



INTERNATIONAL COOPERATION AGREEMENT FOR A DOUBLE DEGREE

This Agreement is entered into by

Université Savoie Mont Blanc (hereinafter **USMB**, Public scientific, cultural and professional institution, represented by its president, Professor Philippe GALEZ, duly empowered by a resolution of the Board of Directors dated January 24, 2023), having its main office in 27 Rue Marcoz, BP 1104, 73000 Chambéry cedex, France.

N°SIRET 197 308 588 00015

Code APE 8542 Z

TVA INTRA COM FR 571 973 08588

and

Università degli Studi di Genova (hereinafter **UNIGE**, represented by its Rector Professor Federico DELFINO, appointed by decree of the Minister of University and Research 820/2020), having its main office in Genova, Italy, Via Balbi 5, 16126. Public research and higher education institution.

Partita IVA (VAT number) 00754150100

Witnesseth that:

WHEREAS, both USMB and UNIGE are committed to international, high level teaching; and,

WHEREAS, both USMB and UNIGE profitably carry out teachers and students exchange, common Master theses tutoring, joint organisation of courses, compatibility between courses of USMB and UNIGE; and,

WHEREAS, national laws both in France and in Italy allow joint study initiatives carried out by Universities of different countries; and,

WHEREAS, both USMB and UNIGE regulations (respectively: Règlement des Études de l'Université Savoie Mont Blanc and Regolamento Didattico di Ateneo dell'Università di Genova) allow joint study initiatives carried out by Universities of different countries,

NOW THEREFORE, in consideration of the mutual benefits to be derived hereunder, **USMB** and **UNIGE** (hereinafter: **Universities**) agree as follows:

Article I – Aims

The Universities activate a joint curriculum of studies named “European Master in Engineering for Energy and Sustainable Buildings” (hereinafter: **EMESB**), delivering a double degree in

- Master Degree in Energy for Solar Buildings and Cities (hereinafter **ESBC**) in USMB,
- Laurea Magistrale in Energy Engineering – Ingegneria Energetica (hereinafter **En2**), classe LM 30, in UNIGE,

according to the hereunder articles.

Article II – Eligible Students

2.1 Eligible students for the EMESB are:

- for USMB, students enrolled in Master Degree in Energy for Solar Buildings and Cities (ESBC), and,
- for UNIGE, students enrolled in Master of Science Course (Laurea Magistrale, classe LM30) in Energy Engineering (En2).

2.2 During the EMESB period the students will be enrolled in both Universities, hereinafter referenced as “**Home University**” (where a student starts her/his studies) and “**Hosting University**” (where a student carries out part of her/his studies).

In order to proceed with the enrolment at the Hosting University, students participating in the EMESB are required to submit all the documents established by the internal rules of each University.

Article III – Students Selection

Each Academic Year up to 6 students for each University are selected to be admitted in the EMESB. The student’s selection process to the EMESB admission will be compliant to the national French and Italian regulations, and according to the Selection Criteria (Annex 1), based on general criteria such as: study records, English language proficiency, professional experience, personal motivation.

Article IV – Students Mobility

4.1 Students mobility between the Universities is compulsory.

4.2 During their EMESB, students will acquire ECTS credits according to a plan of studies jointly agreed by the Universities (Study Programme, See Annex 2) that includes a grading scale for the conversion of national marks.

4.3 Students must acquire at least 60 (sixty) ECTS credits in the Home University before they move to the Hosting University, according to the Study Programme.

4.4 Students must have acquired at least 24 (twenty-four) ECTS credits of taught modules at the Home University for the validity of their application to the Double Degree EMESB (Annex 2).

4.5 Students must acquire at least 30 (thirty) ECTS credits of taught modules at the Hosting University. Modules related to student mobility are taught in English.

Article V – Teachers Exchange

The Universities agree that modules in each Institution may be integrated by seminar parts taught by staff from the other Institution, either in presence or by using video-conference tools.

These mobilities will have to be validated according to each institution's procedure. The host university retains the right to accept the teacher and undertakes to provide all necessary conditions for teaching and all benefits in compensation for the teaching load. Exchange or visiting teachers will be responsible for visa and residence formalities, their own transportation and accommodation.

