student's ability to develop independent interpretations of the theoretical and applied problems encountered in the analysis.
- Thesis that is partly the product of an internship or traineeship, which the student may undertake specifically for the purpose of collecting material for the "Thesis" (so-called Curricular Thesis Internship), which does not, however, offer training credits. In this case, the following conditions must be met:
 - a. that the internship is aimed at a specific activity with a professional content;
 - b. that the internship activities on the one hand and the thesis on the other are clearly distinguishable, consistent with the different purposes they are intended to serve.

Graduation Sessions

Information regarding deadlines for the graduation session of a.y. 2022/2023 will be made available to the students through the webpage <https://studenticattolica.unicatt.it/studenti-corsi-e-carriera-laurea-e-prova-finale-corsi-magistrali-specialistica-quadriennale-economia> and also through *iCatt* page.

Presentation of the study plan and choice of electives

Students enrolled in the first year must carry out:

- presentation of the study plan;
- the choice of electives.

The procedures and deadlines for submission will be indicated in specific notices published through the official channels (online notice boards, *iCatt* website, etc.).

Selection and caveats

The choice of study plan and electives is compulsory.

Students who, for particular reasons, wish to choose examinations other than those proposed must request authorisation from the Degree Course Coordinator. If a course does not reach the minimum number of students, it may be deactivated. In this case, a notice will be sent to the students concerned with instructions on how to change their choice.

Students may choose to do the internship/traineeship instead of an elective in the second year only if they meet the following requirements: a number of credits ≥ 62 (not necessarily relating to the first year of the degree programme) and an average $\geq 26/30$.

If the student is not admitted to the internship/traineeship due to lack of requirements, he/she may choose another elective from among those available, without having to pay a late fee, in accordance with the procedures and times indicated by the Student Services Centre.

Alphabetical list of the courses on the master's degree with the relative subject sector code

The *subject sectors* were created in response to the need for clarification and simplification, leading to (with numerous legislative interventions) the grouping of all the subjects taught in Italian universities into sectors, and the attribution of a code and title to each. The titles derive from the most representative subject in the sector (e.g. *Italian Literature, History of Law*), with all other similar subjects and courses grouped under the same category.

The Ministerial Decree of 4 October 2000, also implemented with a view to reform, provided for the complete revision of the way in which disciplines are organised, grouping them into 14 broad areas, which are then subdivided into 370 individual sectors, each with a new alphanumeric code and title. The alphabetical code refers to the subject area, the following number indicates the sector's ranking within this area.

Degree courses are structured with reference to the subject sectors. Therefore, knowledge of the subject sector that programmes relate to can be useful to students who wish to check whether credits from a particular programme will be valid in another, for example.

Management of Services

Advanced medicine for managers	MED/42
Epidemiology	MED/42
Ethics medicine and public health ¹	MED/42
Financial and management accounting in health care	SECS-P/07
Health demography	SECS-S/04
Health econometrics and program evaluation	SECS-P/05
Health economics	SECS-P/03
Healthcare and insurance in comparative systems	MED/42
Human resources management in complex organizations	SECS-P/10
International law and health	IUS/04
Management and innovation in health and social services	SECS-P/08
Pharmaeconomics and health technology assessment	SECS-P/01
Planning and control in healthcare	SECS-P/07 SECS-P/09
Quality and operation management	SECS-P/07
Statistics and big data	SECS-S/01

¹ The course is borrowed from the Graduate Degree¹ in Medicine and surgery and follows the timetable scheduled for this programme.

COURSE PROGRAMMES

Course's syllabi can be consulted by accessing the following section of
Università Cattolica website:

<http://programmideicorsi-milano.unicatt.it>

1. Epidemiology

PROF. STEFANIA BRUNO; PROF. NUNO MIGUEL DE SOUSA LUNET

COURSE AIMS AND INTENDED LEARNING OUTCOMES

The course is aimed to provide students the quantitative dimension of Health through the principles and methods of modern epidemiology in order to make them able to design and carry out epidemiological studies, to correctly read them and interpret data. Furthermore the course will give some insights into specific issues of applied epidemiology.

COURSE CONTENT

1. *Introduction to epidemiology*
 - Definition and scope of epidemiology.
 - Epidemiology and public health.
2. *Measures of occurrence: main concepts*
 - Proportion and ratio.
 - Prevalence and incidence.
3. *Measures of association*
 - Absolute measures.
 - Relative measures.
 - Attributable and impact measures.
4. *Principles of study design*
 - Case-control studies: aims, design and conduction, limits and strengths.
 - Cross-sectional studies and ecological studies: aims, design and conduction, limits and strengths.
 - Cohort studies: aims, design and conduction, limits and strengths.
 - Experimental trials and quasi experimental studies: aims, design and conduction, limits and strengths.
5. *Bias*
6. *Confounding and effect modification: main concepts*
 - Analysis of confounders and effect modifiers.
7. *Standardization*
8. *Systematic review and meta-analysis*
9. *Exposure assessment*
10. *Evaluation of diagnostic tests and study results*

At the end of the course students should:

1. have acquired the knowledge and understanding of the main measures of occurrence that concern the health of the populations, the health risk of the populations and the association measures that link the exposure to the effect of population health;

2. be able to know how to read and interpret epidemiological studies, meta-analysis, epidemiological reports, they should have acquired the skill to interpret the documents drawn up by the main research institutes with critical analysis of the results;
3. have developed useful skills to independently make choices on the use of measures to be used in the epidemiological field;
4. know how to deal with issues concerning the quantitative aspects of population health;
5. have acquired a rigorous and essential language that allows them to communicate clearly and effectively the knowledge acquired in the epidemiological field.

READING LIST

Katz DL, Elmore JG, Wild DMG, Lucan SC. *Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health*. Elsevier; 2014.

Fletcher RH, Fletcher SW, Fletcher GS. *Clinical Epidemiology: The Essentials*. LWW; 2012.

Rothman KJ. *Epidemiology: An Introduction*. Oxford University Press; 2012

TEACHING METHOD

Lectures. Self-learning, problem-based learning, practicals, group activities

ASSESSMENT METHOD AND CRITERIA

The final exam will be performed through multiple choice items and open ended questions investigating: a) the knowledge of how to measure health phenomena; b) the understanding of study design principles and applications. The final mark will be based on the written test; improvements of this classification are possible through the oral exam.

NOTES AND PREREQUISITES

Students will also have to book the exam via Blackboard. The Teachers are available for any explanations, clarifications and programmed extra support by requesting via e-mail.

For current Covid-19 health emergency the Teachers abide by the university rules

2. Ethics, Medicine and Public Health

PROF. CARLO PROVENZANO; PROF. PIETRO REFOLO; PROF. DARIO SACCHINI

COURSE AIMS AND INTENDED LEARNING OUTCOMES

The Course is elective and is borrowed from the “Bioethics and Medical Humanities” Course within Graduate Degree in Medicine and Surgery. “Ethics Medicine and Public Health” Course follows the timetable scheduled for

“Bioethics and Medical Humanities” Course. Throughout the Course the student will reach a better understanding of:

- *Medical Anthropology*, in order to achieve: a. the basic concepts on humanization of medical practice and care; b. the meaning of the medical practice and the anthropological dimensions of health and disease; c. the meaning of patient-physician relationship.
- *Philosophical History of Medicine*: the aim of the Module is to understand how the philosophical and scientific progress influenced the medical art through ages, and the mutual relationship between Medicine and society.
- *Bioethics*: through the study of bioethics, the Module will address the ethical complexity of contemporary Biomedicine, moving from main bioethical frameworks through the ethical issues in the areas of the Beginning of life, Genetics, Human experimentation, and Human reproduction.

In particular, the specific educational objectives of the teaching can thus be interpreted, according to the 5 Dublin Descriptors:

- *Applying knowledge and understanding*: at the end of the Course the student will have to demonstrate to have acquired a wide knowledge related to the basic concepts and the correlations among different Modules (Medical Anthropology, Philosophical History of Medicine, Bioethics and Medical Humanities) provided within the Course.
- *Applied knowledge and understanding*: at the end of the Course the student, in complete autonomy, must be able to recognize and describe different concepts and contents of the Modules.
- *Making judgments*: at the end of the Course the student, through the information gathered through the classes, must be able to recognize the bioethical frameworks, the basics of Medical Anthropology and to set up an articulate knowledge of different historical ages of Medicine.
- *Communication skills*: at the end of the Course the student will have to communicate what he has learned clearly, exposing the information in a coherent logical sequence, with appropriate technical language and using correct terminology.
- *Learning skills*: at the end of the Course the student, on the basis of the acquired cultural elements, must be able to broaden his / her knowledge and update himself / herself drawing independently on texts, scientific articles and online platforms.

COURSE CONTENT

Medical Anthropology

- The concepts of anthropology, cultural anthropology, and medical anthropology.
- The legacy of P. Laín Entralgo and V. von Weizsäcker.
- The birth of medical anthropology: the historical-cultural background.

- What is medicine?
- What makes a human being a person and what is implied in the idea of personhood.
- Medicine as the place where a culture attentive to the person is built: the anthropology of health and disease, and the importance of the doctor-patient relationship.
- The doctor-patient relationship models.

Philosophical History of Medicine

- The concepts of disease and death from the dawn of mankind to the Hellenic and Roman schools and beyond; the Hippocratic Oath: still actual?
- Arabian and Salernitan schools: observation and deduction replace the “Ipse dixit”.
- Caring places: from pilgrim assistance to hospitals and universities; Renaissance and the anatomical studies.
- Gross pathology paves the road to etiopathogenesis.
- Microscopy and physiology: observing and measuring to understand.
- Vaccination precedes Microbiology.
- Experience and experimenting: from Claude Bernard to evidence-based medicine.
- The technical rise of the XIX century: X-rays, anaesthesiology, workers medicine.
- “Homo homini lupus”: the ethics and practice of human testing.
- Prothesization: from Egyptians to the cyborg.
- Asian and pre-Colombian healing: body and spirit are the same.
- The XX century’s surge.

Bioethics

- Introduction to the Module; the issues that led to the birth of the discipline: definitions, interpretations and pioneers of Bioethics.
- Bioethical frameworks: foundations and models.
- Preclinical and clinical trials as a paradigm of bioethical issue.
- Genetics, prenatal diagnosis and beginning-of-life issues.
- Human sexuality.

READING LIST

Medical Anthropology

Wiedebach H. Some aspects of a medical anthropology: pathic existence and causality in Viktor von Weizsäcker. *History of Psychiatry* 2009; 20(3): 360-376.

Sgreccia E., *Personalist Bioethics. Foundations and Applications*. Philadelphia: NCBC, 2012.

Philosophical History of Medicine

Gorton DA. The History of Medicine. Philosophical and Critical, from Its Origin to the Twentieth Century, GP Putnam's Sons, New York and London 1910.

Guthrie D. A History of Medicine. Thomas Nelson, New York 1945.

Bioethics and Medical Humanities

Sgreccia E., Personalist Bioethics. Foundations and Applications. Philadelphia: NCBC, 2012.

TEACHING METHOD

The Course will be carried out through Lectures, Self-learning, Case studies, Practicals, Group activities. Teaching includes: theoretical lectures and guided group work for students in small groups. The lecturers make use of the classic subsidies represented by images and / or videos and will be provided by the teachers to all the students. Furthermore, the student can independently study what he has learned in an individual work at other times, in the absence of the teacher. According to the Dublin Descriptors, the following points will be implemented:

- *Knowledge and understanding*: during the lectures, the lecturers will illustrate to the students the main topics studied, educating a study method that integrates the different levels of knowledge (Ethics/Bioethics; Philosophy, Medical Anthropology, History of Medicine) so as to allow on the one hand the appreciation of the theoretical implications of the subjects of study and on the other side the possible applications. The student is encouraged to develop and improve his/her observation, comparison and deduction skills, qualities that will not only be useful to pass the exam, but that will be fundamental to carry out the future medical profession in the best possible way.

- *Applying knowledge and understanding*: during the lectures the students are invited to an active participation, stimulating their ability to observe and deduct and soliciting questions with requests for clarification. This modality applies even more clearly during workgroups.

