UNIVERSITA' DEGLI STUDI DI MILANO
MANIFESTO DEGLI STUDI A.A. 2020/21
LAUREA MAGISTRALE IN
MOLECULAR BIOLOGY OF THE CELL (Class LM-6)
Enrolled from academic year 2015/2016

GENERALITA'	
Classe di laurea di appartenenza:	LM-6 BIOLOGIA
Titolo rilasciato:	Dottore Magistrale
Durata del corso di studi:	2 anni
Crediti richiesti per l'accesso:	180
Cfu da acquisire totali:	120
Annualità attivate:	1° , 2°
Modalità accesso:	Libero con valutazione dei requisiti di accesso
Codice corso di studi:	F9Y

RIFERIMENTI

Presidente Collegio Didattico
Prof. Mirko Baruscotti

Coordinatore Corso di Laurea
Prof.ssa Luisa Guerrini (luisa.guerrini@unimi.it)

Docenti tutor
Academic guidance advisors- Katia Petroni and Saverio Minucci
Erasmus and International Mobility advisors- Cristina Bonza and David Horner
Study plan advisor- Monica Beltrame
Internship advisor- Lucio Conti
Thesis advisors- Luisa Guerrini and David Horner
Master's Degree admission advisor- Luisa Guerrini
Credit Recognition advisor- Luisa Guerrini

Sito web del corso di laurea
http://mbc.cdl.unimi.it

Academic Services Office
Address: via Celoria, 26, 20133 Milan – 2nd floor, A Building. Presently by email only. Email: cl.biol@unimi.it

International Students Office
Address: via S. Sofia, 9/1, Milan. http://www.unimi.it/en/international/coming-abroad/international-students-office-welcome-desk
Email: international.students@unimi.it

Matriculation and enrollment
http://www.unimi.it/en/study/bachelor-and-master-study/degree-programme-enrolment/enrolment-masters-programme

MBC email
Email: mbc@unimi.it

Representative for disability services and specific learning disabilities (appointed by the Academic Board)
Dr.ssa Diletta Dolfini Email: diletta.dolfini@unimi.it

Student Desks
Address: via Celoria, 18, 20133 Milan. Tel. 0250325032 https://www.unimi.it/en/node/360 https://www.unimi.it/en/node/359

CARATTERISTICHE DEL CORSO DI STUDI

Premessa
The Department of Biosciences (DBS) at the Università degli Studi di Milano is the reference point and the main Institution responsible for the MBC Master’s Degree course.

Obiettivi formativi generali e specifici

The MBC course covers all principal areas of the LM-6 Biology course, with a unique focus on biomolecular subjects that distinguishes it from other courses of the same LM Class. The main goal of the MBC course is to train biologists in advanced biomolecular research, to address present and future scientific challenges.
In-depth and up-to-date knowledge will be provided for the following subjects: molecular analysis of the genome; regulation of gene expression; structure and function of biological macromolecules and their interactions in supramolecular complexes; cellular communication, signal perception and transduction, metabolic regulation, biomolecular engineering and computing. Both theoretical and practical aspects of biomolecular research will be addressed. Graduate students will learn to apply novel and emerging research technologies/approaches, cutting-edge data acquisition systems and analysis, and will have hands-on experience with top-level nanotechnology, hosted in the research laboratories of the DBS. MBC graduates will be well-equipped to enter further, postgraduate-level education programmes.

Risultati di apprendimento attesi

According to the Dublin Descriptors, expected learning outcomes are:

KNOWLEDGE AND UNDERSTANDING. Comprehensive knowledge in specific areas of molecular and cellular biology: protein biochemistry, microbiology and genetics, biomedicine and bioinformatics.

APPLYING KNOWLEDGE AND UNDERSTANDING. The student will gain:
- Expertise in carrying out research in the fields of molecular and cell biology, genetics and microbiology and in related research areas, e.g. chemistry, biomedicine and bioinformatics.
- Analytical skills to investigate complex bio-molecular systems using state-of-the-art techniques and instrumentation.
- Competences in experimentally-derived data analysis and interpretation.
- Learning up-to-date methodologies for biological analysis and data processing; the development of interpretative models will be assessed throughout the Master’s thesis.
- Training and awareness of bio-safety aspects and the appropriate procedures for chemical waste management, and knowledge of related laws and regulations.

