# UNIVERSITA' DEGLI STUDI DI MILANO
## PROGRAMME DESCRIPTION - ACADEMIC YEAR 2019/20
## BACHELOR
### Music Information Science (Classe L-31)
### enrolled from 2014/2015 academic year

## HEADING

| | |
|---|---|
| **Degree classification - Denomination and code:** | L-31 Computer science |
| **Degree title:** | Dottore |
| **Length of course:** | 3 years |
| **Total number of credits required to complete programme:** | 180 |
| **Years of course currently available:** | 1st , 2nd , 3rd |
| **Access procedures:** | Cap on student, student selection based on entrance test |
| **Course code:** | F3X |

## PERSONS/ROLES

**Head of Study Programme**
   Prof. Giovanni Pighizzini

**Degree Course Coordinator**
   Prof. Luca Ludovico

**Tutors - Faculty**
   Federico Avanzini, Goffredo Haus, Luca Andrea Ludovico, Marco Mesiti, Elena Pagani.

**Degree Course website**
   https://informaticamusicale.cdl.unimi.it/

   http://www.unimi.it/studenti/matricole/77516.htm

via Celoria 18, Milano   Phone 0250316250/252   https://informaticamusicale.cdl.unimi.it/   Email: segreteria.didattica@di.unimi.it

via Celoria 18, Milano   http://www.di.unimi.it/ecm/home/organizzazione/organi-di-governo/altre-commissioni/content/piani-di-studio.0000.UNIMIDIR
Email: piani.studio@di.unimi.it

**international.students@unimi.it**

via Celoria 18, Milano   Phone 199 188 128   https://www.unimi.it/it/studiare/servizi-gli-studenti/segreterie-infostudenti/sedi-e-orari-segreterie-studenti   https://www.unimi.it/it/studiare/servizi-gli-studenti/segreterie-infostudenti/sedi-e-orari-segreterie-studenti

## CHARACTERISTICS OF DEGREE PROGRAMME

**Notes**
   In order to get their degree, students are required to certify their knowledge of the English language at the B1 level. This level can be certified in one of the following ways:
   - By submitting their language certificate, taken no more than 3 years before its submittal and attesting a B1 or higher level (for the list of the language certificates which are accepted by the University of Milan, please refer to the website: http://www.unimi.it/studenti/100312.htm).
   Students can submit their language certificate during the immatriculation procedure or send it to the Language Centre of the University of Milan (SLAM) via the Infostudente service.
   - By sitting the placement test run by SLAM, during the first year exclusively, from September to December. Should they not pass the Placement Test, students will have to attend the English language course organized by SLAM. All students who do not have a valid language certificate must sit the Placement Test. Those students who do not sit the Placement test by December or do not pass the end of course test in one of the 6 attempts granted will have to get a language certificate outside the University of Milan within their degree.

## EXPERIENCE OF STUDY ABROAD AS PART OF THE TRAINING PROGRAM
   The University of Milan supports the international mobility of its students, offering them the opportunity to spend periods of study and training abroad, a unique opportunity to enrich their curriculum in an international context.

**Study and internships abroad**

The education program can be enriched by educational activities abroad both to deepen some topics and as socialization experience in international environments. WIthin the Erasmus+ program study periods can be taken in over 50 universities in Belgium, Finland, France, Germany, Greece, Lithuania, Norway, Netherlands, Poland, Portugal, Czech Republic, Romania, Spain, Switzerland, Hungary. Courses will be recognized in the personalized study plan. These periods abroad are typically 5-month long and include courses for about 30 CFU, in the area of information and communication technology and related applications. Recognition of these educational activities will be based on the Learning Agreement, to be defined in advance by the student and the Erasmus coordinator at the Computer Science Department before starting the period abroad: course in the learning agreement with passed exams will replace the educational activities of the study plan ("manifesto"), either by covering the same topics or complementing the acquired basic competences. The Erasmus Committee at the Computer Science Department will perform the recognition of CFU obtained abroad and the definition of the personalized study plan. Similarly, stages to prepare the final dissertation are allowed in the same foreign universities. Recognition will be performed by the Department Erasmus Committee.