- *Making judgments*: once again the critical analysis work of the fundamental concepts underlying the three teachings is relevant, since the reflection is not only carried out on theoretical considerations, but also on applied cases.

- *Communication skills*: students are invited to ask questions and answer questions both in lectures and in workgroups. If the language is not adequate from the point of view of terminology and of the description of what has been observed, the teacher corrects it by proposing the correct way to express the concept to develop an appropriate technical/scientific language in the student.

- *Learning skills*: the lectures provided during the Course are explanatory of the main aspects related to all the topics listed in the program. However, students are encouraged to learn more about these contents using textbooks, e-learning, or other aids available online and invited to propose doubts and/or questions at the end of the lesson or requesting a personal appointment with the teachers.

ASSESSMENT METHOD AND CRITERIA

Written test through MCTs/open questions and / or oral exams. *In itinere*, short individual and/or workgroups can be set up for checking understanding and learning on the topics developed up to that moment.

During eventual MCTs exams, any portable electronic devices, including mobile phones, must be switched off and put over the desk inside an envelope given by the Course Coordinator. The only exception to this rule is if the Course Coordinator gives specific permission to use any device. Violations will be referred to the Disciplinary Committee. Exam will be passed if students give rights answers for at least 60% of the items for each of the three Modules (Medical Anthropology, Philosophical History of Medicine, Bioethics and Medical Humanities).

The maximum score (30/30 and honors [full marks]) will be awarded in cases where all the evaluation parameters outlined below are fully satisfactory (according to the Dublin Descriptors).

In determining the final grade, the Commission will consider the evaluation obtained in the individual parts. In the event of a clear disparity in the assessment obtained by the student in the individual parts, the Commission reserves the right to proceed with other questions to arrive at a final evaluation that is adequately representative of the preparation achieved by the student. The evaluation parameters according to the Dublin Descriptors are:

- *Knowledge and understanding*: through the examination the student will be able to demonstrate that he/she has acquired adequate knowledge relating to the different Modules of the Course.

- *Applying knowledge and understanding*: through the test the student will have to demonstrate to have acquired an adequate ability to have developed a valid comparative ability and deductive logic so as to independently perform a correct recognition of concepts and practical applications relating to the Modules as well as exposes with appropriate technical language.

- *Making judgments*: During the test the student has to demonstrate to have developed an evaluative autonomy and an adequate discernment between different concepts and application within different Modules of the Course.

- *Communication skills*: during the workgroup sessions, the examination of the language used by the student will allow us to deduce his/her capacity of exposition and logical integration of the learned contents, as well as the appropriateness of the acquired scientific terminology.

- *Learning skills*: the different ways of exam and will allow the lecturers whether the learning of knowledge has been sufficiently deepened and guided by a critical spirit, as well as to appreciate if the student has also conducted a in-depth personal work.

NOTES AND PREREQUISITES

Students are requested to attend at least 65% for each of the three Modules (Medical Anthropology, Philosophical History of Medicine, Bioethics). Students can access learning evaluation (through multiple choice tests (MCTs) and/or oral exams) only if their attendance is consistent with the above threshold.

3. Financial and management accounting in health care

PROF. ELISA RAOLI; PROF. ROSALBA SCHINO

COURSE AIMS AND INTENDED LEARNING OUTCOMES

Upon completion of the first module, students are expected to:

- Have learned the primary principles and methods of financial accounting and be able to apply them to the recording of transactions and creation financial statements.
- Have a proven ability to analyze, interpret, and evaluate financial statements for the purpose of understanding an organization's operating and financial performance and making decisions regarding the provision of capital.
- Have an appreciation of the larger context of financial reporting (beyond rules and procedures).

Upon completion of the second module, students are expected to have the requisite knowledge and competency to apply the following cost accounting tools and techniques:

- Knowledge of the contents of the IAS 1 and more specifically of the Balance Sheet and Income Statement structure
- Analyzing cost/volume/profit relationships by healthcare product or service.
- Conducting break-even analysis.
- Implementing the activity-based costing technique.
- Overview of the budgeting process.
- Analyzing annual economic and financial performance of companies belonging to the pharmaceutical industry.
- Forecasting financial, operational results and planning for the necessary corrective actions to improve performance, both in the short and long-term.

COURSE CONTENT

The first module will cover the following content:

- Introduction and Fundamentals of Financial Accounting (Accounting as a decision making tool, the accounting equation, the transaction analysis, the adjustment and closing process, construction of financial statements).
- Ability to read key Financial Statements.

- The relevance of Cash Flow Statement, the Auditors’ Report, the notes to the Financial Statements.
- The Investments and Consolidated Financial Statements
- Financial Statement Analysis using key financial ratios.
- Managing the Revenue Cycle in the Healthcare Organizations.

The second module will cover the following content:

- Managerial Accounting Basics & Cost-Volume-Profit Analysis.
- Overheads Cost Allocation and Activity Based Costing (TDABC).
- Cost calculation
- Operating Budgets and Financial Budgets overview.
- Performance analysis, financial and economic equilibrium

READING LIST

First module:

- *Financial Accounting, Global Edition, 11/E*, Walter T. Harrison, Charles T. Horngren, C. William Thomas, Wendy M. Tietz, Themis Suwardy.
- On-line textbook supplement: MAL

Students should sign-up in MAL to the instructor’s course section using the information show below:

MAL Course ID for homework: schino11748

MAL Course name: Financial Accounting and Financial Statement Analysis- SP2019

- *Healthcare Finance: An Introduction to Accounting and Financial Management*, 6th Edition, Gapenski, Louis C., AUPHA Press/Health Administration Press, 2016.

Second module:

- Gapenski, Louis C., *Healthcare Finance: An Introduction to Accounting and Financial Management*, 6th Edition, AUPHA Press/Health Administration Press, 2016.
- Pink, George H., and Paula H. Song, *Gapenski’s Cases in Healthcare Finance*, 6th Edition, AUPHA Press/Health Administration Press, 2018.

TEACHING METHOD

For the first module teaching methods include a combination of formal lectures as well as discussions and presentation of exercises related to daily topics, led by students (the discussion and presentation of exercises are graded).

Students are expected to make an effort to get familiar with the assigned readings prior to the relevant class session as well as keeping up with the homework throughout the duration of the course.

Class participation is particularly important. Students will not receive participation credit solely for attending class. Active participation includes: responding to questions, being engaged during class discussion, and keeping a professional and respectful behavior at all times in the classroom.

The second module builds on fundamentals of financial accounting concepts and financial statement analysis tools to expand students' competencies and skill sets for managing healthcare costs and strategic decision-making. Students will focus on management accounting tools and techniques. Through real case studies, students will learn how to interpret, analysis and forecast costs and revenues in a variety of organizational settings, such as managed care organizations, multi-specialty medical groups, and pharmaceutical companies. The aim is to provide the cost management tools and techniques to improve efficiency (cost per unit) and effectiveness (goal achievement). The takeaways will be cost analysis techniques that can be used by healthcare managers to improve organizational performance, both in the short and long- term.

ASSESSMENT METHOD AND CRITERIA

Each module counts for 50% of the total grade.

For the *first module*, attending students will earn their grade based on the following activities:

<i>Evaluation Activity</i>	<i>Fraction of Course Grade</i>
Pre-Assignment Chapters 1-4-	10%
First Day in-class Quiz	10%
Homework	15%
Discussion Leading	15%
Participation	15%
Final Exam	35%
TOTAL	100%

The Pre-Assignments, the First Day in-class Quiz, the Homework, and the Final Exam are all on-line.

The grade of non-attending students will be based on the scored earned at the Final Exam only.

For the *second module*, attending students will earn their grade based on the following activities:

Final Exam	100%
TOTAL	<u>100%</u>

NOTES AND PREREQUISITES

For the first module, prior to the beginning of the course, the instructor will make available a pre-assignment on the on-line supplement of Pearson (MAL). The pre-assignment is graded and is expected to be completed a few weeks before the beginning of classes. To this end, it is crucial for the students to proactively purchase the textbook and the access to MAL timely. The instructor will post on blackboard more details and information on this topic in due course.

4. Health econometrics and program evaluation

PROF. GIUSEPPE ARBIA; PROF. XIAODONG LIU

COURSE AIMS AND INTENDED LEARNING OUTCOMES

The course aims at introducing the student to a rigorous study of the basic econometric models by studying the statistical properties of the various parameter estimators. It also aims at introducing the student to use of the R © statistical package in an econometric context and to correctly interpreting the results of the estimates.

At the end of the course the student:

- will know the properties of the various estimators and will therefore be able to choose the best in each specific case
- will know how to estimate various types of regression models with the use of the R © statistical software
- will know how to accurately interpret the meaning of the estimated parameters and the different statistical tests calculated to complement the regressions

COURSE CONTENT

Simple linear regression, ordinary least squares estimate (OLS). Maximum likelihood estimation. Method of moments estimation. Multivariate linear regression. Violation of the hypotheses of validity of OLS: Normality, Heteroskedasticity, Temporal and Spatial Autocorrelation. Discrete choice models and non-linear regression. Use of econometric models to test the effectiveness of health programs.

READING LIST

Arbia, G. (2014) *A Primer for Spatial Econometrics: With Applications in R* (Palgrave Texts in Econometrics), Palgrave MacMillan
Greene W. (2018) *Econometric Analysis*, 8th Edition, Pearson

TEACHING METHOD

Lectures, laboratories with the use of the R © software. On a weekly basis students will be offered laboratories on the use of R and R Studio ©. The laboratories will be conducted by dott. Vincenzo Nardelli.

ASSESSMENT METHOD AND CRITERIA

Optional intermediate exam on PC. Students will carry out practical exercises on the PC with the use of the free software R © will be installed.

If successfully, the intermediate exam will account for 50% of the final grade.

Final examination carried out with the same criteria as the intermediate exam. Those that will have successfully passed the intermediate exam, will have to carry out only the second part of the final exam.

The intermediate exam can only be used in the winter session at the end of the course, in the January and February appeals.

NOTES AND PREREQUISITES

Warnings: In the first lesson of the course the professor will indicate to the students how to download the R and RStudio software and the main R packages used throughout the course.

Prerequisites: a basic three-years degree course in statistics that includes descriptive statistics, probability, inductive statistical inference (point and interval estimators), hypothesis testing and the simple linear regression model.

Recommended text for prerequisites:

Levine, J-Szabat-K. and Stephan, D. (2018) *Statistics, Pearson*.

5. Health economics

PROF. GILBERTO TURATI, PROF. FRANCESCO MOSCONE

COURSE AIMS AND INTENDED LEARNING OUTCOMES

Health economics is a growing field of studies in economics concerned with the use of economic concepts to analyze issues related to health and healthcare. The goal of this course is to discuss selected topics within this field which are of utmost relevance for the management of healthcare organizations. The course will cover both micro- and macroeconomic issues. At the macro level, attention will be paid first to explaining cross country variation in health spending, with a particular emphasis on the role of productivity and the role of technology and innovation. At the micro level, the focus will be on the market for hospital services, which still represent about half of the healthcare spending in many countries. On the demand side, the course will analyze the choice of patients and the importance of information and networks. On the supply side, the course will focus on organizational design: at the firm level, discussing the role of not-for-profit hospitals as compared to physicians' cooperative, for-profit clinics, public hospitals; at the market level, analyzing the quasi-market model and the role of incentives provided by different payment systems; at the sub-national level, providing a discussion of the implications of federalism and decentralization. Market outcomes will be finally considered in the light of inefficiency in spending and inappropriateness in the services provided. The discussion for all the topics will couple theoretical arguments

with the analysis of real cases useful for the management of healthcare organizations. In this sense, students will be encouraged to critically assess the impact of Covid-19 on the health care sector from a micro and macro perspective. After the course the student:

- Will have knowledge of the determinants of healthcare spending and their role in explaining the observed evolution of public and private expenditure.
- Will have knowledge of the economic arguments relevant for the analysis of the demand and the supply of hospital services.
- Will be able to apply the knowledge acquired during the course for critically discussing real world cases related to patients' choice, the organization of hospitals, the organization of the market for hospital services, the decentralization of healthcare regulation to sub-national governments.
- Will be able to apply the knowledge acquired during the course to evaluate the efficiency and the inappropriateness of healthcare provision at different levels of aggregation.
- Will be able to use economic language and concepts in their analysis and reports.

