

DOUBLE MASTER DEGREE AGREEMENT BETWEEN

THE UNIVERSITY OF GENOA (Italy)

AND

IMT MINES ALES (France)

In furtherance of their mutual interests in the fields of education and research, the University of Genoa and IMT Mines Alès decide to go further in their cooperation and to setup a program leading for students of the both institutions to be awarded a Double Master Degree in Civil Engineering.

The University of Genoa, Genoa, Italy, hereinafter also referred to as UniGe, in the person of its pro-tempore legal representative, the Rector, Professor Federico Delfino, acting on the basis of the provisions contained in Ministerial Decree n. 820 of 30 October 2020, singly referred to in this Agreement as 'the Party' or jointly as 'the Parties';

and

Institut Mines-Télécom, a French public scientific, cultural, and professional establishment duly organized under the laws of France and, governed by the Decree n°2012-279 of 28th February 2012 modified by the Decree n°2016-1527 of 14th November 2016, on behalf of its entity IMT Mines Alès having its registered office located at 6 avenue de Clavières, F-30319 Alès cedex, France and duly registered under SIRET No.180 092 025 00113, APE Code 8542Z duly represented by Mr. Thierry de MAZANCOURT, Director, Hereinafter referred to as "IMT Mines Alès"

- whereas all the regulations in force in each Country;
- whereas art. n. 3 of the Italian Ministerial Decree n. 270 of 2004 regarding the possibility for Italian Universities to issue double degrees based on agreements also with foreign Higher Education Institutions;
- whereas the Didactic Regulation and the Students' Regulation in force at UniGe;
- whereas the Didactic Regulation and the Students' Regulation in force at IMT Mines Alès;
- whereas the section 5 of decree ref.1330/2019 of Italian Minister of Public Education.

Agrees as follows:

Article 1 - Principle

IMT Mines Alès and UniGe are setting up a collaboration in the area of *Civil Engineering* aimed at launching an integrated and international double Master course named "*Double Master Degree in Civil Engineering*" (acronym: DMCE) aiming at awarding the following degrees:

- UniGe: Laurea Magistrale in Ingegneria Civile (LM-23): two-year Master degree.
- IMT Mines Alès: Diplome d'Ingenieur de l'Ecole National des Mines d'Alès de l'Institut Mines Télécom – "Génie Civil et Bâtiment Durable (GCBD) Department": three-year Master degree.

At this aim, the students enrolled in the Corso di Laurea Magistrale in Ingegneria Civile at UniGe that meet the requirements as set out in article 4 of this agreement are admitted to the Course in Diplome d'Ingenieur de l'IMT Mines Alès – GCBD Department.

In the same way, the students enrolled Diplome d'Ingenieur de l'Ecole des Mines Alès (EMA) – GCBD Department that meet requirements as set out in article 4 of this agreement, are admitted to the Corso di Laurea Magistrale in Ingegneria Civile at UniGe.

The double Master course foresees a compulsory mobility period abroad to be carried out at the premises of the other partner Institution.

Article 2 – Duration of the agreement

This Agreement covers a period of 5 years until the a.y. 2025/2026 included from the date of signing and shall come into effect upon the signature of both Parties; the date of the last signature thereof taking precedence.

Each Party may terminate the Agreement by serving six months' written notice and supplying adequate motivation for termination. Any activity in progress at the partner Institution at the moment of termination or expiry of this Agreement shall be completed and students must be given the possibility to conclude their career.

On termination of this Agreement, the contact names indicated in article 11 shall jointly prepare a report on the activities carried out and the results achieved.

Article 3 – Information about the study plan

The pattern for the *"Double Master Degree in Civil Engineering"* in program is as follow.

Students from UniGE:

- 1) The first year of study of the Course "Laurea Magistrale in Ingegneria Civile" at UniGe (Master)
- 2) Two years of study at IMT Mines Alès (2A, 3A) including the final degree project.

Students from IMT Mines Alès:

- 1) Two years of study at IMT Mines Alès (1A, 2A)
- 2) Two years of study of the Course "Laurea Magistrale in Ingegneria Civile" at UniGe (Master)

The total duration is, therefore, 3 years for the UniGe students and 4 years for the IMT Mines Alès students (one year more the usual duration of the Master study of the student that doesn't attend the DMCE). The students enrolled in DMCE must follow the study detailed in Annex 1.

Further information about the "Corso di Laurea Magistrale in Ingegneria Civile" at UniGe are published on the webpage <https://corsi.unige.it/10799>.

Further information about the Course "Diplome d'Ingenieur de l'Ecole des Mines d'Alès – Infrastructures et Grands Ouvrages (IGO)" are published on the website <https://www.mines-ales.fr>.

Article 4 – Requirements and conditions for applications

Candidates for DMCE program must satisfy the following requirements:

Students from UniGe:

- 1) The UniGe students have to attend the first year of the Master Course of "Ingegneria Civile" at UniGe and, within 1st of March of their first a.y., have to present application to the UniGe Office. At this date the students have to be already obtained 18 ECTS of the courses of the first semester of the first year of the "Laurea Magistrale in Ingegneria Civile".

- 2) Applications must include a curriculum vitae, a transcript of records, including courses and marks, and a motivation letter.
 - 3) The students admitted to DMCE have to obtain - under penalty of exclusion – at least the 80% of the ECTS of the first year of the “Laurea Magistrale in Ingegneria Civile” within the month of August.
- The total duration of the DMCE is 3 years for the UniGe students.