**How to participate in Erasmus mobility programs**

To gain access to mobility programs for study purposes, lasting 3-12 months, the enrolled students of the University of Milan must attend a public selection that starts usually around the month of February each year through the presentation of specific competition announcements, which contain information on available destinations, respective duration of the mobility, requirements and deadlines for submitting the online application.

The selection, aimed at evaluating the proposed study abroad program of the candidate, knowledge of a foreign language, especially when this is a preferential requirement, and the motivations behind the request, is performed by specially constituted commissions.

Each year, before the expiry of the competition announcements, the University organises information sessions for the specific study course or groups of study courses, in order to illustrate to students the opportunities and participation rules.

To finance stays abroad under the Erasmus + program, the European Union assigns to the selected students a scholarship that - while not covering the full cost of living abroad - is a useful contribution for additional costs as travel costs or greater cost of living in the country of destination.

The monthly amount of the communitarian scholarship is established annually at national level; additional contributions may be provided to students with disabilities.

In order to enable students in economic disadvantaged conditions to participate in Erasmus+ program, the University of Milan assigns further additional contributions; amount of this contributions and criteria for assigning them are established from year to year.

The University of Milan promotes the linguistic preparation of students selected for mobility programs, organising every year intensive courses in the following languages: English, French, German and Spanish.

The University in order to facilitate the organisation of the stay abroad and to guide students in choosing their destination offers a specific support service.

More information in Italian are available on www.unimi.it > Studenti > Studiare all¿estero > Erasmus+

For assistance please contact:
Ufficio Accordi e relazioni internazionali
via Festa del Perdono 7 (ground floor)
Tel. 02 503 13501-12589-13495-13502
Fax 02 503 13503
E-mail: mobility.out@unimi.it
Desk opening hour: Monday-friday 9 - 12

### 1st  COURSE YEAR Core/compulsory courses/activities common

| Learning activity | Ects | Sector |
|---|---|---|
| ACOUSTICS | 9 | FIS/03, FIS/02, FIS/01 |
| COMPUTER ARCHITECTURE I | 6 | INF/01 |
| COMPUTER PROGRAMMING | 12 | INF/01 |
| CONTINUUM MATHEMATICS | 12 | MAT/09, MAT/01, MAT/02, MAT/03, MAT/04, MAT/05, MAT/06, MAT/07, MAT/08 |
| ELEMENTS OF MUSICAL GOODS ECONOMICS | 6 | SECS-P/07 |
| English assessment B1 (3 ECTS) | 3 | L-LIN/12 |
| MODELS OF MUSIC PERCEPTION | 6 | M-PSI/01 |

| MUSIC SEMIOTICS | | 6 | M-FIL/05 |
|---|---|---|---|
| | Total compulsory credits | 60 | |

## 2nd  COURSE YEAR Core/compulsory courses/activities common

| Learning activity | | Ects | Sector |
|---|---|---|---|
| ALGORITHMS AND DATA STRUCTURES | | 6 | INF/01 |
| COMPUTER SCIENCE APPLIED TO MUSIC | | 18 | INF/01 |
| COMPUTER SCIENCE APPLIED TO SOUND | | 12 | INF/01 |
| DATABASES | | 6 | INF/01 |
| OPERATING SYSTEMS | | 6 | INF/01 |
| SIGNAL PROCESSING | | 6 | INF/01 |
| STATISTICS AND DATA ANALYSIS | | 6 | INF/01 |
| | Total compulsory credits | 60 | |

## 3rd  COURSE YEAR Core/compulsory courses/activities common

| Learning activity | | Ects | Sector |
|---|---|---|---|
| COMPUTER NETWORKS | | 6 | INF/01 |
| ELEMENTS OF MUSICAL INFORMATION LAW | | 6 | IUS/01 |
| METHODS AND TECHNOLOGIES OF MUSIC PUBLISHING | | 6 | SPS/08 |
| WEB PROGRAMMING | | 6 | INF/01 |
| | Total compulsory credits | 24 | |