COURSE CONTENT

The course is designed as an advanced course in health economics for students interested in becoming professional managers in the healthcare industry. The program is divided in four broad parts:

Part I: Understanding healthcare spending

The economic approach to the analysis of health and healthcare

- Inequalities in healthy life years across countries

The determinants of healthcare spending

- Observing the dynamics of expenditure
- The role of innovation and technology

Part II: The demand side of the market for hospital care

The traditional approaches

- The Grossman model: health shocks and the demand for care

Information and networks

- Availability of information and patients' networks
- The quality of care

Part III: The supply side of the market for hospital care

The hospital as a firm

- Not-for-profit providers
- Incomplete contracts and a theory of the ownership of the firm
- Mixed oligopolies and beyond

The hospital as a key market player

- Incentives in the quasi-market model
- The behavior of different types of providers and the role of competition

Decentralization and fiscal federalism

- The regulation of hospitals at the sub-national level
- The differences across sub-national systems

Part IV: Inefficiency and inappropriateness

How to evaluate outcomes

- Methodologies to assess inefficiency and inappropriateness
- DEA and stochastic frontiers

Case studies

- De-hospitalization
- C-sections

READING LIST

Each topic is covered by a list of selected references (mostly scientific journal articles) that will be provided by instructors and discussed during the lectures. Additional readings will be taken also from:

B.H. Baltagi-F. Moscone (eds.) (2018), *Health Econometrics, Contributions to Economic Analysis*, Emerald Publishing;

S. Glied-P.C. Smith (eds.) (2011), *Oxford Handbook of Health Economics*, OUP.

TEACHING METHOD

Lectures and discussion of case studies.

ASSESSMENT METHOD AND CRITERIA

Evaluation is based only on a written exam lasting 60 minutes. The exam is made of three sections. Section 1 comprises 10 multiple choice questions on basic concepts discussed during the course. Each correct answer is worth 1 point; each wrong answer provides a penalty of 0.5 points. Sections 2 and 3 are open questions and are thought to test the ability of students to apply the knowledge acquired during the course and to communicate using key economic concepts what they have learned. Instructors will evaluate the completeness and accuracy in answers to mark exams.

NOTES AND PREREQUISITES

Students are required to have basic knowledge of key concepts in microeconomics and key concepts in statistical inference and regression analysis to fully understand the arguments discussed during the course.

Students are kindly asked to refer to the Blackboard website for updated information and additional teaching material related to the course.

Office Hours

The calendar for the office hours is published on the official personal website of the instructors. All the details will be made available on Blackboard at the beginning of the course.

6. Healthcare and insurance in comparative systems

PROF. ANTONIO GIULIO DE BELVIS; PROF. JOAN COSTA FONT

COURSE AIMS AND INTENDED LEARNING OUTCOMES

The main course objectives are:

1. To provide a way of thinking about health care insurance
2. Understand the different health systems designs
3. A clear analytical way of examining health care reforms and health systems, according to a economic and a public health perspective
4. To understand the policy challenges of insurance, ageing, innovation, and inequality in the health sector.

At the end of the course the student:

- Will know the main theoretical models that explain the organizations, governance and management of healthcare systems;
- Will be able to define the main domains of functioning in healthcare systems;
- Will be able to build a dashboard of indicators to measure the performance of an healthcare systems;
- Given a public health issue (eg: vaccination, non communicable diseases,...) will be able to compare the main functions, organization of services (ie, health promotion and prevention, diagnostics, treatment, follow up and rehabilitation), healthcare and non healthcare interventions and policies among a panel of OECD countries.

COURSE CONTENT

The course will first outline the approaches to analyze the organization, financing and delivery of health services among different health care models: Focus on analysis of the main health systems in the Mediterranean region.

We will classify and describe the main institutional framework for health policy and the process, content and implementation of this policy.

After classifying the models, we proceed by looking at the main dimensions of the health systems performance and how to compare performance in primary, secondary and tertiary care across the several health models.

Attention will also be paid to specific topics like health insurance, long term care funding, decentralisation, and health inequalities.

READING LIST

- Smith EC, Mossialos E, Papanicolas I, Leatherman S. Performance Measurement for Health System Improvement: Experiences, Challenges and Prospects. 2010, Cambridge University Press, New York.
- Fattore G, de Belvis AG, Ricciardi W, Morsella A et al. Covid 19 Health Systems Response Monitor.
- de Belvis AG et al. Italy: Health System Review. Health Syst Transit. 2022 (in press).
- Maged D, Ferrelli RM, Zorayan A, Di Pietro ML, de Belvis AG, Ricciardi W, Boccia S, Teleman AA, Sanguinetti M. Cooperating to improve healthcare in Arab countries. Ann Ist Super Sanita. 2017 Oct-Dec;53(4):330-333.
- Costa-Font JC, Turati G. Regional health care decentralization in unitary states: equal spending, equal satisfaction? Regional Studies. 2017. ISSN 0034-3404
- Costa-Font JC Sato A. Health systems futures: The challenges of technology, prevention and insurance. Futures 2012 44(7):696-703.
- Costa-Font JC, Hernández-Quevedo C. Measuring inequalities in health: what do we know? What do we need to know?. Health Policy 2012, 106(2):195-206.
- Costa-Font JC. The National Health Service at a critical moment: when Brexit means hectic Journal of Social Policy 2017 46 (4):783-795.
- Costa-Font JC, Courbage C, Swartz K. Financing long-term care: ex ante, ex post or both? Health Economics 2015, 24:45-57.
- Costa-Font JC, Vilaplana M. More than One Red Herring'? Heterogeneous Ageing Effects on Healthcare Use. Health Economics 2020, 29: 8-29.

TEACHING METHOD

The format of this course is a combination of lectures, case discussions, and readings. We will employ the following teaching methods:

- (a) Readings from textbooks: To provide basic structure, concepts and techniques.
- (b) Readings from journals: To augment the textbooks and provide more rigorous intellectual foundation.
- (c) Lectures/Classes/Discussions: To create a coherent framework of studying the source material; to give students a chance to ask questions and clarify their understanding.
- (d) Case studies: To apply what has been learnt to real life situations.

Active student participation is essential in the classes. In the classes, the lecturer will introduce the topic/case/experiment/exercise and lead the discussion. Students are encouraged to present pre-assigned material and lead part of the discussion in the class group. Pre-assigned reading of cases and exercises is essential.

Practicals

Evaluation of health care systems; Performance indicators; By considering the ongoing pandemic threat, a web based cross-country comparisons of policies and management of Covid-19 will be performed on several countries in the European Region of WHO.

ASSESSMENT METHODS AND CRITERIA

There are no prerequisites for participation in the Course.

The exam is composed of written questions regarding all modules.

The evaluation is based on two elements:

1. Group work on the organizations, health needs assessment, governance, allocation and health and non health policies and activities on a public health issue in a given OECD country
2. Final written test on the second part of the program.

All the elements of evaluation (group work and final examination) are expressed in 30/30.

All the other details concerning the exam procedures will be given out by the Lecturer at the beginning of the course.

7. Human resources management in complex organizations

PROF. AMERICO CICCETTI; PROF. MAGDALENE ROSENMOELLER

COURSE AIMS AND INTENDED LEARNING OUTCOMES

Healthcare organizations are characterized by the central role of human capital in determining quality of care and financial performance. The course aims at providing students with a good knowledge of HRM processes and tools, with a specific focus on their implementation in the healthcare sector. The objective of the course is to develop both theoretical knowledge and practical skills connected to some of the most effective HRM tools used in complex organizations. Moreover, it is aimed at understanding the ways in which innovation affects the health care sector and in particular the workforce, and how it can best be managed.

After this course, students will have an extensive knowledge of the role of the HRM function within healthcare organizations and will be able to match a number of HRM tools and procedures to the function's (and organization's) strategy. He/she will be able to assess the "maturity" of HRM functions and be aware of the coherence between its objectives and its actions. Moreover, students will simulate the use of tools aimed at managing competencies and driving performance, thereby acquiring practical ability in concrete and "real-life" situations. Students will be invited to develop HRM strategies and present them to an audience, thereby developing their communication and persuasion skills.

COURSE CONTENT

The course is structured into two parts:

PART I (prof. A. Cicchetti): Introduction, Course Overview; From strategy to people; Medical management and clinical leadership; Assessing jobs, persons

and performance; Qualitative and quantitative methods; Pay for performance in medicine; What is a “competence model”?; From job families to professional roles; Final presentations and closing remarks

PART II (prof. Magdalene Rosenmoeller): A complex sector and complex care organizations; The Health Sector and the (Changing) Role of Professionals; HHRR Policy: Needs, Strategy and Planning; The European Context for Health Professionals; Knowledge Management; Continuous Education / Role Professional Journals; Realizing the Technology Revolution in Health Care; IT Technologies: changing paradigm, changed skills set; Integrated Care: Implementation of Innovation; Integrated Care changing role for HHRR; Managing for Quality; Commit to Excellence / Employee Satisfaction; The HHRR Managers Tasks; Career Development – Professional Growth; Leadership in Innovation and Creativity; Bases of Leadership / Clinical Leadership; Creative Teams / Design Thinking; Report Presentations. Conclusions Wrap Up.

READING LIST

Crawshaw J, Budhwar P, Davis A. Human Resource Management Strategic and International Perspectives, Sage, London (2019) [Chapters 1, 2, 7, 9, 10, 11, 14]
“Characteristics & Qualities of a Personnel Manager”, Bob Kelly, Demand Media
“The Role of HR Manager in Health Care”, Alejandro Russell, Demand Media
Case Study HBS: “Development and Promotion at North Atlantic Hospital”
Doctors and managers: a problem without a solution? (Bmj n. 326, 2003)
What doctors and managers can learn from each other? A lot (Bmj n. 326, 2003)
Case study HBS: Hospital Clinic de Barcelona
Case Study HBS: “Performance Management at Vitality Health Enterprises, Inc”
“Successes and Failures of Pay for Performance in the United Kingdom”, NEJM 2014.
“Allied Health Competency Model”
“Job families and other taxonomies”
Four Habits of High-Value HealthCare Organizations, R. Bohmer, NEJM, 2011
Assessing future health workforce needs. Gilles Dussault et al. Policy Brief, 2010
Action Plan for the EU Health Workforce, EC, SWD(2012) 93 final
Perspective on the Professional Qualification Directive. Eurohealth, 17,4 2011
HBS Intermountain Health Care (2013)
IESE P1102 EN - TMC – Telemedicine Clinic
IESE P1148E Innovating in the Basque Country. Moving to Chronic Care
Think integration, think workforce: Three steps to workforce integration, Centre for Workforce Intelligence, 2013
Why Hospitals don’t learn from Failures, ATucker et al Californian Rev.Management 2003
10 Free (Or Very Inexpensive) Ways To Engage Staff, Quint Studer

Chapter 8 & 9 Recruitment, Interviewing, and Selection Strategies / Maximizing Performance Management and Evaluation. JE Pynes - Human Resources Management for Health Care Organizations: A Strategic Approach. Jossey Bass 2012
Case Pina Bausch: Leadership as collective Genius (ESMT 412-0132-1)
NEJM, Leading Clinicians and Clinicians Leading, R. Bohmer, 2013
Leading Teams (MSH Managers Who Lead, 2008)
Further articles, case studies and book chapters will be provided and shared through Blackboard

TEACHING METHOD

Short academic lectures are sided with case study discussions, interactive sessions and laboratories. Regarding case studies, students are asked to read assigned documents in advance, before lessons. Students are also asked to work in groups of 5-6 people and to prepare case discussions of about 30 minutes.