Students from IMT Mines Alès:

- 1) The IMT Mines Alès students have to attend the two first years of study at IMT Mines Alès (1A, 2A), and 1st of March of the second year, have to present application. At this date the students have to be already obtained 90 ECTS of the courses of the first year (1A) and of the first semester of the second year at IMT Mines Alès (2A).
 - 2) Applications must include a curriculum vitae, a transcript of records, including courses and marks, and a motivation letter.
 - 3) The students admitted to DMCE have to obtain - under penalty of exclusion – the ECTS of the first two years of study at IMT Mines Alès (1A, 2A), within the month of August.
- The total duration of the DMCE is 4 years for the IMT Mines Alès students.

Students of both Parties are required to have an adequate knowledge of Italian/English (for EMA students) or French/English (for UniGe students). Both Institutions are free to define the adequacy of the required linguistic competences.

In any case, foreign students, who are not EU citizens, will have to comply with the regulations and the deadlines regarding the enrolment established by the Italian Ministry for University and Research (MUR) every year, if requested.

Article 5 – Selection of the candidates

Each Academic Year up to 3 students for each University are selected to be admitted to DMCE program. The students selection process to the admission will be compliant to the national French and Italian regulations, and according to general criteria such as the academic potential, the linguistic level knowledge, motivation, transcript of records, professional experience and other aspects of their *Curriculum Vitae*.

Article 6 – Study plan and mobility period

The period of full-time course work at the host institution should not exceed four semesters, and the total duration of the nominal study period for the individual student should not be prolonged by more than one year.

To obtain the DMCE the UniGe students have to complete the first year of the “Laurea Magistrale in Ingegneria Civile”, acquiring 48 ECTS, and have to attend two academic years at IMT Mines Alès, obtaining the 120 ECTS of the host Institution educational activities of these years. These 120 ECTS include the Final Degree project credits. The UniGe students have to succeed to the TOEIC exam with a score minimum at 800 preferably before the start of the mobility period and, in any case, by the end of the same period.

Before the mobility IMT Mines Alès students have acquired 120 ECTS (first year at IMT Mines Alès 60 ECTS, second year at IMT Mines Alès 60 ECTS). IMT Mines Alès students after having completed the second year at IMT Mines Alès continue their studies by attending two years at UniGe and by acquiring the totality of 120 ECTS required by the “Laurea Magistrale in Ingegneria Civile”.

To obtain the engineer degree of IMT Mines Alès, all students have to succeed to the TOEIC exam with a score minimum at 800. IMT Mines Alès students have to succeed to the TOEIC exam with a score minimum at 800 before the mobility period.

It is generally accepted that students of UniGe at IMT Mines Alès will have courses in French and English and IMT Mines Alès students at UniGe will have courses in Italian and English.

At the end of the mobility period, the hosting Institution must send the student's home Institution the certificate of attendance as well as the transcript of records reporting the grade obtained for each exam. The recognition of the credits gained by the student during the mobility period is based on the evaluations given by the hosting Institution according to its own rating and evaluation system.

The receiving institution shall communicate to the sending institution the results of each student in terms of grades (and credits wherever possible) at the end of each academic year. The parties agree that exams/ courses shall be graded and awarded credits according to the rules of the institution where the exam/ course is taken.

Article 7 – Master thesis

The final degree Final Project, of Master Thesis, is a study developed under the direction of a supervisor of the hosting Institution, where the mobility period was carried out, with (possibly) a contact person from the home Institution.

The final degree project results in a report, which is written in English, and includes an abstract in French and in Italian languages.

IMT Mines Alès students defend their Master thesis at UniGe while UniGe students defend their Master thesis at IMT Mines Alès according to the rules of the respective Universities.

If requested and agreed, the home/hosting Institution can set up a video conference to let the lecturers from the partner Institution participate in the defense.

Article 8 – Awarding of the double Master degree

The awarding of both "Laurea Magistrale in Ingegneria Civile" and "Diplome d'ingénieur de l'IMT Mines Alès" is approved in accordance with the judgment and evaluation of both IMT Mines Alès and UniGe provided that the student has met all the requirements, including the mobility period and the defense of the Master thesis.

Article 9 – Academic failure

In case of academic failure before or during the mobility period, the student concerned will be excluded from the joint program unless the failure is caused by certified reasons. In any case, the student's home Institution will be responsible to decide and judge on how to assess the single specific case and circumstance.

Article 10 – Coordination

Each partner Institution designates a contact person and an office respectively in charge of the coordination and the management of this Agreement.

For UniGe

The Coordinator of the *Corso di Laurea magistrale in Ingegneria Civile*, Prof.ssa Roberta Sburlati
Department of Civil, Chemical and Environmental Engineering

Address: Via All'Opera Pia, 15, 16145 Genoa
Contact: Prof. Roberta Sburlati
Tel.: +39 010 33 52502, email: roberta.sburlati@unige.it

Office in charge: Settore di Coordinamento Didattica Politecnica
Name of the office: Ufficio Didattica DICCA
Address: Via Montallegro 1, 16145 Genova
Contact: Dott.ssa Simona Grillo
tel. +39 010 33 52303, email: didattica.dicca@unige.it

For IMT Mines Alès

The Coordinator of the Double Degree Dott. Etienne Malachanne
Department of Civil Engineering and Sustainable Building
Address: 6 Avenue de Clavieres, 30100 Ales
Contact: Prof. Etienne Malachanne
Tel : +33 04 66 78 56 86, email: etienne.malachanne@mines-ales.fr

Office in charge: Department of Civil Engineering and Sustainable Building
Head of the department: Dott. Jean-Claude Souche
Address: 6 Avenue de Clavieres, 30100 Ales
Tel : +33 04 66 78 56 54, email: jean-claude.souche@mines-ales.fr

Article 11 – Fees

Students will be responsible for covering the travel costs to the host country and living costs during the stay, including accommodation, books, equipment, consumables, language tuition prior to the commencement of coursework (when necessary), student union fee (if applicable), specific fees (other than tuition fees) that could be charged by the host institution and other expenses arising out of the exchange.