## Further elective courses

**Free choice courses.**
**Students will have to achieve 12 free cfu among the courses of the previous tables, among the following courses activated by the Department, or among all the courses activated by the university.**
**Students can request the recognition of credits for training activities at external institutions, presenting a certification. Each certification can give rise to a maximum of 3 credits, and up to 2 certifications can be recognized. The students who intend to request the recognition of the certifications must complete the "application" form available on the page http://www.unimi.it/studenti/segreterie/963.htm and send ver to the secretary of his / her degree together with a copy of the certifications achieved.**
**The evaluation will be carried out by a special commission based on the following parameters:**
**- Validity: the certification must have been obtained for a maximum of 5 years.**
**- Specificity: the object of the certification must be those referable to those required by the degree course in which the student is regularly enrolled.**
**- Specialization: the certification must concern specialized and / or professional skills.**
**- Level: the certification must attest to skills of a medium or advanced level. Basic and entry level certifications are excluded.**

| Course | Ects | Sector |
|---|---|---|
| CRYPTOGRAPHY I | 6 | INF/01 |
| DECLARATIVE PROGRAMMING | 6 | INF/01 |
| DIGITAL IMAGE PROCESSING | 6 | INF/01 |
| DISCRETE MATHEMATICS | 6 | MAT/09, MAT/01, MAT/02, MAT/03, MAT/04, MAT/05, MAT/06, MAT/07, MAT/08 |
| INFORMATION SYSTEMS | 6 | INF/01 |
| LANGUAGES AND COMPILERS | 6 | INF/01 |
| MULTIMEDIA INFORMATION | 12 | INF/01 |
| MULTIMEDIA PUBLISHING | 6 | INF/01 |
| NEW MEDIA SOCIOLOGY | 6 | SPS/08 |
| OPERATIONS RESEARCH | 6 | MAT/09 |
| PROGRAMMING LANGUAGES | 6 | INF/01 |
| SCIENTIFIC VISUALIZATION | 6 | INF/01 |
| SECURITY AND PRIVACY | 6 | INF/01 |
| TECHNOLOGIES FOR THE RESTORATION OF MUSICAL INFORMATION | 6 | INF/01 |

**Table 1. Students must obtain 6 credits from the following courses for the guided choice.**

| Course | Ects | Sector |
|---|---|---|
| DISCRETE MATHEMATICS | 6 | MAT/09, MAT/01, MAT/02, MAT/03, MAT/04, MAT/05, MAT/06, MAT/07, MAT/08 |
| MULTIMEDIA PUBLISHING | 6 | INF/01 |
| NEW MEDIA SOCIOLOGY | 6 | SPS/08 |
| TECHNOLOGIES FOR THE RESTORATION OF MUSICAL INFORMATION | 6 | INF/01 |

## End of course requirements

| | | | |
|---|---|---|---|
| FINAL EXAM | | 3 | NA |
| TRAINING | | 15 | NA |
| | Total compulsory credits | 18 | |

## COURSE PROGRESSION REQUIREMENTS

*The course contains the following obligatory or advised prerequisites*

| Learning activity | Prescribed foundation courses | O/S |
|---|---|---|
| METHODS AND TECHNOLOGIES OF MUSIC PUBLISHING | COMPUTER SCIENCE APPLIED TO MUSIC | Recommended |
| SIGNAL PROCESSING | CONTINUUM MATHEMATICS | Core/compulsory |
| COMPUTER SCIENCE APPLIED TO SOUND | COMPUTER PROGRAMMING | Core/compulsory |
|  | ACOUSTICS | Recommended |
| COMPUTER SCIENCE APPLIED TO MUSIC | MUSIC SEMIOTICS | Recommended |
|  | COMPUTER PROGRAMMING | Core/compulsory |
|  | ACOUSTICS | Recommended |
| OPERATING SYSTEMS | COMPUTER ARCHITECTURE I | Recommended |
|  | COMPUTER PROGRAMMING | Recommended |
| ACOUSTICS | CONTINUUM MATHEMATICS | Recommended |
| WEB PROGRAMMING | COMPUTER PROGRAMMING | Core/compulsory |
|  | DATABASES | Recommended |
| STATISTICS AND DATA ANALYSIS | CONTINUUM MATHEMATICS | Core/compulsory |
| COMPUTER NETWORKS | OPERATING SYSTEMS | Recommended |
| DATABASES | COMPUTER PROGRAMMING | Recommended |
| ALGORITHMS AND DATA STRUCTURES | COMPUTER PROGRAMMING | Core/compulsory |
|  | CONTINUUM MATHEMATICS | Recommended |