Ten hours of the course are dedicated to a specific laboratory in which students, organized in groups (5-6 people), will have the chance to design job profiles under the guidance of the teacher. Groups are suggested to work during free time and will provide a formal power point presentation.

ASSESSMENT METHOD AND CRITERIA

The evaluation of contents delivered during course takes place through a:

- Written test (multiple choice and open questions) - 30% of the total mark
- Assessment of group-work presentation (laboratory) - 20% of the total mark
- Group work (prof. Rosenmoeller) - 30% of the total mark
- Assessment of participation in class - 20% of the total mark

It is possible to hold the written test at any session. However, given the nature of the other forms of evaluation, these require a regular presence and participation to lectures. It is therefore mandatory to be present in class.

There are no intermediate exams.

For non-attending students the assessment is based on a longer test. Non-attending students are asked to use material distributed by teachers and to study Crawshaw J, Budhwar P, Davis A. Human Resource Management Strategic and International Perspectives, Sage, London (2019) [Chapters 1, 2, 7, 9, 10, 11, 14].

NOTES AND PREREQUISITES

Students must be fluent in written/spoken English and must ready to prepare and study materials before class sessions.

Office hours

Monday 9.00 – 10.00

8. International law and health

PROF. MARIA CHIARA MALAGUTI; PROF. EVA VILLARREAL PASCUAL

COURSE AIMS AND INTENDED LEARNING OUTCOMES

The recent pandemic teaches us many lessons. On the one side, although some international instruments on infectious diseases exist, there is not enough coordination among states. The international organization in charge of these matters, the WHO, has limited powers and can only intervene to a very limited extent. On the other side, domestic health systems differ, are often based on different premises and standards of protection of population varies, requiring further considerations on the protection of human rights and on the role of health as a public good as a global issue. Moreover, this pandemic has to be considered within the larger context of climate change, protection of the environment and social rights, since the concept of ‘health’ today has a much broader understanding. These are all matters that require international cooperation and joint efforts. Finally, the current trade system that sustains globalization strongly affects our general understanding of protection of health, and to many extents principles of free trade interfere with those of health protection.

The aim of the course is to delve on the above aspects evidencing the complexity of the issues at stake and proposing a holistic analysis of these.

After the course the student:

- Will be acquainted with all existing international instruments and organizations focusing on health
- Will be familiar with also WTO, OECD and other international bodies that play an indirect role on cooperation on health and influence the global governance
- Will know human rights approaches on health
- Will have acquired practice with indicators applied by international organizations assessing domestic policies
- Will adopt a holistic approach to health issues at international level
- Will be able to have a critical approach to issues at stake

COURSE CONTENT

The course will address the issues of health and environment protection through the lenses of existing international theory and the most modern approaches on what is usually called “global law”, as a concept going much beyond the analysis of the positive sources of international law (treaties and regulations). Students shall be required to read cases and understand the law in progress, as well as analyse critically concrete examples or actual reports of international organizations. Some economics, political science and theories of governance shall help in better understanding the issues at stake.

In order to approach global health under all the prospected angles, the course is organized in two interconnected modules. Following an introduction on the works of the WHO and the content of the SDGs in the field of health, these shall develop as follows:

- The first module, by Professor Villarreal Pascual, will address general issues on human rights norms and standards as well as indicators used to assess their impact on health policies and programs. Additionally, it will delve into an in-depth analysis of the matters above through practical exercises.
- The second module, by Prof. Malaguti, will address issues connected to trade and investments, on the one side, and health, food safety and environment protection, on the other side. These will also include treatment of pharmaceuticals, IP and the role of innovation. In this context, also the issue of patentability of viruses will be analysed, as one of the most urgent issues to be considered because of the COVID-19 pandemic.

READING LIST

Students who follow classes on a regular basis will study on the basis of materials distributed during the course and coming from different sources, in particular actual cases. Students who do not follow classes on a regular basis shall read the following text, which is in any event a reference text book for all students who want to have a complete and systematic understanding of the matter and supplement materials received in the course Lawrence O. Gostin, *Global Health Law* (Harvard University Press, 2014)

TEACHING METHOD

Frontal lessons, case studies and discussions with students. Guests from international organizations and/or ONG may be invited to share their concrete experience with the students.

ASSESSMENT METHOD AND CRITERIA

Students regularly participating into classes will conclude each module by submitting an individual written essay. Final grades will be the average resulting from the combined scores received in the two essays.

Students not participating into classes on a regular basis will sustain an oral exam based on the reference text book.

NOTES AND PREREQUISITES

Students are kindly asked to refer to the backboard website for updated information and teaching materials related to the course.

9. Management and innovation in health and social services

PROF. ALFREDO D'ANGELO; PROF. FEDERICA ANGELI; PROF. ARIANNA ARIENZO

COURSE AIMS AND INTENDED LEARNING OUTCOMES

Building on strategic management, innovation and entrepreneurship, this course aims to provide an understanding of the trends and dynamics related to the management of innovation in the healthcare industry.

More specifically, the course will present students with frameworks and tools offered by multiple perspectives, with the aim of offering a heterogeneous set of the theoretical and practical models. Participants will apply such frameworks and tools to simulated and real case scenarios, to better understand the characteristics of managing innovation in healthcare, life-sciences and social services organizations (e.g. pharmaceutical companies, biotech firms, medical devices).

By the end of the course, students will be able to:

- identify and interpret the main challenges faced by healthcare, life-sciences and social services organizations in the current competitive landscape;
- assess what are the main tools and skills necessary to adopt the innovation and how such organizations implement innovation models;
- understand the technological, human, economic, organizational, social and other dimensions of innovation;
- demonstrate operational knowledge of the tools and models explained during the course and apply them to real world contexts (e.g., private firms or public hospitals);
- appreciate the relevance of managerial and innovative solutions adopted by healthcare, life-sciences and social services organizations;
- Develop a strategic innovation and entrepreneurial mindset.

COURSE CONTENT

The course is organized in 3 modules.

The *first module* (Module I) is about the main issues of innovation and R&D management in the healthcare sector (e.g., pharmaceutical companies, biotech firms, medical devices). It will focus first on the basics of innovation and technology management, applied to healthcare, and then on emerging health technologies, their development and diffusion. Finally, it will cover innovative technology-based business models.

This module should provide students with the theoretical knowledge base for better appreciate the other two modules. The module will include theoretical lessons, practical exercises, discussion of real-world case studies, and the testimonials for key player in the industry.

The *second module* (Module II) about revising the fundamentals of strategic management with specific focus on healthcare organizations and the relationship with their external environment. Moreover, the module will cover business modelling literature addressing how organisations generate and capture value in healthcare. Alliances and networked organisational forms will discuss as shared governance model in the healthcare environment. The module will include theoretical lessons, practical exercises, and discussion of real-world case studies.

The *third module* (Module III) is about discovering the fundamentals practices and challenges of setting an entrepreneurial venture in digital health. This module will be delivered by an entrepreneur, and it will include theoretical lessons and practical exercises to develop skills to assess potential threats and opportunities given by new technologies in the healthcare sector.

READING LIST

Module I

J. Barlow (2016), *Managing Innovation in Healthcare*, WSP.

Selection of readings and cases uploaded by the lecturer on the Blackboard.

Module II

Selection of readings and cases uploaded by the lecturer on the Blackboard.

Module III

Selection of readings and cases uploaded by the lecturer on the Blackboard.

TEACHING METHOD

The teaching method employed in this course drawn inspiration from the old saying “tell me and I will forget, show me and I will remember, involve me and I will understand” (Confucius).

The teaching will be characterized by frontal lessons, case studies, simulations, testimonials and group exercises.

The course may involve presentations by experts, managers and/or business owners for the purpose of better illustrating some of the issues of the course programme.

ASSESSMENT METHOD AND CRITERIA

The assessment of this course will be based on a written exam (100%) relative to the 3 modules reported above. The exam could include a short case study analysis, multiple choice questions and open question/exercises.

In special circumstances, a homework assignment could be considered as an alternative assessment option. Criteria for evaluation will become available at the beginning of the course.

There are no pre-requisites for this class.

In case the Covid-19 pandemic situation should perpetuate, distance teaching will be guaranteed via Blackboard in ways that will be communicated in appropriate time.

10. Pharmacoeconomics and health technology assessment

PROF. ELENA PIZZO; PROF. LUCA SALMASI

COURSE AIMS AND INTENDED LEARNING OUTCOMES

Pharmacoeconomics and Health Technology Assessment (HTA) is a relevant field of studies in health economics, concerned with understanding whether resources are allocated to the most cost-effective treatment or health technology. The aim of this course is to present and discuss selected topics within this field, which are of utmost relevance for the management of healthcare organizations. During the course students will learn both theoretically and empirically how to assess a cost-effectiveness analysis to evaluate the adoption of a new medical treatment or health technology. Theoretical lectures will introduce the basic concepts of pharmacoeconomics and HTA, defining how to measure and discount costs and benefits. Then, attention will be paid to the decision-making process, introducing relevant concepts and methods to inform policy makers or hospital managers on whether a new technology should be preferred with respect to the most relevant alternatives. The last part of the course will be devoted to applying the theoretical models through intensive lab sessions using the R package BCEA, one of the most popular statistical software to perform Bayesian cost-effectiveness analysis. During lab sessions two case studies will be presented and discussed.

After the course the student:

- will have knowledge about the main aspects of pharmacoeconomics and HTA.
- will have knowledge of the main methods to perform cost-effectiveness analysis of new medical treatments/health technologies.
- will be able to apply the knowledge acquired during classes to discuss relevant topics on pharmacoeconomics and HTA with an appropriate technical language.
- will be able to apply the knowledge acquired during classes to discuss results of a Bayesian cost-benefit analysis.
- will be able to apply the knowledge acquired during classes to perform independently a Bayesian cost-effectiveness analysis with the R package BCEA.

COURSE CONTENT

Part I: Introduction to pharmacoeconomics and health technology assessment

- How to measure costs and case study
- How to measure outcomes (effectiveness, monetary benefits, utility)
- Quality Adjusted Life Years (QALYs), methods for extrapolation and case study
- Discounting (both for costs and outcomes)

Part II: The decision-making process

- Incremental Cost-Effectiveness Ratio (ICER) and the cost-effectiveness plane
- The National Institute for Health and Care Excellence (NICE) and relevant thresholds
- Net Monetary Benefit (NMB) and dominance
- Decision trees
- Markov models
- Introduction to dynamic models
- Bayesian analysis
- Introduction to sensitivity analysis (discrete and PSA)
- How to appraise a paper (checklist)

Part III: Introduction to Bayesian Analysis and case studies

- Bayesian analysis in health economics
- Basic concepts of health economic evaluation
- Doing Bayesian analysis and health economic evaluation in R
- Case studies: (i) vaccine and (ii) smoking cessation

Part IV: Using R to perform Bayesian cost-benefit analysis (lab)

- Basic health economics evaluation
- Cost-effectiveness plane
- Expected incremental benefit
- Health economic evaluation for multiple comparators and the efficiency frontier
- Probabilistic Sensitivity Analysis
- Modelling parameter uncertainty
- Value of information analysis
- PSA applied to model assumptions and structural uncertainty

READING LIST

Briggs-Klaxton-Sculpher, *Decision modelling for health economic evaluations*, Oxford University Press 2011.

Drummond-Torrance-Stoddart, *Methods for the Economic Evaluation of Healthcare Programmers*, Oxford University Press, 2015.

G. Baio, A. Berardi, A. Heath, *Bayesian Cost-Effectiveness Analysis with the R package BCEA*, Springer International Publishing, 2017.

TEACHING METHOD

Classes are organized as frontal and lab sessions. Frontal lectures provide knowledge necessary to understand fundamental concepts of pharmaeconomics and HTA. Lab sessions propose empirical analysis of case studies using models discussed throughout the course.