Tuition fees are waived at the host institution for students enrolled in the double degree program. Students enrolled in the double degree program will have to pay regular fees in their home institution. Both parties agree to take action to obtain financial support for student exchanges under European programs or from other financial resources.

Article 12 – Welcome services and accommodations

The hosting Institution will facilitate the accommodation of students in university residences/campuses or similar accommodation and ensure equal access for home and incoming students to student restaurants, canteens and to other university facilities.

At UniGe, the International Student Office (SASS) offers assistance on the following matters: application for the residence permit, searching for accommodation, application for the Italian fiscal-code, application for the student badge (that allows student the access to many services such as libraries, canteens, etc.), support for health assistance, opening a bank account and getting the bus season ticket. Moreover, UniGe offers free-of-charge Italian language courses to incoming students.

IMT Mines Ales offers assistance on the following matters: assistance to the incoming students in finding appropriate accommodation.

Article 13 – Data storage and privacy

Each Institution informs the students applying for the DMCE that their personal data (name, surname, address, phone number, email address, etc.) will be processed also by the host Institution.

The Parties shall handle, and store data held on computer and on hard copies relating to the carrying out of the activities foreseen by this Agreement in accordance with their applicable national legislations.

The students have the right to access, modify, delete and oppose to the data stored according to the General Data Protection Regulation UE 2016/679 and the Italian Legislative Decree n. 196 of 2003 and the French Law “Informatique et Libertés” n.78-17 of 1978, as far as it is compatible, and according to the [specify the specific Law/Decree].

UniGe policy on privacy and data storage is published on the webpage <https://intranet.UniGe.it/privacy>
IMT Mines Alès policy on privacy and data storage is published on the webpage <https://www.mines-ales.fr>

Article 14 – Safety and Insurance

Both Parties ensure insurance and safety measures as below specified.

About safety in the workplace regarding incoming students and staff involved in the activities established by this Agreement, the hosting University

☒ shall conform to applicable European Union legislation *[if it belongs to a EU member State]*

☐ shall conform to applicable national legislation *[if it does not belong to a EU member State]*

In order to comply with provisions reported in the “*Testo Unico sulla sicurezza sul lavoro*” (i.e. Safety and Security at Work Act), pursuant to the Legislative Decree n. 81 of 2008, and as further provided by the Legislative Decree n. 106 of 2009 and by the Ministerial Decree n.363 of 1998, the Parties agree as follows:

- the University of Genoa’s employer, namely professor Federico Delfino undertakes the same obligations towards incoming mobilities from the partner Institution for the activities carried out in the framework of this Agreement;
- the IMT Mines Alès’s employer, namely Thierry de Mazancourt undertakes all the obligations in compliance to

☒ applicable European Union legislation *[if it belongs to a EU member State]*

☐ applicable national legislation *[if it does not belong to a EU member State]*

In accordance with the applicable provisions in force in their respective countries, both Parties shall verify the insurance cover, including healthcare, of participating members in mobility flows.

- UniGE provides mobility students and staff with an insurance coverage for civil liability and accidents. The insurance policy states terms and conditions of the coverage. Students and staff must acquire, at their own expense, an additional insurance policy to be adequately covered, if necessary.

- Students of Mines Ales must acquire, at their own expense, an insurance for civil liability and accidents. The insurance policy states terms and conditions of the coverage.

Article 15: Intellectual Property Rights

Ownership of the technical and scientific results produced by this Agreement shall, unless established differently by a specific implementation agreement, be assigned to both Parties. In accordance with their

respective legislations the Parties shall take all reasonable steps to protect and promote the value of such results. In the event of results produced through separate research initiatives, the intellectual property rights of these results shall belong to the Party where the results are obtained, unless otherwise previously agreed.

In order to promote the marketability of the results obtained, the implementation agreements shall also establish ex ante the procedure to adopt in the face of possible claims to property rights made by personnel belonging to one of the Parties or by those in contact with such personnel.

Article 16 Incompatibility

The Parties declare that none of the personnel participating in the activities foreseen by this Agreement find themselves in a situation that might give rise to incompatibility or conflicts of interest pursuant to applicable national legislations and that the related provisions of such legislations shall be respected at all times.

Article 17: Relationship of the Parties and Disputes

Nothing in this Agreement will be construed as creating a legal partnership or joint venture. Neither of the Parties will represent itself, as being an agent of the other and neither of the Parties is authorized to commit the other.

The resolutions of any disputes arising in the interpretation and implementation of this Agreement will be carry out in an amicable way. Should this not be possible, the Parties will submit the dispute to a competent committee composed by one representative per each Institution and one representative jointly chosen by the Parties involved.