Article VI – Master Thesis

- 6.1 The Master Thesis will be written and defended in English; each student will be jointly supervised by two advisors, one from USMB and one from UNIGE.
- 6.2 The Master Thesis must be done individually unless differently decided by the Home University and must contain elements of original work.
- 6.3 The Master Thesis must be defended in front of a committee of experts at the Home University. The composition and the procedures related to the committee will comply with regulations of the Home University.
- This committee may include invited members of the teaching staff of the Hosting University in order to harmonize the evaluation criteria set up in each institution.
- 6.4 The printed (paper or electronic) version of Master Thesis will contain the logotypes of both USMB and UNIGE.

Article VII: Testing knowledge and skills

The methods of testing knowledge and skills applicable to the above-mentioned degrees are adopted by the signatory institutions of the present Agreement in accordance with the regulations that apply to them respectively.

For the USMB, these procedures are approved annually by the Education and University Life Commission (CFVU) of the Academic Council at the latest at the end of the first month of the teaching year.

For En2 at Unige, the Master Degree Regulation (Regolamento didattico) is approved yearly by resolution of the Master of Science Course Council (Consiglio di Corso). A current version of the document is available at the webpage: <https://corsi.unige.it/en/corsi/10170>

They are transmitted each year before 30 October by e-mail.

Article VIII – Certificate and Diploma

- 8.1 Each University will deliver its diploma according to the National Laws and University regulations.
- 8.2 Each University will provide the other University the following documents:
- list of students enrolled in the EMESB;
 - prior to mobility: for each student, a Learning Agreement and a transcript of records attesting the minimum requisites agreed in the Study Programme;
 - after mobility: for each student, transcript of records of the acquired modules with marks and examination dates;
 - after Master Thesis defence: degree certification with the final mark and diploma supplement (syllabus in paragraph 5, See Annex 2).

Article IX – Financial Management

- 9.1 Students enrolling the EMESB will pay the tuition fees at the Home University for the entire duration of the EMESB. Students are required to pay stamp duties and any other fees which are compulsory for all students (e.g. Social fees), according to the Hosting University internal regulations.
- 9.2 The Hosting University will cover management costs of the hosted students.
- 9.3 The Hosting University will enrol the EMESB students in mobility without double payment of tuition fees.

9.4 Students participating in the exchange must provide health insurance for covering their medical expenses and a certificate of liability insurance for the duration of their stay at the Hosting University.

Article X - Arrangements for the material, pedagogical and linguistic support of students

It is agreed that each University will assist the student of the partner institution in his or her endeavors, in particular to facilitate accommodation and the completion of the various administrative formalities to which they may be subject, as well as access to teaching and language resources.

Article XI – EMESB Management

11.1 The partner Universities appoint as EMESB Coordinators, responsible for the best fulfilment of the present Agreement, the ESBC current Coordinator, Professor Monika Woloszyn (USMB) and Professor Marco Fossa (UNIGE) as En2 Coordinator's Delegate. It is the responsibility of each person in charge to ensure, at his/her University and in liaison with his/her counterpart at the partner University, that the training is carried out correctly and regularly.

11.2 The Coordinators will meet at least once every academic year to assure the quality of the EMESB, and eventually operate the renewal of the documents cited in article III (Selection Criteria Annex) and in article IV (Study Programme Annex). By mutual agreement, the two Universities can activate local structures and commissions in order to better implement the present Agreement.

11.3 The list of members of the teaching teams is given in Annex 3. The composition of the team may change during the duration of the agreement. In this case, any changes will be communicated to the partner without delay.

Article XII – Safety

Both Parties guarantee insurance and safety measures, for each mobility (both to students and staff) as below specified:

As regards safety in the workplace of incoming mobilities from the partner University, taking part in activities in the frame of this agreement, both Parties shall conform to applicable European Union legislation.

In order to comply with the "Testo Unico sulla sicurezza sul lavoro" (i.e. Safety and Security at Work Act), pursuant to "D.Lgs. 9.4.2008, n. 81", and as further provided by "D.Lgs. 3.8.2009 n. 106" and by "D.M. 363/98", the Parties agree as follows:

- The University of Genova's [employer](#), namely professor Federico DELFINO undertakes the same obligations towards incoming mobilities from the partner institutions for the activities carried out in the frame of the agreement;
- The Université Savoie Mont Blanc's legal representative, namely Prof. Philippe GALEZ, undertakes all the obligations in compliance with the European Union legislation relative to safety and security in the workplace towards incoming mobilities from the partner institution for the activities in the frame of the agreement.

Article XIII – Insurance

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

- 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.