ASSESSMENT METHOD AND CRITERIA

Evaluation is based on a written exam lasting 60 minutes. The exam is made of three sections. Section 1 comprises 10 multiple choice questions on basic concepts discussed during the course. Each correct answer is worth 1 point; each wrong answer provides -0.5 points. Sections 2 and 3 are open questions and are thought to test the ability of students to apply the knowledge acquired during the course and to communicate using key concepts that they have learned. Instructors will evaluate the completeness and accuracy in answers to mark exams. During the second part of the course students will have the option to prepare a group project that will consist of a replication of an empirical application discussed during lab sessions. Group projects will be discussed and evaluated and will contribute to 30% of the overall evaluation of the second part of the course.

NOTES AND PREREQUISITES

Students are required to have basic knowledge of key concepts in health economics and in statistical inference and regression analysis to fully understand the arguments discussed during the course.

Students are kindly asked to refer to the Blackboard website for updated information and additional teaching material related to the course.

In the event that the health situation related to the Covid-19 pandemic will not allow for in presence frontal lectures, lectures will be guaranteed online and students will be promptly informed.

Office hours

Prof. Pizzo will meet students by appointment. Please send an email at elena.pizzo@unicatt.it. Prof. Salmasi will meet students at office 536, 3rd floor, Faculty of Economics (Rome campus) as indicated on his personal web page.

11. Planning and control in healthcare

PROF. MARCO GIOVANNI RIZZO; PROF. GILLIE GABAY

COURSE AIMS AND INTENDED LEARNING OUTCOMES

The aim of the course is to enable students to develop a specialized knowledge of performance measurement systems in healthcare organizations, including how they can contribute to shape the strategy and assess the level of strategy implementation. A further aim is to enable students to develop the ability to use relevant concepts and terminology in discussing strategy implementation; profit goals, and strategies achievement; techniques of profit planning; balanced scorecard, and transfer pricing.

On completion of the course, students shall be able to:

- explain relevant advanced concepts of planning and control in healthcare, associated with models and instruments of performance measurement; demonstrate an integrated view of strategic leadership and controlling processes; classify different types of performance areas and indicators; demonstrate understanding of the meaning of critical thinking and reflection in academic texts and seminars;
- use concepts and models of planning, control and performance measurement systems for description, analysis and discussion of the new or unfamiliar managerial issues and practices in healthcare; make proposals concerning planning and control in healthcare, including the performance measurement system with a special focus on managing strategic tensions, and coping with tensions through the diagnostics and interactive control systems;
- reflect on financial and organizational control from different perspectives, including an ethical perspective;
- critically analyze the consequences of the implementation of different strategies and performance measurement systems' decisions in speech and in writing;
- develop the necessary learning skills for them to continue studying in a largely self-directed or autonomous way or apply for managerial positions.

COURSE CONTENT

The course will cover the following contents:

- review of the basic concepts of management control;
- introduction to performance measurement and control systems in healthcare;
- foundations for implementing strategies (organizational tensions to be managed; basics for successful strategy; organizing for performance; using information for performance measurement and control);
- Understanding how innovative technologies in health may be integrated for strategic competitiveness
- creating a profit plan;
- linking performance to internal markets: transfer prices;
- building a balanced scorecard;
- achieving profit goals and strategies (using diagnostic and interactive control systems; aligning performance goals and incentives; identifying strategic risk; managing strategic risk; levers of control for implementing strategy).

READING LIST

R. Simons, *Performance measurement and control system for implementing strategy*. Pearson. New International Edition (Chapters: 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14) each single module may be purchased at the link: <https://hbsp.harvard.edu/strategy execution>

TEACHING METHOD

Teaching methods include formal lectures as well as the discussion of case studies and exercises in order to enhance students' active participation and learning. Class participation is strongly recommended.

ASSESSMENT METHOD AND CRITERIA

Grading will be based on a written exam including both essay questions, exercises, and short case studies.

NOTES AND PREREQUISITES

Office hours

Professor Rizzo's office hours are conducted through virtual meeting or onsite by previous appointment

Professor Gabay's office hours are conducted through virtual meeting by previous appointment

12. Quality and operation management

PROF. STEFANO VILLA; PROF. ANDREA CAMBIERI; PROF. PAUL GEMMEL

COURSE AIMS AND INTENDED LEARNING OUTCOMES

General Learning Objectives:

To be able to design, operate, and evaluate health care quality management systems and operations.

Knowledge Outcomes:

- Understand why quality management is needed.
- Understand impact of clinical decision making on quality of care.
- Understand impact of administrative systems on quality of care.
- Understand the impact of ancillary processes on the performance of health-care organizations.
- Understand approaches to measuring quality.
- Understand approaches that have been taken in quality management.
- Understand strengths and weaknesses of different approaches.
- Understand the design and management of health care operations.
- Understand how to design and control a supply chain management system.
- Understand how to create value with healthcare operations management.
- Understand the current trends and innovation in the organization of healthcare productions processes

Skills Outcomes:

- Ability to apply basic tools of quality improvement such as flowcharting, fishbone diagrams, statistical process control, etc. in health care settings.
- Ability to evaluate reliability and validity of criteria, guidelines, protocols, and other decision making tools.
- Ability to apply information systems for quality measurement and improvement.
- Ability to identify and prioritize opportunities for improvement.
- Ability to determine appropriate methods of improving performance and considerations in implementing such methods.
- Ability to measure the performance of hospital patient flows logistics.
- Ability to design a supply chain management system.
- Ability to implement changes in the organization of healthcare delivery processes.

COURSE CONTENT

Health care organizations are required to provide quality health care as a competitive necessity as well as a regulatory requirement and ethical imperative. The course aims firstly to give students a theoretical framework regarding the definition and measurement of quality in healthcare.

Secondly, students will be introduced to the traditional quality improvement techniques such as regulation, credentialing, education, and to new techniques, including continuous quality improvement, system design, clinical pathways, lean thinking, and performance reports.

The course will focus particularly on operations management issues. The use of operations management techniques, extensively applied in businesses of all kinds, has also become a necessity in health care. In order for managers to improve the quality and efficiency of health care delivery, or successfully launch new services or products, they must understand the design and management of health care operations.

READING LIST

Villa S. (2021) “Operations Management in Healthcare: Theory, Models and Cases”
Routledge, London.

Slides, cases studies and readings available on black-board.

TEACHING METHOD

Classes consist of both lectures and discussions. Case studies will be used to introduce students to a wide range of practical operational issues in healthcare delivery.

The course is aimed primarily at those students interested in managing health care delivery processes. It will be equally valuable for students interested in careers devoted to the definition of health policies in the public and private sectors.

Finally, a good understanding of operations and supply chain management systems is becoming increasingly important for suppliers (e.g. pharmaceutical and medical devices companies) that aim to develop beneficial and lasting relationships with health-care delivery organizations.

ASSESSMENT METHOD AND CRITERIA

For attending students, the final grade will be computed as it follows:

Individual assignment (15%)

Group work (15%)

Class Participation (10%)

Mid-term exam (30%)

Final exam (30%)

For non attending students the evaluation will be based on a single written exam on the whole program.

NOTES AND PREREQUISITES

In your own interest and of your colleagues, please try to observe the following courtesy rules:

1. Arrive in class on time; do not leave early.
2. Keep your mobiles and laptops off; do not use wireless network emailing in class.
3. Minimize wandering in and out of the classroom.
4. Participate fully in class.
5. Pull your weight in group/joint work. Do not free-ride on your colleagues!
6. Hand in assignments on time. Late submissions are not accepted.

Partecipation to all classes is highly recommended.

13. Statistics and big data

PROF. GIUSEPPE ARBIA; PROF. DANIEL ZELTERMAN

COURSE AIMS AND INTENDED LEARNING OUTCOMES

The course aims to introduce the student to the world of Big Data. The course will be divided into two parts. In the first part the student will use the R language and its packages, to apply the basic statistical methods learned in a first three-years degree course. The second part will instead be devoted to introducing statistical models and methods and machine learning approach for the treatment of large and complex amounts of data. The emphasis will be on the practical aspects of implementing the various methods and models and on the interpretation of the results.

At the end of the course the student:

- will know how to analyze structured statistical data through the use of the R language and the RStudio development environment;
- will know how to distinguish between structured and unstructured data;
- will know how to distinguish between supervised models and non-supervised models.

COURSE CONTENT

Introduction to the R package. Basic statistics (Descriptive statistics. Point and interval estimation. Test of statistical hypotheses on an average and on a percentage). Hypothesis testing on 2 averages and 2 percentages. Hypothesis testing on more than 2 averages (ANOVA) and on more than 2 percentages (CHI square). Multiple linear regression model. Nonlinear regression. Regression with dummy variables. Binomial and multinomial logistic regression. Factor analysis. Discrimination and classification. Other supervised classification models: outline of regression trees approach. Time series. Canonical Correlations.

READING LIST

The textbook of the course is the following:

- Zelterman, D. (2022) Applied Multivariate Statistics with R (2nd edition), Springer-Verlag

For the logic of the statistical analysis of Big Data it is recommended the following:

- Arbia, G. (2021) Statistics, new empiricism and society in the world of Big Data, Springerbrief in statistics, Springer Verlag

Further recommended reading:

- Wickham, H., Golemund G. (2018) R for Data Science, O'Reilly. Freely available on-line at <https://r4ds.had.co.nz/index>.

TEACHING METHOD

Theoretical lectures and lab sessions on the software R and RStudio ©

ASSESSMENT METHOD AND CRITERIA

Optional intermediate exam on PC after week 6. In the computer lab, students will perform practical exercises using R and RStudio © software. Under some exceptional circumstances, they may also carry out the test using their own PC on which the necessary programs will be installed. If successful, the intermediate exam will account for 50% of the final grade. Final examination will be carried out with the same criteria as the intermediate test. Those who will successfully pass the intermediate exam, will have to perform only the second part of the final exam. The intermediate exam can only be used in the winter session at the end of the course, in the January and February appeals.

NOTES AND PREREQUISITES

Warnings: In the first lesson of the course the professor will indicate to the students how to download the R and RStudio software and the main R packages used throughout the course and how to get the codes for their installation on their own PC.

Prerequisites: a basic course in statistics at a bachelor level including descriptive statistics, probability, inductive statistical inference (point and interval estimation) and hypothesis testing.

Recommended text for prerequisites:

Levine, J-Szabat-K. and Stephan, D. (2018) *Business Statistics*, Pearson.

THEOLOGY COURSES

Nature and aims

The Theology courses are unique to Università Cattolica. They aim to offer purposeful, well-reasoned and organic knowledge of the contents of the Revelation and of Christian life, thereby furnishing students with a more complete education in the intelligence of the Catholic faith.

The mark achieved in the Theology exams forms an integral part of each student's curriculum and will be considered by the examining board in determining the overall mark for the degree

Degrees

Theology courses are part of the curricular study plan of the degree programmes for students enrolled at Università Cattolica.

Syllabi

For the first, second and third year of the programmes, there will be a single semester-long syllabus (12 weeks per year, three hours per week).

Thr subjects are:

Theology 1: *Fundamental questions: Christological faith and the Holy Scripture*

Theology 2: *Matters of theological anthropology and ecclesiology;*

Theology 3: *Theological questions of Christian ethics and morals.*

Students can choose their Theology course from their individual iCatt page by the deadline communicated on the same page. For students who do not enrol within this deadline, the university will proceed assigning them a lecturer.

Master's degree

The two-year Master's degree programme includes a semester-long course of 30 hours, classed by Professor Alessandro Mantini, in the form of seminars and/or single-subject sessions on different topics, according to the Board of Theology Lecturers' decisions.

The course ends with a test set by the lecturer.

Students can choose the seminar course through their *iCatt* page by the deadline communicated via the same page. For students who do not enrol within this deadline, the university will proceed assigning them a lecturer.

Lecturers and course syllabi

For information on the Theology courses and lecturers, please consult the webpage:

<https://www.unicatt.it/collegio-dei-docenti-di-teologia-programma-dei-corsi-di-teologia>

The syllabi of the Theology courses can be consulted by accessing the following section of the Università Cattolica website: <http://programmideicorsi-milano.unicatt.it>.