DECISION-MAKING. The student will acquire skills in:
- Critical evaluation of research data, e.g. data interpretation and identification of the appropriate logical approach and methodological strategies to gain further experimental and theoretical knowledge during research development.
- Experimental planning, including time management and the application of appropriate scientific methods to different biomolecular problems.
- Development of innovative research strategies.
- Critical analysis of scientific literature and data.
- Awareness of ethical aspects of scientific research and responsibility

COMMUNICATION SKILLS. The student will gain experience in:
- Scientific dissemination and the ability to adopt an appropriate use of scientific English, in order to communicate with both specialist and non-specialist audiences.

LEARNING SKILLS. The student will:
- Receive adequate training to become autonomous in his/her scientific thinking, planning and professional development, and he/she will acquire competences in the independent management of his/her research projects and related team working skills.
- Build strong foundations in order to understand the continuous technological advances in general or specialist areas of molecular and cellular biology.

All above-mentioned skills will be gained through attending lectures, independent study, and through an experimental internship that will lead to the preparation of the final dissertation. The achievement of course-specific educational goals will be assessed:
- by regular written and/or oral exams
- during the experimental thesis, assessed by continuous discussion of research progress/results with the scientific team and tutor.
- by the thesis committee who will assess overall presentation skills and the ability to proficiently write and discuss his/her work in proper scientific terms.

Profilo professionale e sbocchi occupazionali

The MBC graduate will acquire specialized and in-depth knowledge in molecular and cellular biology, and consolidated competences in the application of state-of-the-art analytical methodologies and experimental techniques to address a variety of biological challenges. This highly specific, yet multidisciplinary, profile will offer MBC graduates professional employment opportunities in both the public and private sectors, operating in biology-related fields. In particular, MBC will provide the necessary training to allow graduate employment in the following sectors:
-basic and applied academic research, in universities and other public/private research centers;
-environmental management /protection sectors;
-biomedical, agro-bio and pharmaceutical industries, and related professional sectors;
- promotion and development of innovative scientific technologies;

- biotechnological research and development in the healthcare, pharmaceutical and food industries
- editorial, intellectual property and scientific dissemination sectors;
-project management in the biotech industry;
- Biology teaching in adherence to Italian laws;
The fact that MBC is carried out entirely in English, will allow graduates to engage with public/professional sectors in both a national and international setting.

MBC graduates may be legally admitted to the “A Section” of the National Biologists Register. Furthermore, graduates will be fully qualified to apply for entry to national/international Ph.D. courses and other postgraduate specializations. Indicatively, the different employment sectors accessible to Master graduates, with reference to the intellectual, scientific and highly-specialized professions are here-listed:
• Biologists and related professionals
• Researchers and technicians graduated in the area of biological sciences (after passing the competitive exam).

Conoscenze per l'accesso

Admission Requirements.
The admission to the MBC course is subject to curricular requirements and a demonstrated background knowledge in suitable disciplines related to the course (DM 270/04). Admission is open to:
- Graduates in Biological Sciences (Class L-13) from any Italian University that follows CBUI rules, as adequately certified. In this case, credits (CFU or Ects) acquired by the candidate as an undergraduate will be fully recognized and will meet the curricular prerequisites. The CBUI guidelines describe the compulsory SSD (scientific areas) and the related recommended number of CFUs (min-max): 66-96 CFUs in biological subjects (BIO/01,BIO/02,BIO/04, BIO/05,BIO/06,BIO/07, BIO/09,BIO/10,BIO/11, BIO/18, BIO/19); 12-15 CFUs in chemistry-based subjects (CHIM/01, CHIM/02, CHIM/03, CHIM/06); 15-18 CFUs in mathematics/physics and computer science subjects (MAT/01-09, FIS/01-08 e INF/01).
- Biological Sciences (Class L-13) graduates from Universities that do not follow CBUI guidelines, Biological Sciences (Class L-12) ex DM509/99, or any other class that meet suitable curricular requirements, including graduates from foreign Universities that possess a title equivalent to the 1st level degree in Italian law. Curricular requirements are the acquisition of a minimum of 93 CFUs distributed in equivalent scientific areas (SSD), as described above, for Biological Sciences (Class L-13) that are in line with the criteria set by CBUI.