- Concerning health coverage, students coming to USMB will have to register online on the French social security website to benefit from free and compulsory health insurance. Students and staff must acquire, at their own expenses, an additional insurance policy to be adequately covered if necessary.

Article XIV – Data storage and privacy

- Each Institution informs the students applying for the EMESB that their personal data (name, surname, address, phone number, email address, etc.) will be processed also by the Hosting University.
- 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, as far as it is compatible, and according to the French Law No. 78-17 of 6 January 1978 on data processing, data files and individual liberties.
- UniGe policy on privacy and data storage is published on the webpage <https://unige.it/en/privacy>

Within the framework of this international cooperation agreement for a double degree, the Parties process personal data. The Parties undertake to comply with the legal and regulatory provisions in force relating to the protection of personal data, in particular Regulation (EU) 2016/679 of the European Parliament and the Council on the protection of individuals with regard to the processing of personal data and on the free movement of such data (RGPD), and Act no. 78-17 of 6 January 1978 as amended. The terms whose first letter is written in capital letters have the same definition as that provided for in the aforementioned Regulation.

Università degli Studi di Genova processes the personal data listed below, within the framework of the present international cooperation agreement for a double degree, in order to organize student and staff mobility with the USMB:

- identification data (title, surname, first name)
- data relating to professional life (status as teacher, student, researcher)
- health data (disability)

The USMB processes the personal data listed below, within the framework of the present international cooperation agreement for a double degree in order to organize student and staff mobility with Università degli Studi di Genova:

- identification data (title, surname, first name)
- data relating to professional life (status as teacher, student, researcher)
- health data (disability)

The legal basis for the processing of personal data is the contract to enable mobility.

The parties act as data controller. They determine the purposes and means of the processing carried out in application of the legislation and professional standards applicable to it.

The parties are jointly responsible for processing the personal data of the users of this contract.

The data of the persons concerned is kept for the time necessary for the purpose of the

processing, i.e. for the duration of the contractual relationship, with intermediate archiving for a period in accordance with the applicable provisions, in particular with regard to the statute of limitations.

The Parties will only provide, directly or indirectly, the Personal Data that the partner university considers necessary to carry out its mission and to comply with the professional and ethical regulations applicable to it. It is the responsibility of the Parties to ensure that all Personal Data communicated to the Partner university, whether directly or indirectly, has been collected in a lawful, fair and transparent manner.

The Data Subjects shall be informed of the processing carried out on their Personal Data by their home university. Each Party undertakes to inform the other Party as soon as possible of any incorrectly addressed.

The Parties undertake not to use the Personal Data to which they have access for purposes other than the Processing Purposes.

The recipients of the Personal Data are the staff of the partner universities responsible for monitoring mobility. These recipients are subject to confidentiality and security obligations and will have access to Personal Data for strictly professional reasons and limited to the Purposes of Processing.

The Parties undertake to inform each other as soon as possible in the event that a Violation of Personal Data is discovered and to provide, as far as possible, the following information:

- The nature of the Violation
- The categories and approximate number of Persons Concerned by the Violation
- A description of the likely consequences of the breach
- A description of the measures taken or to be taken to prevent a recurrence of the incident or to mitigate any possible negative consequences.

Each University undertakes to inform the partner when it uses Subcontractors within the meaning of the Regulation and ensures that they comply with their obligations with regard to Personal Data.

Article XV: 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 employees belonging to one of the Parties or by those in contact with such employees.

Article XVI Incompatibility

The Parties declare that none of the employees 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 XVII Agreement Duration

- 17.1 The present Agreement will be valid commencing in the academic year 2024/2025 and its duration is 3 years (i.e. 2 cohorts), till academic year 2026/2027 included (starting with students enrolled in the first year of the Master Programme in home University in year 2023/2024).
- 17.2 The Agreement can be renewed by signing a new agreement or an amendment subject to the accreditation of the degrees concerned by this international partnership, and after a quality evaluation of the EMESB programme that will be carried out annually, jointly by the Coordinators.
- 17.3 In the case of termination of this international partnership, ongoing actions shall be completed in accordance with the terms and conditions of this Agreement. It may be denounced by each party by registered letter with ninety (90) days' notice.