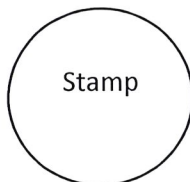
The present Agreement is signed in two copies in English. The Parties receive one copy.

Genoa, *date*

On behalf of the University of Genoa

Federico Delfino

Rector



Alès, *date 01.12.20*

On behalf of IMT Mines Alès

Thierry de Mazancourt

Acting as Director



Study Plan pattern for UNIGE students

- **First year** at UniGe: "Laurea Magistrale in Ingegneria Civile (LM23) with two semesters and two curricula: Strutture e Territorio"
- **Second and third years** at Ecole des Mines d'Ales, Civil Engineering and sustainable buildings
Option: Infrastructures and Grands Ouvrages (IGO)

First year at UniGe.

CORSO DI LAUREA MAGISTRALE in INGEGNERIA CIVILE (classe LM-23)
(codice: 10799)



1° anno - semestri 1 e 2
STRUTTURE

Codice	Disciplina	Semestre	ore	CFU
104376	MATHEMATICAL METHODS FOR ENGINEERING	1	80	8*
104377	MECCANICA DEI SOLIDI E DINAMICA DELLE STRUTTURE			10*
	84533 - DINAMICA DELLE STRUTTURE	1	50	5
	84535 - MECCANICA DEI SOLIDI E DELLE STRUTTURE	1	50	5
86920	COSTRUZIONI IN C.A. E C.A.P.	1 e 2	100	10
98917	STRUTTURE GEOTECNICHE E COSTRUZIONI MARITTIME			10
	84540 - FONDAZIONI E OPERE DI SOSTEGNO	1	50	5
	66208 - COSTRUZIONI MARITTIME	2	50	5
84534	INGEGNERIA SISMICA	2	50	5
66265	NONLINEAR ANALYSIS OF STRUCTURES	2	50	5

Total first year ECTS: 48

1° anno - semestri 1 e 2
TERRITORIO

Codice	Disciplina	Semestre	ore	CFU
104376	MATHEMATICAL METHODS FOR ENGINEERING	1	80	8*
104377	MECCANICA DEI SOLIDI E DINAMICA DELLE STRUTTURE			10*
	84533 - DINAMICA DELLE STRUTTURE	1	50	5
	84535 - MECCANICA DEI SOLIDI E DELLE STRUTTURE	1	50	5
86920	COSTRUZIONI IN C.A. E C.A.P.	1 e 2	100	10
98917	STRUTTURE GEOTECNICHE E COSTRUZIONI MARITTIME			10
	84540 - FONDAZIONI E OPERE DI SOSTEGNO	1	50	5
	66208 - COSTRUZIONI MARITTIME	2	50	5
84534	INGEGNERIA SISMICA	2	50	5
66209	MECCANICA DEI FLUIDI	2	50	5

Total first year ECTS: 48

*These courses have to be passed before the presentation of the application form for DMCE (see Article 4)

Second year at Ecole des Mines d'Ales with two semesters S7 and S8

Semester 7

Modules	Enseignements	Volume horaire	Détail des coefficients	Crédits
TC 7.1	Modélisation / Modeling : o Recherche opérationnelle / Operational research o Eléments finis / Finite Element method o Approfondissement ROP ou EFI *	43 13 13 17	 1 1 1	4
TC 7.2	UE Elective / Elective unit	40		4
TC 7.3	Module approfondissement*	40		4
TC 7.4	Management de projet/ Project managment (simultrain)	16		2
TC 7.5	Méthodologie de la production –excellence opérationnelle / Production methodologies - operational effectiveness o Production industrielle, lean manufacturing, supply chain / Industrial production ; lean manufacturing & supply chain o Etude de cas : Amélioration des performances opérationnelles / Case study : Operational performance improvement o Etude de cas : Management de la qualité / Case study : Quality management o Etude de cas : Supply chain / Case study : Supply chain o Projet fil rouge « de l'extraction minière à la livraison de poutres en béton » / Red thread project « from mining to delivery of concrete beams »	40 10 7,5 7,5 7,5 7,5	 1 1 1 1	4
TC 7.6	Organisation & systèmes d'information (SI) / Information systems (IS) & organization o Modélisation ; maîtrise processus/ Process Modeling o ERP & pilotage de flux/ ERP & material flow management o Processus COBIT ; ERP ; Architecture & urbanisation des SI ; Sécurisation des réseaux d'entreprise / COBIT processes ; ERP ; Information Systems architecture & urbanization ; Security of corporate networks o Etude de cas : Schéma directeur du SI d'une agence de voyage en ligne / Case study : IS master plan of an online travel agency	34 8 6 8 12	 0,5 0,5 2 3	3
TC 7.7	Mission « Conseil en organisation » / Field mission « organization consulting »	5 semaines	Tuteur : 1 Soutenance : 1	5
Module TC 7.8	Langues vivantes et interculturelité/ foreign languages and interculturality o Anglais / English o Langue vivante 2 / Second language o Interculturelité / Interculturality	43,5 20 20 3,5	 1 1 -	3
Module TC 7.9	Projet d'engagement personnel / Personal involvement project		Rapport et soutenance	1
	Total semestre 7 o Cours o Mission	256,5 175		30