ADMINISTRATIVE REGULATIONS

REGISTRATION RULES

1. QUALIFICATIONS REQUIRED

In accordance with art. 6 of Ministerial Decree no. 270/2004, the following may enrol on Università Cattolica degree programmes:

- second grade *secondary school graduates* (five-year or four-year: final diplomas).
- *holders of foreign educational qualifications recognised* as eligible for admission in Italian universities in accordance with the provisions issued for each academic year by the Ministry of University and Research in agreement with the Ministries of Foreign Affairs and the Ministry of the Interior.

Simultaneous enrolment at university and on higher artistic and musical courses of study (AFAM)

Simultaneous enrolment on courses of study at Universities and Higher Institutes of Musical and Choreographic Studies is allowed. The number of credits acquired for formative activities in each academic year at the two institutions must not exceed 90 per year. Those who intend to make use of this opportunity must present a study plan that meets the approval of the relevant teaching authorities at both institutions

2. PROCEDURES AND DOCUMENTS

Students who intend to enrol for the first time at Università Cattolica (Milan, Brescia, Piacenza-Cremona) must first of all read the relevant 'Admission Procedures' notices on the University website (www.unicatt.it).

The enrolment application must be filled in and submitted online (this is necessary since some parts of the application must be filled in manually and, if the student is a minor, the handwritten signature of the student or parent is also required) using the Enrolment Portal, available on the University website.

In addition to completing the enrolment form, students must pay the first instalment of the university fees and contributions, and upload all of the following documentation:

- recent passport-size photograph;
- valid ID and social security number;
- baptism certificate;
- residence document, if required (only for non-EU nationals);
- an enrolment application made via the online procedure, subsequently printed and signed by the person concerned and by all those exercising parental responsibility if the student is a minor.

Once enrolment has been completed, the University will make the Carta Ateneo+ badge available in accordance with the procedures in force.

Upon submitting their enrolment application, priests and clergy must present a declaration in which the Ordinary or their Superior authorises them to enrol at the University (written authorisation will be stamped by the Università Cattolica General Ecclesiastical Assistant or a delegate).

To present income documentation, students must use the appropriate online procedure, available via the Enrolment Portal or their personal *iCatt* page.

Students who have enrolled for a year on a university course are not entitled to a refund of fees and duties paid.

Part-time enrolment

Students who are unable to study full time due to work, family, health reasons or other justified personal reasons, may opt, at the time of enrolment or renewal of enrolment in progress, for a formative path that allows them to participate in 50% of the planned teaching activities for each degree programme year. Slight variations may be determined by the relevant Faculty Councils, depending on the individual programmes of study.

Students who intend to enrol on a part-time basis must first express this intention by filling in the appropriate form at the “*Polo studenti*” on their particular campus. This declaration of interest will be submitted to the relevant teaching structures for approval, and following their authorisation, the student may submit a formal request for enrolment on a part-time basis. All the information regarding the procedures, timing and financial aspects can be found at the “*Polo studenti*” of the respective campus.

3. VERIFICATION OF INITIAL PREPARATION (V.P.I.) - ADDITIONAL TRAINING OBLIGATIONS (O.F.A.)

In order to ensure optimal preparation for their chosen university courses, those who enrol in the first year of the various degree programmes and single-cycle graduate degree programmes will be assessed on their initial knowledge, with the exception of those who enrol onto programmes of study for which there are alternative ways of fulfilling the VPI or that require a specific admission test.

This is an assessment of predefined subject areas (for example, text comprehension and knowledge of the Italian language and mathematics), diversified according to the chosen Faculty, with regard to knowledge that is expected regardless of the diploma obtained from the secondary school of origin.

All the information regarding the VPI for each course of study, as well as the OFA (assigned to those students whose VPI outcome was deemed not sufficient in some way, and that needs to be remedied by the end of the year), can be found on the website www.unicatt.it as well as on the student personal *iCatt* page.

4. RULES FOR STUDENTS WITH FOREIGN QUALIFICATIONS

The admission of students with foreign qualifications is regulated by specific ministerial regulations, which can be downloaded from the following link: <http://www.studiare-in-italia.it/studentistranieri/>. Interested students are invited to ask the International Admissions Office of each UC campus for the relevant information.

The specific admission procedure can be viewed on the website: <http://www.ucscinternational.it/> <https://international.unicatt.it/>

5. PROCEDURES FOR ADMISSION ONTO THE MASTER'S DEGREES

In order to access a master's degree programme, students must have an undergraduate degree and meet specific curriculum requirements (ECTS credits in specific SDAs and/or specific courses). There are specific admission procedures for each master's degree programme:

- *Chronological order with possible interview or study plan evaluation*: places are reserved in the order in which students pay the first university fee instalment, until the last place has been taken, subject to a possible interview or study plan evaluation;
- *chronological order with obligatory interview*: places are reserved in the order in which students pay the first university fee instalment, following an interview, until the last place is taken;
- *chronological order with a requisite minimum average mark*: places are reserved in the order in which students pay the first university fee instalment, but subject to meeting certain curriculum requirements;
- *merit ranking*: places are reserved according to a ranking based on specific requirements;
- *admission test*: places are reserved after passing an admission test.

As admission to some master's degree programmes may involve more than one of the above procedures, it is therefore necessary to refer to the specific 'Admission Procedures' notices available on the University website.

ADMINISTRATIVE ACTS

COMPLIANCE WITH REGISTRATION DEADLINES FOR RETURNING STUDENTS (SECOND YEAR AND BEYOND)

Subject to the following notes, students who intend to enrol in the new academic year are required to make the fees payment by the deadline indicated in the *Normativa generale per la determinazione dei contributi universitari* in force at the time, and usually available on the *iCatt* personal page.

If the payment is made by the deadline, *the student will be automatically enrolled for the new academic year on the appropriate year of the programme (or supplementary-year student) with a status of “REGOLARE” (“valid”). Students who wish to change the proposed enrolment (e.g. from “supplementary-year student” to “repeating student”, or to request a change to another degree programme) must apply to the “Polo studenti”.*

If the student enrolls in the year following the first and the payment is *late but not later than December 31, 2022*, the student will be enrolled as “in corso” (“in course”) *“in debito di indennità di mora” (“owing compensation for late payment”)* – documents downloadable from the student’s personal *iCatt* page. *In this case, the student is required to report to the “Polo Studenti”* for the validation procedure. N.B. Excessive lateness means that students will not be able to present their study plan, and will consequently be assigned a study plan that cannot be modified. Beyond this date, students are not allowed to enrol as “in-course” students, but only as supplementary-year students; they are therefore not allowed to submit a study plan.

REPEATING STUDENTS

Students who have followed the degree programme on which they are enrolled for its entire duration without having registered on all the courses on the study plan, or without having obtained the relevant attendance certificates (if attendance is expressly required) must enrol as repeating students for those courses not attended or on which they did not register.

Students who, despite having completed the normal duration of the degree programme, wish to modify their study plan by inserting new courses on which they have not previously enrolled, must enrol as repeaters.

Enrolment as a repeater will be allowed only if the degree programme is still active, and in any case by 31 December 2022

SUPPLEMENTARY-YEAR STUDENTS

The following students are enrolled as supplementary-year students, unless otherwise provided for by the individual educational frameworks:

- a. students who have enrolled and attended all the required courses for the entire degree programme, until they obtain their academic qualification;
- b. students who, having enrolled on one year of their degree programme and attended the relevant courses, have not passed the required exams to access the next year of the programme, until they pass these exams or acquire the minimum number of credits required;
- c. students who, having enrolled on one year of their degree programme and possessing the necessary requirements to enrol on the following year, have not applied for enrolment by 31 December of every year or finalised said enrolment.

“IN-COURSE” REPEATING OR SUPPLEMENTARY-YEAR ENROLMENT FROM THE SECOND YEAR ONWARDS

The enrolment procedure is automatic before:

- 31 December of each year for “in-course” students (including repeating students); students who enrol after the deadline for presenting their study plan, and in any case by the aforementioned date, will be assigned a study plan that cannot be modified.

Every student enrolled at Università Cattolica and regularly registered must pay the first instalment for registration in the new academic year, and can download the *Normativa generale per la determinazione dei contributi universitari*.

In order to enrol on the subsequent year, students must pay the first instalment: payment of the first instalment is the final manifestation of the desire to enrol on the new academic year. Enrolment is thus immediately completed upon receipt of payment.

The computer records are updated as soon as the university receives notification of payment from the banking system. Therefore, it may take a few days after the payment before enrolment on the academic year is finalised.

N.B. As payment of the first instalment leads immediately to enrolment, it is not refundable under any circumstances - (Art. 4, paragraph 8, Title 1 “General Rules” of the Didactic Regulations of Università Cattolica and Art. 27 of the Student Regulations approved by R.D. no. 1269 of 4 June 1938).

There is only another obligation for students enrolled on degree programmes subject to university fees, the sum of which depends on their income: they must present their income documentation using the online application on their *iCatt* personal page, as indicated in the *Normativa generale per la determinazione dei contributi universitari* in force from time to time, and usually available on the student personal *iCatt* page.

After this date, a penalty for late delivery of administrative documents shall be paid

SUSPENSION OF STUDIES

Students may suspend their studies in order to enrol on and attend, if eligible, a post-graduate programme, a school of specialisation or a PhD programme. At the end of the suspension, students may resume the interrupted degree programme provided that the degree programme is still active.

TRANSFERRING AND LEAVING A DEGREE PROGRAMME

Students have the right to transfer or renounce the studies undertaken, under the obligation to pay any fees that may have been due at the time of application.

STUDY PLAN

The deadline for students to submit individual study plans is published on the website. For delays within seven days of the deadline, the study plan may still be submitted, subject to payment of the late-payment fee (for the amount, see “Diritti di Segreteria, indennità di mora e rimborsi di spese varie” in the *Normativa generale per la determinazione dei contributi universitari*. In the event of a longer delay, an unalterable study plan will be assigned.

EXAMS

Students must know the relevant regulations for the study plan of their degree programme, and are therefore responsible for the annulment of any exams taken in violation of these rules.

In order to avoid annulment of exams taken, it should be remembered that the pre-requisite system relating to the individual years of multi-year courses or between a preparatory course and the relative advanced or superior course is rigid and imperative.

Any infringement of the exam regulations will result in the annulment of the examination. The annulled exam will have to be repeated.

The mark assigned by the exam board, once recorded, cannot be subsequently modified: the mark is final, unless expressly renounced by the student.

An exam for which a pass mark has been recorded may not be repeated (ex Art. 6, paragraph 6, Title I “*Norme generali*” in the University Didactic Regulations).

Students are admitted to exams only if in good standing, i.e.: a) having submitted the study plan; b) having paid their fees; c) having registered for the exams as per the procedures indicated below.

How to register for exams

Registration is completed online via the *iCatt* student personal page, and must be done no later than the fourth calendar day before the exam date.

Students may not register for several dates of the same exam at the same time.

Students may cancel their registration until one day before the date of the exam.

Transferring a registration for an exam from one date to the next is only possible after first cancelling the registration for the previous date.

If the deadline for registering for an exam date has expired, it is no longer possible to cancel any registration made, and students must wait until the day after the deadline to register for the next date.

N.B.: Students will not be admitted to the exam who:

- have failed to register for the exam date by the deadline;
- despite having registered for the exam date, do not bring their university badge and valid ID to the exam;
- have failed to regularise their administrative position.

FINAL EXAM FOR GRADUATION

The didactic regulations of each degree programme allows for various ways of conducting the graduation examination. The competent teaching structure defines the procedure for each course of study (see information on the University website and in the Faculty Guide).