Article XVIII Miscellaneous

- 18.1 This Agreement sets forth the entire arrangement and understanding between the Universities as to the subject matter thereof and merges all prior discussions between them.
- 18.2 If any provision of this Agreement shall be held to be invalid, such invalidity shall not affect any other provisions of this Agreement, but the remainder hereof shall be effective as though such invalid provisions had not been contained herein.
- 18.3 Settlement of Disputes
- All disputes and disagreements that may arise out of this Agreement or in connection therewith will be solved by negotiation between the Parties. In the absence of an amicable settlement, the dispute will be submitted to the territorially competent court.

In witness whereof, the Universities hereto have caused the Agreement to be executed in duplicate by their duly authorized representatives.

This Agreement is drawn up and signed in two copies in French and two copies in English. In the event of a difference of interpretation, the English text shall prevail.

This Agreement shall enter into force upon the date of the last signature.

Université Savoie Mont Blanc

Name: Professeur Philippe GALEZ

Title: President

Università degli Studi di Genova

Name: Professor Federico DELFINO

Title: Rector

Date:

(Signature et Sceau)

Date:

(Signature and stamp)

EMESB Agreement, Annex 1, Selection Criteria

I – SELECTION PROCEDURE

Students will upload her/his application in the website provided by the institutions. Applicant students must upload their application forms and all the required documents no later than February (academic year I). In any case to be admitted to the EMESB Master course students must obtain their first level degree (bachelor or BAC+3) no later than December 31st (academic year I).

A joint USMB/UNIGE selection committee will define the admission threshold for each students' intake.

USMB and UNIGE will evaluate the EMESB candidates locally and will communicate to the partner the list of students and marks.

Each Academic Year up to 6 students for each University will be selected to be admitted in the EMESB.

Selection results will be published in March (in any case in time for "Erasmus+ mobility for all" selection).

II – FORMAL CRITERIA FOR ADMISSION TO THE COURSE:

- A. Academic potential (class rank and Grade Point Average): max. 40
- B. English level: max. 15
- C. Motivation letter: max. 5
- D. Other aspects of Curriculum Vitae (multiple degree, work experience, professional qualification): max. 5

III – RULES APPLIED BY THE SELECTION COMMITTEE IN THE EVALUATION:

A. Concerning the Academic potential (max. 40):

	Criteria to be applied (one or more from those here below)				
Mark EMESB	Ranking	French Marks	Italian Marks	GPA max 4	GPA max 5
35 to 40	Best 10% (student group at Home University)	15<M≤20	28.5<M≤30	3.2/4	4/5
30 to 35	Best 20% (student group at Home University)	13<M≤15	27<M≤28.5	2.8/4	3.5/5
20 to 30	Best 30% (student group at Home University)	11<M≤13	26<M≤27.5	2.6/4	3.25/5

- Students having less than 20 in this criterion will not be selected.

B. English level (max. 15):

- i- A student whose native language is English will obtain 15.
- ii- A student whose study was in English during classes previous to present MSc: will also take 15.
- iii- A student who has the English proficiency with marks equal to the specified minimum: IELTS 6,5; TOEFL: 220 CBT, 550 PBT, 80 IBT; TOEIC 780): will take 10/15; the mark will be increased in terms of the difference with this minimum limit. Students can obtain 15 if the mark of English test is significantly higher than the required minimum level at home University.
- iv- A student whose university study was partially in English: will take 10/15 under the condition that his marks in the English language course in his university studies are acceptable.
- v- A student with different English certification from the above listed ones can have as maximum 8/15.
- vi- A student without any English certification will get 0/15 and not to be qualified for EMESB.

C. Concerning the motivation letter:

Standard motivation letters will be evaluated 3. The point 5 will be given for good letters. In this evaluation the EMESB committee do not pay attention to the English quality of the letter text.

D. Concerning the CV

Standard student CV will obtain 3, the mark 5 will be given if the student had some unusual performances, including prizes, knowledge of the Hosting University language, participating competition, etc. The quality of the institution or the academic performance will not be taken into account here.

EMESB Agreement, Annex 2, Study Programme

I – SUBJECT

This document deals with the Study Programme of the EMESB agreement, academic years 2024-2025 to 2026-2027 included.

II STUDENT MOBILITY AND ECTS REQUIREMENTS

Students must acquire at least 24 (twenty-four) ECTS credits of taught modules at the Home University to submit an application for the Double Degree EMESB. Deadline for the fulfillment of the 24 credits is 15th June of student's first academic year.

Student mobility is in the second academic year of the Home University, during the first (Fall) semester.