Semester 8

Modules	Enseignements	Volume horaire	Détail des coefficients	Crédits
Module TC 8.1	Mission « Recherche et Développement » / R&D Project	175	Tuteur : 2	5
		5 semaines	Soutenance : 1	
Module TC 8.2	Stage en entreprise "Adjoint Ingénieur" / Internship « Assistant engineer »	455	tuteur : 1	5
		13 semaines	Rapport : 1	
	Département technologique / Technological department	252		20
	Total semestre 8 / total semester 8	882		30

The Courses of the Technological Department in Civil Engineering and Sustainable Building (20 Credits) are the following:

Génie Civil Bâtiment Durable

Option Infrastructures et Grands Ouvrages (IGO) / Large infrastructures and

Basée sur un socle de connaissances complémentaires dans plusieurs domaines du génie civil (matériaux du GC, Calcul Conception et réalisation d'ouvrage), l'option propose un approfondissement vers les métiers des Bureaux d'études du BTP (Ingénieur calcul, méthodes, Ingénieur contrôle) ou vers les métiers de conducteur de travaux et chargé d'affaires.

Modules	Enseignements	Volume horaire	Détail des coefficients	Crédits
GCBDiso 8.1	Les bases du projet / Bases of the project : o Bases du projet de construction / Basis of construction project o Bases de conception et de calcul de structures / Foundations to structural concepts and calculations o Liants hydrauliques et bétons courants / Hydraulic cementic materials and ordinary concretes	58 12 12 34	 1 1 1	 4
GCBDiso 8.2	Géologie et géotechnique de l'ingénieur / Géology and soils mechanics for engineers : o Géologie de l'ingénieur / Geology for engineers o Mécanique des sols / Soils mechanics o Interactions sols-structures, fondations de bâtiments / Soils-structures interactions, building foundations	56 18 20 18	 1 1 1	 6
GCBDiso 8.3	Mécanique des structures et des matériaux / Structures and materials mechanics : o Mécanique des structures / Structural Mechanics o Calcul des bâtiments en béton armé / Calculations for Reinforced Concrete buildings o Calcul des structures métalliques / Calculations for steel structures	70 30 20 20	 1 1 1	 6
GCBDiso 8.4	Ouvrages de bâtiments et de travaux publics / Buildings and public works : o Conception et Exécution des Bâtiments / Design and works for Buildings o Terrassements et routes / Earthworks and roads o Ouvrages hydrauliques / Hydraulic works	68 28 24 16	 1 1 1	 4
	Total département technologique / Total technological department	252		20

Total second year ECTS: 60

Third year at Ecole des Mines d'Ales with two semesters S9 and S10

Semester 9

Modules	Enseignements	Volume horaire	Détail des coefficients	Crédits
	Département technologique/ Technological department	270		20
Module TC 9.1	Filière Métier / professional profile (elective courses)	150		10
	Total semestre 9 / total semester 9	420		30

Semester 10

Modules	Enseignements	Volume horaire	Détail des coefficients	Crédits
	Département technologique (option) / Technological department	210		10
	Projet de Fin d'Etudes / Final Project	595	Tuteur (1) rapport (1)	20
		17 semaines	Souten.(1)	20
	Total semestre 10 / total semester 10	805		30

The Courses of the Technological Department in Civil Engineering and Sustainable Building (30 Credits) are the following:

Semester 9

Modules	Enseignements	Volume horaire	Détail des coefficients	Crédits
GCigo 9.1	Mécanique des structures et matériaux / Structural and Material Mechanics :	56		4
	o Structures de génie civil en béton armé / Reinforced concrete Structures.	20	1	
	o Structures mixtes acier - béton / Steel-concrete composite structures	16	1	
	o Structures de génie civil en béton précontraint / Pre-stressed concrete Structures.	20	1	
GCigo 9.2	Dynamique des structures, génie parasismique / Structural Dynamics and Earthquake Engineering :	58		4
	o Etude des bâtiments en plasticité / Structural plasticity for buildings	18	1	
	o Dynamique des structures / Structural Dynamics	20	1	
	o Génie Parasismique / Earthquake Engineering	20	1	
GCigo 9.3	Conception et réalisation des ouvrages d'arts / Design and execution works : Bridges	53		4
	o Interactions sol-structure / Soil and structure interaction	22	2	
	o Béton précontraint hyperstatique pour ouvrages d'art / Hyperstatic Pre-Stressed Concrete for bridges	16	1	
	o Conception des ponts / Bridge Design	15	1	
GCigo 9.4	Conception réalisation de grands ouvrages de Génie Civil/ Design and execution works : Civil engineering structures	47		4
	o Etudes de méthodes et préparation des chantiers / Preparing Construction Sites, method studies	16	1	
	o Génie Civil urbain / Urban Civil works	19	1	
	o Le projet d'exécution des grands ouvrages / Working Drawings for Civil works Structures	12	2	
GCigo 9.5	o Visites techniques / Technical visits			
	Eco conception, maintenance et réhabilitation des structures / Eco design : maintenance and rehabilitation of structures :	56		4
	o Durabilité, pathologies et diagnostics des ouvrages en béton, (approche performantielle) / Durability of diagnostic and pathology of concrete structures (the french approach)	14	1	
	o Auscultation, maintenance et réparation des ouvrages des ouvrages de génie civil / Inspections maintenance and repair design in civil engineering works	24	1	
	o Etude de prix / Construction Price Studies	18	1	
	Total département technologique / Total technological department	270		20