Students lacking adequate curricular requirements should contact the Coordinator of the Master?s course well in advance, to plan the acquisition of the requested CFUs prior to the application deadline. Any lacking CFU can be acquired by passing the relevant exams and thus acquiring the credits at the University of Milan or any other University. Only students who possess the prerequisites will be invited to the interview.
The admission exam will consist of a formal interview (that can be arranged online) with an Evaluation Committee that will verify the candidate?s background knowledge in Biology. A self-assessment test of theoretical knowledge will be made available to students prior to their interview to verify their level of knowledge.
For all students, knowledge of the English language must be at least B1 level ("lower intermediate") according to the Common European Framework of Reference (CEFR) for Languages or equivalent certification. The proficiency in scientific English will be verified by the committee during the interview.

Knowledge Assessment.
The prerequisite to enter the MBC Master?s Degree program is an adequate knowledge of the fundaments of biological disciplines as certified by the possession of the required CFUs as described in paragraph ?Admission Requirements?. Knowledge will be verified by: 1) evaluation of the bachelor study program and 2) an interview with the Admission Committee, composed of teaching members appointed by the Academic Board. The interview will evaluate the expertise of the candidate in topics related to the MBC degree, and will ascertain proficiency in the English language.
The committee will evaluate the candidate on a 100-point scale and award:
- 25/100 points for the graduation grade;
-10/100 points for the curriculum vitae (degrees with higher number of CFUs in biology related disciplines will obtain more points; the same applies to the presence of extra elective courses, Erasmus experience, others,...)
- 65/100 for interview performance
The minimum requirement for admission is 60/100 and an adequate English proficiency level (equivalent to B1 level).

For the academic Year 2020-2021 applicant interviews will be held online, for those who submit their application by the deadline (see above, ?Application Form?), on the following days:
- 17th September 2020 at 14.30, for graduated students;
- 6th November 2020 at 14.30 for students that graduate in September and October;
- 12th January 2021, at 14.30, for students that graduate in December. Students must bring official proof of their identity (identity card or passport).
Upon graduation, students not from University of Milan, must present certification of their awarded degree to the Administrative Office or email via https://informastudenti.unimi.it
Foreign students who are not resident in Italy and who possess a foreign bachelor?s degree title, will be invited to an online interview. Foreign students who reside in Italy are classed as Italian citizens and must undergo the same evaluation. Check for updates on interview dates and times on the website: https://mbc.cdl.unimi.it

Struttura del corso

The MBC Master's has a duration of two years, each year is subdivided into two semesters.
120 educational credits (CFU) are required for Master completion. Each credit corresponds to a standard student workload of 25 hours, including:
- 8 hours of lectures followed by 17 hours of individual study;
- 16 hours of practical labs followed by 9 hours of individual study;
- 25 hours of training activities related to the thesis internship.

The curriculum includes mandatory, guided-and elective courses. Subject choices are made as follows:
• 7 mandatory courses (45 CFUs in total);
• 3 guided-choice courses on principal subjects (18 CFUs in total);
• 2 elective courses (12 CFUs in total), which may be freely selected by the student from all the courses offered by the University (including the MBC courses in the guided-choice list, which have not already been selected), provided that they are coherent with the study plan. If unavailable in English, elective courses may be taken in Italian if the student is proficient in the Italian language.