Students must acquire 60 (sixty) ECTS credits in the Home University before they move to the Hosting University.

The Master Theses will be written and defended in English language; each student will be jointly supervised by two advisors, one by USMB and one by UNIGE. In any case a representative of the Hosting University will be part (in person or as video phone call) of the Master Thesis audience at the Home University where the thesis will be defended.

III CREDIT SYSTEM AND GRADE CONVERSION

Each semester of the EMESB mobility consists of teaching modules for corresponding 30 ECTS credits.

ECTS credits correspond to a total student work which includes lectures (frontal lessons), assisted learning (tutorials), laboratory activities and homework. One ECTS corresponds to about 25-30 hours of student workload.

Each module is validated during the exam (written, oral or both) according to the local regulations and according to each University local grading system.

The grading system conversion agreed between USMB and UNIGE is provided in the following Table.

USMB Local mark	20	16	15	14	13	12	11	10	M<10 Failed
UNIGE Local mark	30 e Lode	30	29	28	27	25	22	18	M<18 Failed

UNIGE - EN2 ORGANIZATION

The En2 MSc course at UNIGE is organized according to the following teaching modules, as also described in the MSc course website (<https://corsi.unige.it/en/corsi/10170>)

FIRST YEAR – 1st (Fall) SEMESTER	ECTS	SECOND YEAR– 1st (Fall) SEMESTER	ECTS
Heat Transfer (66382)	6	Models and Methods for Energy Engineering (86662)	6
Mathematical Modeling for Energy Systems (86630)	6	Energy and Buildings (86655)	6
Chemical Processes and Technologies (86631)	6	Fuel Cells and Distributed Generation Systems (86660)	6
Industrial Fluid-dynamics (86641)	6	Solar and Geothermal Energy (80043)	6
Combustion Processes and Emissions (80054)	6	Elective course	0 - 6
FIRST YEAR – 2nd (Spring) SEMESTER		SECOND YEAR – 2nd (Spring) SEMESTER	
Chemical and Biochemical Processes and Plants for Energy (72562)	6	Hydro, Wind and Micro-gas Turbines (86661)	6
Power Systems Modeling and Control (65887)	6	Energy Laboratory (80081)	6
Power Systems Management (86638)	6	Master thesis project (11) +Training and Orientation (1)	12
Power Plants for Energy Conversion (80053)	6	Elective courses	6 - 12
Industrial Plants for Energy (86644)	6		
		ELECTIVE COURSES, SECOND YEAR (student choice, 2 out of 4 among the ones here below)	
		Remote Sensing (80048, 2st semester)	6
		Advanced Propulsion Systems and Green Fuels (86665, 2nd semester)	6
		Project Management for Energy Production (86666, 2st semester)	6
		Power Systems Simulation and Optimization (86667, 1nd semester)	6
Total ECTS=60		Total ECTS=60	

USMB-EMESB student will attend courses at Unige which refer to En2 fall semester, second year, according to the teaching modules in the list here above and he will acquire the corresponding 30 ECTS by passing examinations.

USMB- ESBC ORGANIZATION

The ESBC MSc course at USMB is organized according to the following teaching modules, as also described in the USMB website (<https://www.univ-smb.fr/solaracademy/energy-for-solar-buildings-and-cities-esbc-2/>)

FIRST YEAR – 1ST SEMESTER, FALL (S7)	30
UE701 Core Solar	4
Solar Ressource, Radiation and Optics	3
Application to solar systems	1
UE702 Core Building	4
Energy needs and performance-	1
Building energy : Envelope and HVAC	3
UE703 Physics and materials for solar systems and buildings	4
Thermodynamics and heat transfer	3
Materials for energy	1
UE704 Introduction to Economics	4
Introduction to economics	2
Public economics	2
UE 705 Sustainability for energy transition	8
International and European regulations	2
Seminars: Human science for solar energy	2
Sustainability analysis	2
Foreign language (French or English)	2
UE706 Introduction to research	6
Literature review project	6
FIRST YEAR – 2ND SEMESTER, SPRING (S8)	30
UE801 Power generation	6
Solar power generation	2
Energy vectors & Energy storage	2
Energy grids	2
UE802 Advanced tools - experimental	4
Experimental methods	1
Application to solar systems	3
UE803 Modelling of transfers phenomena	4
Computational fluid mechanics (CFD)	2
Building performance simulation (BPS)	1
Radiation modeling in complex media	1
UE804 Introduction to management	2
Strategic management	2
UE805 Energy Environment and Society	6
Specific energy contracts and Fiscal law	2
Seminars International energy policies	2
Foreign language (French or English)	2
UE806 Innovation, creativity, research	8
Creativity through biomimicry for solar cities	2
Research project	6
Optional Internship/Work placement	