Semester 10

Modules	Enseignements	Volume horaire	Détail des coefficients	Crédits
Spécialisation élective au choix				
GCigo 10.1 a	Conception et réalisation des ouvrages maritimes / Design and execution works for marine structures	64		5
	o Conception des ouvrages maritimes / Design for marine structures	20	2	
	o Bases du projet portuaire / basis of the harbour design	14	1	
	o Méthodes d'exécution et études de prix du génie civil portuaire / Techniques constructions and price study for harbour works	16	1	
	o Calculs détaillés des ouvrages maritimes / Detailed design for marine works	14	1	
GCigo 10.2 a	Etude technique « quais et structures marines » / Technical Study « harbor and marine structures ».	146	1	5
GCigo 10.1 b	Maintenance et réhabilitation des bâtiments / Building maintenance and repair	64		5
	o Gestion du patrimoine bâti et réhabilitation de l'enveloppe du bâtiment / Management of park built and building envelope rehabilitation	20	2	
	o Diagnostics et pathologies des bâtiments / Diagnostic, pathologies in buildings	10	1	
	o Comportement structurel des bâtiments / Structural design of buildings	21	2	
	o Réparation des bâtiments en rénovation / Buildings repair for renovation programs	13	1	
GCigo 10.2 b	Etude technique : Réhabilitation structurelle des bâtiments / Technical Study « Buiding repair and renovation ».	146	1	5
	Total département technologique / Total technological department	210		10

Total third year ECTS: 60 (with Final Project included)

Study Plan pattern for Mines d'Ales students

- First and second years at Ecole des Mines d'Ales with two semesters (S5 and S6, S7 and S8)
- third and fourth years at UniGe "Laurea Magistrale in Ingegneria Civile" with two semesters and two curricula: Strutture e Territorio"

First year at Ecole des Mines d'Ales

Semester 5

Modules	Enseignements	Volume horaire	Détail des coefficients	Crédits
TC 5.1	Concepts et outils mathématiques / Concepts and Mathematical tools	60		5
	o Probabilités / Probability	30	1	
	o Statistiques / Statistics	30	1	
TC 5.2	Informatique / Computer science	79		5
	o Algorithmique et Programmation Objet / Algorithmic and Object Programming	56	7	
	o Réseau / Computer networking	8	1	
	o Bases de données relationnelles / Relational databases	15	2	
TC 5.3	Matériaux pour l'Ingénieur / Engineering Materials	46	1	4
TC 5.4	Energie / Energy	90	1	5
TC 5.5	Organisation systémique de projet et d'entreprise / Organization Systemic Project and Business Management	49		4
	o Gestion d'entreprise / Corporate Management	21	3	
	o Outils d'analyse / Analysis tools	8	-	
	o Droit En Entreprise / Business law	8	1	
	o Management R.H./ Human resources management	12	2	
TC 5.6	Ingénieur et Société / Engineering and Society	64		4
	o Éthique De L'ingénieur / Ethics For Engineers	34	3	
	o Développement Interpersonnel / Interpersonal Development	18	2	
	o Atelier responsabilité sociétale et environnementale	12	-	
TC 5.7	Langues étrangères / Foreign languages	50		3
	o Langue vivante 2 / Second language	20	1	
	o Anglais / English	30	1	
Total semestre 5 / Total semester 5		438		30

Semester 6

Modules	Enseignements	Volume horaire	Détail des coefficients	Crédits
TC 6.1	Mathématiques analytiques / Analytical Mathematics	50		3
	○ Traitement Du Signal / Signal Processing	20	2	
	○ Calcul & Analyse Numérique / Calculus and Numerical analysis	30	3	
TC 6.2	Infrastructure informatique et automatique / IT infrastructure and automation	20		2
	○ Automatique / Automation	20	1	
TC 6.3	Mécaniques des milieux déformables / Mechanics of deformable solids	91		5
	○ Construction Mécanique Industrielle / Industrial construction	21	1	
	○ Résistance des matériaux / Strength of materials	45	2	
	○ Mécanique des milieux continus / Continuum mechanics	25	1	
TC 6.4	Méthodologies de conception / Design methodologies	47		3
	○ Cahier des charges fonctionnel, Analyse de la valeur / Functional work-plan, Value analysis	12	3	
	○ Créativité / Creativity	13	6	
	○ Propriété industrielle / Industrial property	4	1	
	○ Gestion de projet / Project planning	12	3	
	○ Outils de maquettage / Prototyping tools	4	-	
	○ Lean développement / Lean development	2	-	
TC 6.5	Stratégie d'entreprise / Business Strategy	90		4
	○ Gestion et stratégie d'entreprise / corporate management and strategy	40	6	
	○ Étude de marché / Market research	12	2	
	○ Business Model / Business modeling	8	1	
	○ Macro Économie / Macro Economy	6	1	
	○ Intelligence économique & sécurité des données / economic intelligence	12	2	
	○ Immersion entrepreneuriale / Entrepreneurial immersion	12	2	
TC 6.6	Une UE élective au choix*/ One elective unit*	40	1	2
TC 6.7	Langues étrangères / Foreign languages	80		3
	○ Langue vivante 2 / Second language	20	1	
	○ Anglais / English	60	2	
TC 6.8	Mission « Création d'entreprises et d'activités nouvelles » ou « Création de produits ou services innovants » / In-company project « Business development » or « Product or service design »	175	tuteur : 1 Sout. : 1	5
		5 semaines		
TC 6.9	Stage en entreprise « Ouvrier » / Internship as a «manual laborer »	175	Tuteur : 1	3
		5 semaines	Rapport : 1	
	Total semestre 6 / Total semester 6	768		30