During the first year (I and II semesters), students are encouraged to acquire credits by following at least 8 distinct courses. 3 CFUs will be assigned for English language skills.
The second year will center around the experimental research activities related to the thesis consisting of 12 CFUs of initial laboratory training and 30 CFUs related to the final thesis exam.

Obiezione di coscienza

During the MBC Master's, the use of animals for teaching purposes is forbidden, according to law: art. 5f of the Legislative Decree 26/2014. Such procedures are allowed during the traineeships for thesis preparation. However, they must be carried out exclusively by authorized staff, to whom the Legislative Decree 26/2014 does not apply. According to Italian law n. 413, October 12 1993, "Norme sull'obiezione di coscienza alla sperimentazione animale", students have the uncontestable right to conscientiously object to their participation in any animal experimentation. In this case, the Teaching Board will suggest alternative traineeships, that are consistent with the educational goals of MBC, to ensure the correct acquisition of the study credits necessary to graduate.

Area didattica

Classrooms are located in the University buildings in: Via Celoria, 26 (Biology buildings); Via Celoria, 20 (Teaching Sector); Via Golgi, 19. Most laboratories are located in the Department of Biosciences, Via Celoria 26, 20133 Milano.

Biblioteche

The Biology, Chemistry, Physics and IT library is located in Via Celoria, 18, Milano. See: http://www.sba.unimi.it/en/libraries/13453.html

Tutorato

Tutors will provide students with academic advice, guidance on their course choices and advice on where and how to seek help with personal issues.

Attività obbligatorie

All above-mentioned training activities, including mandatory, guided and elective courses, and research thesis activities, are compulsory for completing the Master's.

Prove di lingua / Informatica

In order to graduate, students must demonstrate an English language proficiency at level B2 in the Common European Framework of Reference for Languages (CEFR). This level is assessed by:
- supplying a level B2, or above, language certificate that is dated no more than three years prior to the submission date. Certification must be recognized by the University (the list of recognized language certificates can be found at https://www.unimi.it/en/node/297/). The language certificate must be uploaded during the admission process;
- sitting a Placement Test, organized by SLAM exclusively during the first year, from October to January. Students who fail to reach level B2 will be obliged to attend an English course organized by SLAM. The Placement Test is compulsory for all students who do not have a valid language certificate.
Students who do not take the Placement Test within the deadline, and students who fail six attempts to pass the SLAM end-of-course test must obtain a language certificate within the year in which the language exam is scheduled.
With regards to the computer-based English test taken during the bachelor's degrees obtained at the University of Milan, only English level B2 passes achieved no more than four years previously are deemed valid. This will be automatically verified during the application procedure.

Obbligo di frequenza

Course attendance is strongly recommended.

Modalità di valutazione del profitto

University credits will be earned through exams and assessment of lectures, laboratories and thesis dissertation. Course grades are calculated on a 30-point scale, with grade/mark 18 being the minimum to pass and obtain course credits. Assessment will consist of oral or written exams as clearly stated in the syllabus of each course. For courses structured into

modules, a head lecturer will be identified as the coordinator, and evaluation procedures, and the registration of examination grades, will be agreed by all associated teaching members.
The schedule of the examination sessions for the assessment of the learning outcomes is available through the SIFA online service and on the web site http://mbc.cdl.unimi.it/en/study/exams. For each course, at least 7 sessions per year are scheduled, during January-February, June-July, September.

Regole generali per iscrizione e ammissione agli appelli d'esame

Exam registration is compulsory and must be carried out through the SIFA site (available at http://www.unimi.it/en/study/student-services/technology-and-online-services/online-services-former-sifa) in order to allow CFUs to be automatically accredited to the student's personal record.
Students may only sit exams during course breaks, when teaching activities are suspended.