SECOND YEAR – 1ST SEMESTER, FALL (S9) 30

UE901 Advanced Solar Systems	6
Solar thermal systems	2
Building integrated PV	2
Solar power generation	2
UE902 Tools for Solar Cities	6
Urban Metabolism: Energies, anergy, geothermy...	2
Solar cadastre, solar performance	2
Environmental regulation for buildings and systems	2
UE903 Advanced methods	4
Artificial Intelligence	2
Operational research for urban solar development	2
UE904 Urban development	6
Case study common project	2
Urban planning and architectural integration	1
Performance indicators and information processing	1
Foreign language (French or English)	2
UE905 Research and Innovation Project	8
Multidisciplinary project	6
Entrepreneurship, Innovation challenge	2

SECOND YEAR – 2ND SEMESTER, SPRING (S10) 30

UE110 Internship and master thesis 30

Total ECTS **60**

UNIGE- -EMESB student mobility is in the first (fall) semester of their second year. They will attend courses at USMB corresponding to at least 22 ECTS common with ESBC S9 students. Additional 8 ECTS refer to S7 (semester 7) of ESBC, as stated hereafter. Additional credits from ESBC S9 can be chosen as elective courses.

Second Year – 1st (fall) semester, for UNIGE EMESB students at USMB		
UE701 Core Solar	4	<i>Mandatory</i>
Solar Resource, Radiation and Optics	3	
Application to solar systems	1	
UE702 Core Building	4	<i>Mandatory</i>
Energy needs and performance	1	
Building energy : Envelopeand HVAC	3	
UE901 Advanced Solar Systems	6	<i>Mandatory</i>
Solar thermal systems	2	
Building integrated PV	2	
Solar power generation	2	
UE902 Tools for Solar Cities	6	<i>Mandatory</i>
Urban Metabolism: Energies, anergy, geothermy...	2	
Solar cadastre, solar performance	2	
Environmental regulation for buildings and solar collectors	2	
UE903 Advanced methods	4	<i>Mandatory</i>
Artificial Intelligence	2	
	2	

Operational research for urban solar development	6	
UE905 Research and Innovation Project Research project	6	<i>Mandatory</i>
TOTAL ECTS	30	

V COURSE SYLLABI, PROFESSOR IN CHARGE AND OTHER INFORMATION RELATED SPECIFIC COURSE

The course syllabus, professors, exam organization, references, course schedules are information available at USMB and En2 web sites

<https://www.univ-smb.fr> : and <https://formations.univ-smb.fr/fr/catalogue/master-XB/sciences-technologies-sante-STS/master-energie-solaire-solar-energy-KGYQG5E6/energy-for-solar-buildings-and-cities-energie-pour-batiments-et-villes-solaires-KGYT50QD.html>)

<https://corsi.unige.it/en/corsi/10170>

EMESB Agreement, Annex 3, Teaching Team

I – SUBJECT

This document deals with the Teaching Teams of the EMESB agreement, academic years 2024-2025 to 2026-2027 included.

II – Teaching Team at UNIGE

The coordination team of the present EMESB program at Unige is made by Professors:

Marco Fossa
Antonella Priarone
Giorgio Zamboni

The complete teaching team at Energy Engineering is available, on a yearly bases, inside the “Manifesto degli Studi” document, “Piano degli Studi” section (https://servizionline.unige.it/unige/stampa_manifesto/MF/2023/10170.html)

III – Teaching Team at USMB

Following members of USMB staff are involved in teaching and coordinating the courses:

Monika Woloszyn
Christophe Ménézo
Nolwenn Le Pierrès
Emilie Planès
Lamia Berrah
Martin Thebault
Julien Ramousse
Alexandre Benoit

In addition, experts from USMB or other universities, research centers and industry may be involved.