Total first year ECTS: 60

Modules	Enseignements	Volume horaire	Détail des coefficients	Crédits
TC 7.1	Modélisation / Modeling : o Recherche opérationnelle / Operational research o Eléments finis / Finite Element method o Approfondissement ROP ou EFI *	43 13 13 17	 1 1 1	4
TC 7.2	UE Élective / Elective unit	40		4
TC 7.3	Module approfondissement*	40		4
TC 7.4	Management de projet/ Project managment (simultrain)	16		2
TC 7.5	Méthodologie de la production –excellence opérationnelle / Production methodologies - operational effectiveness o Production industrielle, lean manufacturing, supply chain / Industrial production ; lean manufacturing & supply chain o Etude de cas : Amélioration des performances opérationnelles / Case study : Operational performance improvement o Etude de cas : Management de la qualité / Case study : Quality management o Etude de cas : Supply chain / Case study : Supply chain o Projet fil rouge « de l'extraction minière à la livraison de poutres en béton » / Red thread project « from mining to delivery of concrete beams »	40 10 7,5 7,5 7,5 7,5	 1 1 1 1	4
TC 7.6	Organisation & systèmes d'information (SI) / Information systems (IS) & organization o Modélisation ; maîtrise processus/ Process Modeling o ERP & pilotage de flux/ ERP & material flow management o Processus COBIT ; ERP ; Architecture & urbanisation des SI ; Sécurisation des réseaux d'entreprise / COBIT processes ; ERP ; Information Systems architecture & urbanization ; Security of corporate networks o Etude de cas : Schéma directeur du SI d'une agence de voyage en ligne / Case study : IS master plan of an online travel agency	34 8 6 8 12	 0,5 0,5 2 3	3
TC 7.7	Mission « Conseil en organisation » / Field mission « organization consulting »	5 semaines	Tuteur : 1 Soutenance : 1	5
Module TC 7.8	Langues vivantes et interculturelité/ foreign languages and interculturality o Anglais / English o Langue vivante 2 / Second language o Interculturelité / Interculturality	43,5 20 20 3,5	 1 1 -	3
Module TC 7.9	Projet d'engagement personnel / Personal involvement project		Rapport et soutenance	1
	Total semestre 7 o Cours o Mission	256,5 175		30

Semester 8

Modules	Enseignements	Volume horaire	Détail des coefficients	Crédits
Module TC 8.1	Mission « Recherche et Développement » / R&D Project	175	Tuteur : 2	5
		5 semaines	Soutenance : 1	
Module TC 8.2	Stage en entreprise "Adjoint Ingénieur" / Internship « Assistant engineer »	455	tuteur : 1	5
		13 semaines	Rapport : 1	
	Département technologique / Technological department	252		20
	Total semestre 8 / total semester 8	882		30

The Courses of the Technological Department in Civil Engineering and Sustainable Building (20 Credits) are the following:

Génie Civil Bâtiment Durable

Option Infrastructures et Grands Ouvrages (IGO) / Large infrastructures and

Basée sur un socle de connaissances complémentaires dans plusieurs domaines du génie civil (matériaux du GC, Calcul Conception et réalisation d'ouvrage), l'option propose un approfondissement vers les métiers des Bureaux d'études du BTP (Ingénieur calcul, méthodes, Ingénieur contrôle) ou vers les métiers de conducteur de travaux et chargé d'affaires.

Modules	Enseignements	Volume horaire	Détail des coefficients	Crédits
GCBDiso 8.1	Les bases du projet / Bases of the project : o Bases du projet de construction / Basis of construction project o Bases de conception et de calcul de structures / Foundations to structural concepts and calculations o Liants hydrauliques et bétons courants / Hydraulic cementic materials and ordinary concretes	58 12 12 34	 1 1 1	 4
GCBDiso 8.2	Géologie et géotechnique de l'ingénieur / Géology and soils mechanics for engineers : o Géologie de l'ingénieur / Geology for engineers o Mécanique des sols / Soils mechanics o Interactions sols-structures, fondations de bâtiments / Soils-structures interactions, building foundations	56 18 20 18	 1 1 1	 6
GCBDiso 8.3	Mécanique des structures et des matériaux / Structures and materials mechanics : o Mécanique des structures / Structural Mechanics o Calcul des bâtiments en béton armé / Calculations for Reinforced Concrete buildings o Calcul des structures métalliques / Calculations for steel structures	70 30 20 20	 1 1 1	 6
GCBDiso 8.4	Ouvrages de bâtiments et de travaux publics / Buildings and public works : o Conception et Exécution des Bâtiments / Design and works for Buildings o Terrassements et routes / Earthworks and roads o Ouvrages hydrauliques / Hydraulic works	68 28 24 16	 1 1 1	 4
	Total département technologique / Total technological department	252		20

Total second year ECTS: 60

Third year at UniGe with two semesters and two curricula: "Strutture e Territorio"

CORSO DI LAUREA MAGISTRALE in 10799 INGEGNERIA CIVILE (classe LM-23)