Formulazione e presentazione piano di studi

The study plan should be coherent with the all proposed MBC courses and in line with the experimental thesis topic. Students that include in his/her study plan, courses that differ from those suggested, provided that they account for the requested CFU, must receive prior positive evaluation from the Study Plan Committee (Commissione Piani di Studio) and approved by the Academic Board (Collegio Didattico Dipartimentale, CDD).
For students that select proposed MBC courses only, the study plan must be submitted online in the 2nd Year, via the web address https://mbc.cdl.unimi.it/en/study/study-plan-submission, within the deadline set by the Student Administrative Office, generally between December and March. However, students taking elective courses not offered by MBC Master are requested to submit a study plan by email to the Study Plan Advisor (monica.beltrame@unimi.it) for approval by the end of February of the first year.
Approval of the study plan by the Academic Board is mandatory. To favor the correct planning of educational activities, students are encouraged to discuss their study plan with their tutors during the first year and/or contact the Student Information Office, at the DBS (2nd Floor, tower A).
Admission to graduation depends on correlation between the list of passed exams and the last approved official study plan. In the event of discrepancies between the student's educational career and the relevant study plan, the student cannot be admitted to graduation.

Caratteristiche Tirocinio

THE THESIS

The Master's thesis is composed of a dissertation (written in English) and reports the research activities performed by the student during the 2nd year thesis in a research laboratory, under the guidance of a supervisor (Relatore) and a co-tutor (Correlatore). The thesis describes original data generated on a given research subject, adherent to the principal disciplines of MBC. The thesis period lasts about one solar year and normally starts at the beginning of the second year. In the first part of this period (about 2-3 months) the students will become acquainted with the methodologies and investigation techniques that are mandatory to properly collect research data. During this period the students will carry out practical hands on activities under the constant supervision of a trained senior researcher. At the end of this period upon positive written approval by the MBC coordinator and supervisor of the thesis project the student may start his/her research project in an autonomous manner.
Compilation theses are not permitted. Master theses may be internal or external. Internal theses are carried out at the DBS or in other Departments of the University, in which MBC and DBS teaching staff are based.
External experimental theses may be carried out in other public or private Institutions with adequate facilities. Authorization to perform an external thesis is given by the Academic Board, after careful evaluation of the proposed thesis subject and of the quality of the proponent laboratory. To apply for an external thesis, the student must follow the rules indicated at http://mbc.cdl.unimi.it. The application must be submitted well in advance, as it requires the approval of the MBC Coordinator. The Supervisor of an external thesis must be a member of the DBS and of the Academic Board.

HOW TO SELECT AND APPLY FOR A THESIS POSITION

In February of the first year and October of the second year, students will be informed of the research areas offered in potential host laboratories, the starting dates and the number of internships available are posted on the website (http://tesi.bioscienze.unimi.it). Informative open days are held in the second semester of the first year to present the research interests of the DBS groups and application modalities. Teaching members will communicate place acceptance to students and the MBC coordinator, by a set deadline. The thesis officially starts upon submission of the appropriate form to the Student information office (via Celoria, 26–2nd floor, tower A).
The MBC Coordinator will ensure that every student is assigned a placement. The Coordinator will supervise the acceptance procedures of the external thesis by the thesis committee and will also assist the student to identify a Supervisor. The Supervisor must meet the student periodically and to critically evaluate his/her work progress.
The Supervisor is responsible for the quality of the experimental work performed by the student and will decide if the student may present his/her thesis in the final exam. The thesis must state on the front page where the internship has been carried out (https://mbc.cdl.unimi.it/en/study/stage-and-internship).

ADMITTANCE TO GRADUATION EXAM

The student is admitted to the graduation exam upon certified completion of:
1) the requested mandatory, guided-choice, and elective courses and acquisition of the required number of CFUs, including 3

CFUs relating to English B2 level certification and 12 CFUs of laboratory training;
2) the final thesis.

Caratteristiche della prova finale

The MBC Master's will be obtained by passing a final assessment, which is based on evaluation of the thesis dissertation and an oral presentation (both in English) that describes the research project performed by the student. Following the oral presentation, carried out in front of the thesis committee and a public audience, the student will be questioned by the thesis committee on scientific aspects related to the presented work. The committee will evaluate the presentation skills of the student and the ability to respond to the questions posed by the thesis committee, together with the student's overall performance throughout the two-year Master's, before awarding a grade, calculated on a 110- point scale. The awarded degree title is a Master's Degree in Molecular Biology of the Cell.