The current procedure is similar to that required for graduate degree programmes *with the following differences*:

1. students must present a topic that must generally be agreed upon with the relevant lecturer;
2. the task is less substantial than the one required for a traditional graduation thesis (the amount of work is proportional to the number of university credits attributed to the final examination within the framework of each degree programme). Student production will therefore be limited in length;
3. the title of the final production must be obtained according to the rules established by the Faculty Council (*direct assignment by the lecturer; through a thesis desk in the various forms available; other*) allowing sufficient time for students to develop and complete their production within the deadline for applying for admission to the final exam. This deadline for each graduation session will be published on the webpage of each individual Faculty;

4. the application for admission to the final examination must be submitted no less than 45 days before the beginning of the chosen session. Students may only submit this application if the number of exams and/or the number of ECTS credits still to acquire is below the limit specified by the relevant Faculty;
5. the final student production must be sent to the relevant lecturer in PDF format via the personal *iCatt* page, by going to “*Segreteria on line – prova finale – Invio prova finale*”, as per the procedures and deadlines provided and published on the webpage of each Faculty. The deadline for uploading the production cannot be postponed. The relevant lecturer may request a paper copy.

FINAL EXAM FOR MASTER’S DEGREES

For the final examination to obtain their graduate degree, students must submit and discuss a written dissertation on a topic previously agreed upon with the subject lecturer.

In order to be admitted to the final exam, students must:

- a. choose and present a topic checking the curricular/time requirements;
- b. submit the application for admission to the final examination, verifying the curricular/time requirements;
- c. submit the final paper.

1. In order to submit *the thesis topic*, the following must be observed
 - submission deadlines;
 - curricular requirements.

The topic of the final dissertation must refer to a course included in the Study Plan, and the title must be agreed with the relevant lecturer. To obtain approval of the topic, the lecturer must be contacted. The topic must then be entered in the personal *iCatt* page (*Segreteria online – Prova finale*) by the deadline indicated in the “Appelli lauree quadriennali e magistrali” section of the University website.

Any delay will result in the thesis being postponed to the next graduation call.

2. In order to submit *the application for admission to the final examination*, the following must be observed
 - submission deadlines;
 - curricular requirements.
3. In order to submit *the application for admission to the final examination*, students must:
 - complete the application for admission to the final examination (graduation application) on their personal *iCatt* page (*Segreteria online – Prova finale*);

- print the application, sign it and affix a revenue stamp;
 - have the application authorised by the relevant lecturer by e-mail;
 - print and pay the graduation fee/contribution;
 - upload the following documents in the format indicated:
 - * copy of the application for admission to the final examination, signed and stamped (pdf format)
 - * copy of the receipt of payment of the graduation fee/contribution for graduands (pdf format);
 - * copy of the authorisation email sent by the relevant lecturer (jpg format).
- Any changes to the title of the final dissertation approved by the lecturer must be made when the application is filled in and printed. The title in the application must therefore be definitive as no further changes may be accepted.
4. The student will receive the invite to the final examination exclusively via his/her personal *iCatt* page in good time and in any case no later than the tenth day prior to the graduation session.

Notes

1. No students will be admitted to the graduation examination if they have failed to meet the deadlines published on the webpage of their Faculty.
2. *Graduating students* must have taken and recorded the marks *for all other exams at least one week before the start of the graduation exam session*.
3. Graduating students must inform the supervising professor in good time if, for whatever reason, they are unable to attend the examination for which they have applied. In such cases, they will have to submit a new application for admission to the graduation examination.
This information must also be sent to the “*Polo studenti*” by filling in the “Information request” form on the student’s personal *iCatt* page.

DEGREE EXAMS RELATING TO COURSES OF STUDY PRIOR TO THE ENTRY INTO FORCE OF MINISTERIAL DECREE NO. 509 OF 3 NOVEMBRE 1999

The procedure is essentially identical to that described above for the final graduate degree examination, unless otherwise stated in the Faculty Guide. The form for admission to the graduation examination relative to 4 or 5-year degree programmes (established prior to D.M. 509/99) may be submitted only if the number of exams still to complete does not exceed the maximum specified by the Faculty in question.

CESSATION OF STUDENTS STATUS

The following students may not enrol for a new academic year and, therefore, **cease to be students**: students who have not enrolled for five consecutive academic years or students who have not passed exams for five consecutive academic years after the normal duration of the programme of study. The above provision does not apply to students who only have the graduation exam left to take, or who have obtained all credits except those awarded for the final examination.

Students who, despite having passed all the exams on their study plan without renewing their enrolment for at least five consecutive academic years, only have their final dissertation or thesis to complete and wish to complete their studies within the academic year 2022/2023, must make the following payments by and no later than 31 December 2022:

- the recognition fee for five academic years regardless of the number of academic years of non-renewal;
- the first instalment to fully cover university enrolment fees for the academic year 2022/2023 (therefore not including the second and third instalments).

They must also pay the graduation fee for the relative graduation session.

WITHDRAWING FROM THE COURSE OF STUDIES

Students may **withdraw from their current course of studies** (whilst remaining under the obligation to pay the fees due at the time of submitting the withdrawal application) by printing the withdrawal application in duplicate from their personal *iCatt* page, affixing the appropriate revenue stamp and handing in the withdrawal application, transcript of records (*libretto*) (if received) and badge (as long as banking services were never activated in the case of Carta Ateneo +).

The withdrawal request must be made clearly and explicitly in writing without any conditions, terms or clauses limiting its effectiveness. Students who have withdrawn from their studies may, on request, be issued certificates for their academic achievement thus far, as long as they are in good standing administratively.

TRANSFER TO ANOTHER DEGREE PROGRAMME

Fully enrolled students who wish to move to another degree programme in the same or another Faculty within Università Cattolica must use the online procedure via their personal *iCatt* page.

Interested students are also invited to consult the notices published on the university website to check the deadlines for submitting **the necessary documentation** to the Enrolment Portal.

TRANSFERS

Transfer to another University

Fully enrolled students may transfer to another university, **after first consulting the University Didactic Regulation, from July 15 to October 31 of each year (unless the final deadline of the new university is before October 31) by submitting a specific application to the “Polo Studenti”.**

Students who request a transfer to another university after the deadline set by the regulations and in any case no later than 31 December are required to pay an operating fee directly proportional to the delay in submitting the application. In any case, the transfer may not take place without the authorisation of the new university.

To obtain the transfer, students must first:

- verify their university career on *iCatt* using the “*visualizzazione carriera*” (“Career view”) function and report any corrections or additions to the Polo Studenti;
- obtain via *iCatt* the self-certification form for exams they have passed.

The application requires the appropriate revenue stamp and must be accompanied by the following and meet the following conditions:

- * self-certification form via *iCatt* for exams passed;
- * students must have no outstanding university fees due at the time of submitting the transfer application;
- * receipt for the payment of the appropriate secretarial fee.

From the date of submission of the transfer application, no further exams are permitted.

Exams taken and not yet registered by that date will not be registered.

Students who have transferred to another university may not return to Università Cattolica until one academic year after the transfer date. Students who obtain authorisation to return to Università Cattolica are admitted to the programme year relative to the exams passed, regardless of previous enrolment. They will also be required to pass any additional tests that the Council of the Faculty in question deems necessary for bringing their preparation in line with that of Università Cattolica students.

Transfer from another University

Students already enrolled at another university who wish to enrol at Università Cattolica must do so via the Enrolment Portal. Interested students are also invited to consult the university website to check the modalities and the deadlines for submitting the necessary documentation.

Students must in any case submit a request for transfer.

“EX NOVO” ENROLMENTS WITH POSSIBLE PROGRAMME SHORTENING (RESUMPTION OF UNIVERSITY CAREER)

Students who have withdrawn from their studies or whose student status expired before 1 November 1999, and students whose status has lapsed may request to enrol “ex-novo” on the programmes of study provided by the new regulations.

The competent teaching structures will determine which credits acquired during their previous university career can be recognised

Registration on individual courses

In line with Art. 11 of the University Didactic Regulations, the following may, subject to authorisation from the relevant teaching structure, register for individual courses and take the exams for these courses on the exam dates of the academic year of their respective attendance:

- a. students enrolled at other universities authorised by the university to which they belong and, if they are foreign citizens, in compliance with current regulations and procedures;
- b. graduates interested in completing their current formative curriculum;
- c. other interested parties, previously authorised by the Council of the relevant teaching structure, provided that they possess the necessary qualifications for registering on the course of studies to which the individual courses relate.

A registration fee plus a contribution for each course is due (see *Normativa generale per la determinazione dei contributi universitari*).

The above students may enrol on individual courses corresponding to a number of university credits established by the Council of the competent teaching structure and, as a rule, not exceeding 30 per academic year, for no more than two academic years; any justifiable exceptions will be discussed by the Council of the relevant teaching structure.

The application must only be submitted to the “Polo Studenti” once per academic year - and pertains to courses belonging to the same Faculty (or borrowed from it) - by the following dates: if the course/s begin/s in Semester 1, by 7 October 2022; if the course/s begin/s in Semester 2, by 10 February 2023.

NOTES REGARDING ADMINISTRATIVE PROCEDURES

To protect personal data, students are reminded that, unless otherwise specified, they *must go in person* to the relevant counters to carry out the administrative procedures. Please note that some operations related to administrative paperwork are possible online via the student's personal *iCatt* page.

In order to complete the paperwork, students are discouraged from waiting until the final days before the respective deadlines.

OFFICE HOURS - POLO STUDENTI

The "Polo Studenti" offices are open to the public Mon-Fri only, as per the timetable indicated on the website (www.unicatt.it).

The "Polo Studenti" offices are closed on the Feast of the Sacred Heart, from 24 to 31 December, for two consecutive weeks in August and on Good Friday. Appropriate notice will be given of any further closures by means of notifications on the website.

HOME ADDRESS OF STUDENTS FOR VARIOUS COMMUNICATION

It is essential that both the students' residence and home addresses are updated promptly in case of any changes: this update must be made directly by the student using the appropriate online function on their personal *iCatt* page.

CERTIFICATES

Certificates for students' university careers are, as a rule, issued with stamp duty on application, except in the cases indicated by the legislation in force whereby exemption or self-certification is specifically permitted.

In self-service mode, students can produce digital format and signature certificates.

ISSUE OF QUALIFICATIONS AND COPIES

To obtain their original degree certificate, students must follow the instructions on the letter of summons to the graduation examination.

Students who lose their original certificate may apply to the Rector - by means of a special application form, subject to stamp duty, accompanied by documents proving the loss (a report to the relevant judicial authorities) - for a duplicate of the degree certificate upon payment of the required issuing fee.

Original certificates are delivered to the person concerned to the address on record at the time of application.

UNIVERSITY FEES

Information on university fees as well as financial benefits is available on the Università Cattolica website and on students' personal *iCatt* pages.

Students who are not in good standing in terms of fee payment and submission of required documents will not:

- be enrolled on any course year, repeat year or supplementary year;
- be admitted to exams;
- be able to transfer to another degree/diploma programme;
- be able to obtain a transfer to another university;
- be able to obtain enrolment certificates;
- be able to withdraw from the course of study on which they are enrolled.

Students who resume their studies after interrupting or suspending them for one or more academic years must pay fees for the academic year in which they resume their studies, while for the years relating to the period of interruption or suspension, they only have to pay a recognition fee. Students who, resuming their studies at the beginning of the academic year, request access to the exam dates of the extraordinary session between January and April, scheduled for those students attending the previous year, are also required to pay an additional fee.

As a rule, all instalments must be paid on the student's personal *iCatt* page (approximately 20 days before the instalment is due).

Students who enrol in the first year of the programme or who register for degree programme admission tests in these cases only, students may pay the first instalment and admission test fee by credit card via the Università Cattolica website.

Bank transfers are not accepted as a means of payment.

Current students shall access their personal *iCatt* page to pay the first and following instalments.

The fine for late payment of university fees is determined on a yearly basis and specified in the *Normativa generale per la determinazione dei contributi universitari*. Students are advised to keep all receipts of payments made until the end of their studies for potential verification purposes.

CODE OF CONDUCT

In line with the provisions of the university system and the Università Cattolica Code of Ethics, students are required to behave in a manner that upholds dignity and honour and is in harmony with the spirit of the university.

In the event of non-compliance, the university system provides for the possibility of disciplinary sanctions of varying degrees, depending on the seriousness of the infractions (see art. 18 bis - *Competenze disciplinari nei riguardi degli studenti, Title 1 "Norme generali" of the University Regulations*).