**1° anno
STRUTTURE**

Codice	Disciplina	CFU
84534	INGEGNERIA SISMICA	5
86920	COSTRUZIONI IN C.A. E C.A.P.	10
66265	NONLINEAR ANALYSIS OF STRUCTURES	5
98917	STRUTTURE GEOTECNICHE E COSTRUZIONI MARITTIME	10
	<i>66208 - COSTRUZIONI MARITTIME</i>	5
	<i>84540 - FONDAZIONI E OPERE DI SOSTEGNO</i>	5
104376	MATHEMATICAL METHODS FOR ENGINEERING	8
104377	MECCANICA DEI SOLIDI E DINAMICA DELLE STRUTTURE	10
	<i>84533 - DINAMICA DELLE STRUTTURE</i>	5
	<i>84535 - MECCANICA DEI SOLIDI E DELLE STRUTTURE</i>	5

**1° anno
TERRITORIO**

Codice	Disciplina	CFU
84534	INGEGNERIA SISMICA	5
66209	MECCANICA DEI FLUIDI	5
86920	COSTRUZIONI IN C.A. E C.A.P.	10
98917	STRUTTURE GEOTECNICHE E COSTRUZIONI MARITTIME	10
	<i>66208 - COSTRUZIONI MARITTIME</i>	5
	<i>84540 - FONDAZIONI E OPERE DI SOSTEGNO</i>	5
104376	MATHEMATICAL METHODS FOR ENGINEERING	8
104377	MECCANICA DEI SOLIDI E DINAMICA DELLE STRUTTURE	10
	<i>84533 - DINAMICA DELLE STRUTTURE</i>	5
	<i>84535 - MECCANICA DEI SOLIDI E DELLE STRUTTURE</i>	5

Total third year ECTS: 48

Fourth year at UniGe with two semesters and two curricula: "Strutture e Territorio"

**2° anno
STRUTTURE**

Codice	Disciplina	CFU
98918	PROVA FINALE	12
104395	TIROCINIO	5

5 CFU tra i seguenti insegnamenti:

80628	GESTIONE E MONITORAGGIO DELLE INFRASTRUTTURE	5
86884	MORFOLOGIA STRUTTURALE	5
80629	STRUTTURE IN LEGNO	5
80574	WIND ENGINEERING	5

5 CFU tra i seguenti insegnamenti:

66060	DIGITALIZZAZIONE DEL PROGETTO	5
91052	ENERGETICA AMBIENTALE	5
80518	FISICA DELL'ATMOSFERA	5
56880	SUSTAINABLE PLANNING	5

104382	CONSOLIDAMENTO, IDENTIFICAZIONE E CONTROLLO DELLE STRUTTURE	10
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	97215 - STRUCTURAL RETROFITTING AND STRENGTHENING TECHNIQUES	5
	104384 - IDENTIFICAZIONE E CONTROLLO DELLE STRUTTURE	5
104379	COSTRUZIONI IN ACCIAIO E MISTE ACCIAIO-CLS	10
104409	PROGETTAZIONE STRUTTURALE CON CALCOLO AUTOMATICO E COSTRUZIONE DI PONTI	10
	73156 - COSTRUZIONE DI PONTI	5
	91008 - PROGETTAZIONE STRUTTURALE CON CALCOLO AUTOMATICO	5

Lo studente deve conseguire anche 15 CFU A SCELTA

2° anno
TERRITORIO

Codice	Disciplina	CFU
98918	PROVA FINALE	12
104395	TIROCINIO	5

5 CFU tra i seguenti insegnamenti:

80595	GEOMATICA PER IL MONITORAGGIO	5
90643	MODELLAZIONE NUMERICA GEOTECNICA	5

5 CFU tra i seguenti insegnamenti:

66060	DIGITALIZZAZIONE DEL PROGETTO	5
91052	ENERGETICA AMBIENTALE	5
80518	FISICA DELL'ATMOSFERA	5
56880	SUSTAINABLE PLANNING	5

104391	GEOTECHNICAL ENGINEERING FOR LAND SAFETY ASSESSMENT	10
	104334 - SLOPE STABILITY	5
	104393 - GEOTECHNICAL DESIGN FOR LAND SAFETY	5
99098	IDROLOGIA E SISTEMAZIONE DEI BACINI IDROGRAFICI	10
	60406 - IDROLOGIA	5
	99099 - SISTEMAZIONE DEI BACINI IDROGRAFICI	5
104410	ROCK ENGINEERING AND HYDRAULIC SYSTEM DESIGN	10
	84539 - ROCK MECHANICS AND GROUNDWATER ANALYSIS	5
	98154 - HYDRAULIC SYSTEMS DESIGN	5

Lo studente deve conseguire anche 15 CFU A SCELTA

Total fourth year ECTS: **72**

ECTS Conversion table Mines d'Ales - UniGe

Grading table

UNIVERSITÀ DEGLI STUDI DI GENOVA	IMT Mines Alès
Marks are awarded to individual candidate on a scale running from 0 to 30. The minimum pass mark is 18. A cum laude can be added to the maximum mark of 30 as a mark of special distinction.	<p>Marks are awarded to individual candidate on a scale running from 0 to 20. The minimum pass mark is 10.</p> <p>18-20 correspond to maximum mark (30) UniGe</p> <p>Above the pass mark, the subsequent table will be followed to convert grades from the courses at IMT Mines Alès into grades for the equivalent courses at the UniGe</p> <p>10 ---> 18 11 ---> 20 12 ---> 22 13 ---> 24 14 ---> 26 15 ---> 27 16 ---> 28 17 ---> 29 18 ---> 30 19 ---> 30L 20 ---> 30L</p>