Orario lezioni

The first Semester starts on 28th September 2020 and ends on 20th January 2021.
The second Semester starts on 1st March 2021 and ends on 18th June 2021
The complete course timetable will be posted at the following address http://mbc.cdl.unimi.it/en/study/course-timetable.

ESPERIENZA DI STUDIO ALL'ESTERO NELL'AMBITO DEL PERCORSO FORMATIVO

The University of Milan supports international mobility by providing its students with the opportunity to spend study and internship periods abroad. It is a unique chance to enrich your educational path in a new exciting environment.
The agreements entered into by the University with over 300 universities from 30 different countries under the European Erasmus+ programme allow regularly enrolled students to carry out part of their studies at one of the partner universities or to undertake internships at companies, training and research centres and other organizations.
Similar international mobility opportunities are provided outside Europe, through agreements with a number of prestigious institutions.

Cosa offre il corso di studi

MBC students are given the opportunity to spend part of their curriculum abroad, at a University within the European Union (EU), in the context of the Erasmus+ program of the European Commission. Students can attend courses and sit exams that can be included in the core curriculum and/or perform their practical thesis in several European Universities localized in North Europe, France, Germany, Ireland, Poland and Iberian Peninsula (see http://eng.dbs.unimi.it/ecm/home/erasmus/outgoing-students/biological-sciences). Most of the Northern European Universities offer courses taught in English.
The Erasmus+ call is released each year, usually in February. More information can be found at https://www.unimi.it/en/international/study-abroad/studying-abroad-erasmus.
Accepted students must present a study plan that reports all the activities he/she intends to perform abroad, detailing the corresponding CFUs; the number of proposed CFUs should approximately correspond to those the student would have achieved over the same time period in his/her university. The proposed Erasmus+ program study plan, must be coherent with the MBC course content and must be evaluated and approved by the Academic Board. If necessary, the Academic Board may request the student to integrate the program of exams taken abroad. In accordance with the rules established by the Academic Senate, following completion of the Erasmus+ program, approved exams will be registered, possibly with the original denomination, as part of the student's curriculum, upon the conversion of the European Credit Transfer and Accumulation System (ECTS) into CFUs.
If the student performs the experimental thesis work abroad, he/she must follow the rules outlined above (see Internship criteria and Rules for the thesis and final exam).
The Erasmus and international mobility advisor for Biological area is Prof. M. Cristina Bonza (cristina.bonza@unimi.it).

Modalità di partecipazione ai programmi di mobilità - mobilità Erasmus

The students of the University of Milan can participate in mobility programmes, which last 3 to 12 months, through a public selection procedure.
Ad hoc commissions will evaluate:
• the candidate's proposed study programme abroad
• his/her foreign language proficiency
• the reasons behind his/her application
Call for applications and informative meetings
The public selection generally begins around February each year with the publication of a call for applications specifying the destinations, with the respective programme duration, requirements and online application deadline.

Every year, before the deadline for the call, the University organizes informative meetings to illustrate opportunities and rules for participation to students.

Erasmus+ scholarship
The European Union grants the winners of the Erasmus+ programme selection a scholarship to contribute to their mobility costs, which is supplemented by the University funding for disadvantaged students.

Language courses
Students who pass the selections for mobility programmes can benefit from intensive foreign language courses offered each year by the University.

Learn more at https://www.unimi.it/en/international/study-abroad/studying-abroad-erasmus

International Mobility Office
Via Santa Sofia 9 (second floor)
Tel. 02 503 13501-12589-13495-13502
E-mail: mobility.out@unimi.it
Desk opening hours: Monday to Friday 9 am - 12 noon

MODALITA' DI ACCESSO: 1° ANNO LIBERO CON VALUTAZIONE DEI REQUISITI DI ACCESSO

Informazioni e modalità organizzative per immatricolazione

Both Italian and foreign students must submit admission applications by the deadlines indicated in the "student area" of the University web portal (https://www.unimi.it/en/node/92/). Those students who have already graduated before the application deadline (28th August 2020) must matriculate by 30th September 2020. Students who will graduate between 28th August and 31st December 2020 must matriculate by the 15th January 2021. The application form must be completed and electronically submitted to the above mentioned address.