Any imposition of sanctions shall be ordered by the competent academic bodies on the basis of proceedings which ensure the right of defence of the persons concerned, in accordance with the general principles in force on the matter.

UNIVERSITY SAFETY REGULATIONS: SAFETY, HEALTH AND ENVIRONMENT

In terms of health, safety and the environment, a strategic objective of Università Cattolica del Sacro Cuore is to safeguard its employees, academic and other staff, researchers, doctoral students, trainees, scholarship holders, students and visitors, as well as to protect the environment and the equipment used in conducting its institutional activities, as provided for in the mission of the institution.

Everyone, lecturers, students and administrative staff, is responsible for the collective pursuit of this objective, constantly checking that the necessary conditions for safe and healthy work environments are maintained, and that everyone knows and constantly respects the procedures. Where this is not the case, everyone is responsible for reporting potentially dangerous situations to the relevant contacts and collaborating with the departments that are working to continually improve practices and procedures at the university.

Students can also help improve safety (in compliance with regulations in force), in the following ways:

- a. following the rules and instructions issued for the purposes of individual and collective protection;
- b. using machinery, equipment, tools, substances and safety devices correctly;
- c. using available protective devices appropriately;
- d. immediately reporting problems with equipment and devices, as well as any other hazardous conditions, to the appropriate contact person, and by working directly, in emergency situations, within their competences and possibilities, to eliminate or reduce these problems or hazards;
- e. not removing or tampering with any safety or monitoring devices or signage without authorisation;
- f. not undertaking, on their own initiative, any operations or manoeuvres for which they lack the skills or authority, or that could compromise their safety or that of others;
- g. completing the relevant health checks when conducting tasks identified by the health plan doctor;
- h. helping ensure that all duties imposed by the relevant authority, or otherwise necessary to protect the health and safety in the university, are respected;
- i. avoiding dangerous behaviour for their own safety and that of others.

Some examples of ways in which students can help maintain safety conditions:

- in corridors, on stairs and in atrium: do not run;
do not leave objects that may obstruct walkways and entrances/exits;
keep walkways and emergency exits clear;
- university building/departments, laboratories and libraries
follow staff instructions closely;
scrupulously follow the indications of personnel in charge;
read the rules of use, instructions and safety notes before using any apparatus, equipment or other;
do not use own equipment without the specific authorisation of the personnel in charge;
only engage in educational or otherwise authorised activities;
- where signage dictates
do not smoke or use naked flames;
do not enter premises marked as out of bounds;
- in emergencies
remain calm;
immediately report the emergency to staff present and/or using the telephone numbers indicated;
only use fire safety and protection equipment only if you are reasonably certain you can put out the fire (small fires) and always ensure there is a safe and visible escape route

- **in the event of evacuation (announced by loud speaker)**
 - follow the instruction of the emergency staff;
 - do not use lifts;
 - leave the building as quickly as possible by following the appropriate signage;
 - go to the closest assembly point (indicated on the plans on display in the building);
 - check that everyone who was present is now safe;
 - if anyone is unaccounted for, inform a member of the emergency team

During an earthquake

- take shelter under a table;
- take shelter under doorways;
- stay away from bookshelves or items of furniture that could fall on you;
- stay away from windows and glass doors;
- stay in the room until the shaking has stopped;
- if you are outdoors. move away from buildings, trees and electrical wires.

PEOPLE UNABLE TO LEAVE THE BUILDING OR IN DIFFICULTY DURING AN EMERGENCY

Make sure that everyone has received the evacuation message and is aware of what is happening; accompany people with diminished mobility or sensory abilities outside the building, or see that someone else does so; if it is not possible for them to leave the building, see that they are transported, whilst waiting for assistance, to one of the suitable locations (calm space or safe place) indicated on the emergency maps, or in places not directly affected by the emergency; report the presence of people with particular difficulties on EMERGENCY NUMBER 2000 and/or to the emergency officer at the assembly point, identifying the person’s location inside the building if it was not possible for them to reach the assembly point.

RESTRICTIONS

Smoking is prohibited on all Università Cattolica del Sacro Cuore campuses, subject to the limits and in accordance with the provisions of the relevant legislation.

200-HOUR COLLABORATIONS

If you have entered into an employment contract with the university: complete the online safety training by logging in with the credentials provided; take care of your safety and that of other people in the workplace; always follow the instructions provided by the relevant contacts for your activity.

If you think you may have a health problem caused, even indirectly, by the work you are doing, request a meeting with the relevant doctor at the university.

COVID-19 PREVENTION MEASURES

With reference to the current epidemiological situation, it is recommended to examine the measures put in place by the University to contain the risk of contagion from SARS-CoV-2, available at the following address:

<https://www.unicatt.it/info-covid-19>

EMERGENCY

The emergency plan of Università Cattolica del Sacro Cuore for the Rome campus envisages the activation and intervention of the Fire Safety Unit of the Fondazione Policlinico Agostino Gemelli which, operating 24 hours a day even on public holidays, is in charge, in case of need, of circumscribing a negative event by coordinating interventions (fire, flooding, gas leaks, resolution of dangers caused by accidental breakages of any kind). Anyone who notices an anomalous situation that could lead to an emergency, a fire outbreak, or another dangerous situation, is required to alert the Emergency Management Centre, using the telephone number dedicated to the emergency (internal telephone number 4000 or by dialling 06-30154000 from any other telephone), giving details, their position, the type of danger or emergency already underway, the number of people involved, and an estimate of the seriousness of the situation. The person reporting the emergency must not close the communication until authorised to do so by the operator of the Emergency Management Centre.

All students must comply with the instructions given by the emergency coordinator. Plans showing escape routes in the event of an emergency and the rules of behaviour to be adopted are posted in all common transit areas.

ACCIDENTS AT WORK

In the event of an illness or accident that requires urgent medical attention, dial 5555 (Medical emergency).

Students who suffer an accident on the Rome campus of the Università Cattolica del Sacro Cuore are required to notify the person in charge and to go to the Emergency Room to seek medical assistance from the SSN doctor they trust, should they require treatment. For minor medication, the injured person may use the first-aid kits available in the various offices.

In any case, the injured person must comply with the accident management procedure in force in our organisation¹.

Given the specific nature of the injury and its possible repercussions, the way in which post-exposure injuries are managed requires the use of different resources and methods than in the case of injuries in general; in this case, therefore, the student must follow the Operational Instruction issued by the Fondazione Policlinico Gemelli.

ASSAULT OR THEFT

Following an assault or theft, the useful number for such emergencies is 06/30153373 Vigilance and Access Control Services (security guard).

¹ Procedure of the Università Cattolica del Sacro Cuore – Rome campus entitled: "Gestione infortuni" ("Accident Management"); Operating Instructions of the Fondazione Policlinico Universitario Agostino Gemelli entitled: "Gestione post-esposizione occupazionale a materiale biologico" ("Management after occupational exposure to biological material").

REFERENCE UCSC SERVICES AND THEIR PHONES

Health Emergency	06/301555
Emergency Management Centre	06/30154000
University Prevention and Protection Service	06/30154256/5809
Fire safety unit	06/30155311/4683
Surveillance and Access Control Service	06/30153373
Management and maintenance	06/30155000
First Aid	06/30154030/4031/4034
Health physics	06/30154997/4772

SINGLE EMERGENCY NUMBER FOR EXTERNAL ASSISTANCE: 112

IMPORTANT!

After calling the single emergency number, you must also inform the internal emergency service by calling 4000 to coordinate assistance.

UNIVERSITY STAFF

Università Cattolica staff are at the service of the students and users of the university. Staff are committed to ensuring the best conditions so that all users can make the most of the university's services and facilities.

Administrative, library and logistics staff are authorised to enforce the regulations related to using university spaces and facilities when performing their duties on the university premises.

In line with Article 1269/1938, all staff, particularly security staff, janitors and reception staff can exercise prevention and inhibition activities in response to any disturbance to the internal order of the university. This involves writing a statement which is valid outside the university as well, being of equivalent status to reports written up by public law enforcement officers and officials.

REGULATIONS FOR GUARANTEEING THE OPERATION OF ESSENTIAL SERVICES

(Rules on exercising the right to strike in essential public services and the protection of constitutionally protected personal rights - Acts No 146/1990, No 83/2000 and subsequent amendments and additions)

As part of the essential educational services provided by universities, the continuity of the following essential services must be guaranteed in order to ensure constitutionally protected values and rights are respected:

- enrolment and enrolment onto university courses
- final exams, thesis defence and state exams;
- final exams of annual and/or semestral education cycles;
- certification of participation in competitions in documented cases of urgency owing to the expiry of deadlines.

ONLINE SERVICES

Student's personal online page (iCatt)

The student has a personal *iCatt* web page which provides access to administrative services and information about courses (e.g. timetables, exam sessions, announcements etc.). Through *iCatt* web page the student can:

- submit the study plan
- apply for exams
- monitor already taken exams and outstanding exams
- update income and tax information.

Moreover, the *iCatt* homepage will show communications from the Student Services via an online notice board.

The student can access *iCatt* by logging on <http://icatt.unicatt.it> with his/her personal login and password.

The student can send an e-mail to gestione.iam@unicatt.it to receive technical assistance on the access and use of *iCatt*.

Teacher's personal page

The student can find information about teachers' e-mail, office hours, courses provided and course programs on the teacher's personal page, available on the University website <http://docenti.unicatt.it>

Blackboard

Blackboard is a platform accessible at <http://blackboard.unicatt.it>. It is not only a download area of course support materials (slide lessons, exercises, exam topics, ...) but a real online interaction room for students and teachers.

The student can access Blackboard courses directly from his/her *iCatt* page.

For more information or questions related to registration to Blackboard, the student can refer to the Help section on the I-Catt page or send an e-mail to support.blackboard@unicatt.it

STUDENT SERVICES AND CONTACT DETAILS

Information about the following services can be found online at <http://roma.unicatt.it>:

- Library: biblioteca-rm@unicatt.it; documenti.delivery-rm@unicatt.it; tel. 06/30154264 - 4339;
- Advising and Tutoring: tutordigruppo-rm@unicatt.it; tel. 06/30154750;
- Internships and Placement Service: stage.placement-rm@unicatt.it; tel. 06/30154480;
- Global Engagement and International Education (international student mobility programmes) ucsc.international-rm@unicatt.it; tel. 06/30155819;
- ILAB – Centre for innovation and development of university teaching and technologies (ICT courses and Blackboard): <http://blackboard.unicatt.it>;
- SeLdA – University Language Service (language courses): gerit.beger@unicatt.it; tel. 06/30156812;
- Student Support Services - Disability and Learning Differences (at the Student Services Centre – *Polo Studenti*): segreteria.disabili-rm@unicatt.it; segreteria.dsa-rm@unicatt.it;
- Public Relations Office: rapporti.pubblico-rm@unicatt.it;
- EDUCatt – Università Cattolica del Sacro Cuore Organisation for the right to academic education (health service, student cafeterias, housing solutions, book loans) info.rm.dsu@edu-catt.it; tel. 06/3050120;
- Pastoral Centre: centro.pastorale-rm@unicatt.it; tel. 0630154258;
- On-campus Student Work: collaborazione.studenti-rm@unicatt.it;
- Student Records and Academic Support Services gestione.carriera.studenti-rm@unicatt.it;
- Cultural and Recreational Activities;
- Psychological Counselling Service;
- Youth Health - Front Office.

GENERAL INFORMATION

Office hours

Student-teacher meetings are an important exchange opportunity between teachers and students outside the classroom to clarify doubts about the classes and to ask for advice on how to best deal with challenges that the student may encounter. A meeting can be scheduled throughout the academic year according to the instructions on the instructor's personal pages.

Covid-19 emergency

The information contained in this Guide are referred to ordinary university activity, with physical attendance. If – in connection with the containment of the Covid-19 health emergency - activities and services cannot be provided in full or in part, the University will implement measures and tools (blended teaching, interaction with teachers and tutors remotely through the Blackboard platform and other applications, etc.) to avoid their disruption. All the necessary information will be provided to students through notices on the *iCatt* personal page and on the University's website.

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del Sacro Cuore

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