Istruzioni operative

MBC COURSE ENROLLMENT
Only graduates who have successfully passed the entrance interview may enroll in the MBC course.
Registration will open 5 working days after the interview, according to the terms and conditions indicated at https://www.unimi.it/en/node/92/
Students from the Università degli Studi di Milano that have acquired extra CFUs during their bachelor’s degree by passing MBC exams, may request that such credits count towards the 120 CFUs required for MBC graduation.

N° posti riservati a studenti extracomunitari non soggiornanti in Italia

25

1° ANNO DI CORSO Attività formative obbligatorie

Erogazione	Attività formativa	Modulo/Unità didattica	Cfu	Settore
	English proficiency B2 (3 ECTS)		3	ND
1 semestre	Advanced molecular biology		6	BIO/11
1 semestre	Molecular bioinformatics		6	INF/01
1 semestre	Organic chemistry applied to biology		6	CHIM/06
2 semestre	Molecular genetics		6	BIO/18
2 semestre	Protein biochemistry		6	BIO/10
2 semestre	Structural biology of the cell		6	BIO/06, BIO/01
		Totale CFU obbligatori	39	

2° ANNO DI CORSO Attività formative obbligatorie

Erogazione	Attività formativa	Modulo/Unità didattica	Cfu	Settore
annuale	Biomolecular methods laboratory		9	BIO/11, BIO/10, BIO/18
annuale	Laboratory training		12	NA
		Totale CFU obbligatori	21	

Altre attività a scelta

The student must choose one of the following three courses:				
1 semestre	Developmental biology and genetics		6	BIO/18
1 semestre	Functional genomics		6	BIO/11, BIO/18
1 semestre	Molecular microbiology and genetics of microorganisms		6	BIO/19, BIO/18
The student must choose one of the following three courses:				
1 semestre	Biomembranes		6	BIO/09
1 semestre	Molecular pharmacology and immunology		6	MED/04, BIO/14
2 semestre	Stem cells and genetic diseases		6	BIO/14
The student must choose one of the following three courses:				
1 semestre	Synthetic biology		6	BIO/11, BIO/10, BIO/19, BIO/18, BIO/04
2 semestre	Methods in biochemical investigation		6	BIO/10

2 semestre	Signal transduction		6	BIO/10, BIO/04
The student must acquire 12 CFU by selecting any of the courses offered by the University of Milan, provided that they are coherent with MBC topics and that the course content does not overlap with those present in mandatory and guided-choice courses. Obviously, as open choice courses, the student can pick the remaining guided-choice courses that he/she had not inserted in the study plan. If unavailable in English, open-choice courses can be taken in Italian provided that the student is fluent in Italian language.				
Attività conclusive				
	Final dissertation		30	NA
		Totale CFU obbligatori	30	

PROPEDEUTICITA'

There are no propaedeutic courses in the MBC programme that limit progression from the first to the second year.

RICONOSCIMENTI E VECCHI ORDINAMENTI

Riconoscimenti crediti già acquisiti

CFU ACQUIRED IN OTHER MASTER’S

Students requesting a transfer from another Master’s programme to MBC, will be subject to audit by an ad hoc committee that will decide if and how many of the CFUs previously acquired by the student may be deemed valid upon admittance to MBC. In addition, the Academic Board retains the right to assess the background knowledge of the candidate by interview, or may request partial integration of pertinent exams.

CFUs ACQUIRED DURING PROFESSIONAL WORK EXPERIENCE

A maximum of 9 (extracurricular) CFUs may be acquired (according to art. 5, comma 7, del DM 270/2004) by certified professional work experience and by post-secondary level educational activities performed in association with the University, upon approval by the MBC coordinator.