**AMENDMENT N° 1
TO THE INTERNATIONAL COOPERATION AGREEMENT N° 2024-504
ESTABLISHING A DOUBLE DEGREE PROGRAMME**

Between the undersigned:

L'UNIVERSITE SAVOIE MONT BLANC

Public scientific, cultural and professional institution (EPSCP),
having its main office in 27 Rue Marcoz, BP 1104, 73000 Chambéry cedex, France,
N°SIRET 197 308 588 00015
Code APE 8542 Z
TVA INTRA COM FR 571 973 08588
represented by its president, Professor Philippe BRIAND, duly empowered by a resolution of the Board of Directors dated March 11th 2025,
Hereinafter referred to as « USMB »,

AND

L'UNIVERSITA DEGLI STUDI DI GENOVA,

represented by its Rector Professor Federico DELFINO, appointed by decree of the Minister of University and Research 820/2020), having its main office in Genova, Italy, Via Balbi 5, 16126. Public research and higher education institution. Partita IVA (VAT number) 00754150100
Hereinafter referred to as « UNIGE »

Having regard to the international cooperation agreement n°2024-504 signed by the President of Université Savoie Mont Blanc and the Rector of Università degli Studi di Genova, on 17/09/2024.

IT IS AGREED AS FOLLOWS:

Article I: Object

The purpose of this amendment is to modify the international cooperation agreement no. 2024-504 establishing a double degree programme by updating appendix 2, the study programme, and appendix 3, the teaching team.

Article II: Amendments to Annex 2 - Study programme

Appendix 2 is amended as follows:

EMESB Agreement, Annex 2, Study Programme

I – SUBJECT

This document deals with the Study Programme of the EMESB agreement, academic years 2024-2025 to 2026-2027 included. Present version was approved in February 2025.

II – STUDENT MOBILITY AND ECTS REQUIREMENTS

Students must acquire at least 22 (twenty-two) ECTS credits of taught modules at the Home University to submit an application for the Double Degree EMESB. Deadline for the fulfillment of the 22 credits is 15th June of student's first academic year.

Student mobility is in the second academic year of the Home University, during the first (Fall) semester.

Students must acquire 50 (fifty) ECTS credits in the Home University before they move to the Hosting University.

The Master Theses will be written and defended in English language; each student will be jointly supervised by two advisors, one by USMB and one by UNIGE. In any case a representative of the Hosting University will be part (in person or as video phone call) of the Master Thesis audience at the Home University where the thesis will be defended.

III – CREDIT SYSTEM AND GRADE CONVERSION

Each semester of the EMESB mobility consists of teaching modules for corresponding 25 to 30 ECTS credits.

ECTS credits correspond to a total student work which includes lectures (frontal lessons), assisted learning (tutorials), laboratory activities and homework. One ECTS corresponds to about 25-30 hours of student workload.

Each module is validated during the exam (written, oral or both) according to the local regulations and according to each University local grading system.

The grading system conversion agreed between USMB and UNIGE is provided in the following Table.

USMB Local mark	20	16	15	14	13	12	11	10	M<10 Failed
UNIGE Local mark	30 e Lode	30	29	28	27	25	22	18	M<18 Failed

UNIGE - EN2 ORGANIZATION

The En2 MSc course at UNIGE is organized according to the following teaching modules, as also described in the MSc course website (<https://corsi.unige.it/en/corsi/11917>)

FIRST YEAR – 1st (Fall) SEMESTER	ECTS	SECOND YEAR– 1st (Fall) SEMESTER	ECTS
Heat Transfer (66382)	6	Models and Methods for Energy Engineering (86662)	5
Mathematical Modeling for Energy Systems (86630)	5	Energy and Buildings (86655)	6
Chemical Processes and Technologies (86631)	5	Fuel Cells and Distributed Generation Systems (86660)	6
Industrial Fluid-dynamics (86641)	6	Solar and Geothermal Energy (80043)	6
Combustion Processes and Emissions (80054)	6	Elective course (86667)	5
		Other Activities(Italiano, Academic Writing/Soft Skills)	3
FIRST YEAR – 2nd (Spring) SEMESTER		SECOND YEAR – 2nd (Spring) SEMESTER	
Power Systems Modeling and Control (65887)	6	Hydro, Wind and Micro-gas Turbines (86661)	6
Power Systems Management (86638)	6	Energy Laboratory (80081)	6
Power Plants for Energy Conversion (80053)	6	Master thesis project (86663)	15
Industrial Plants for Energy (86644)	5	Technologies and Fuels for Propulsion systems Decarbonization (86665)	6
		Elective courses	5-10
		ELECTIVE COURSES, SECOND YEAR (student choice, 2 out of 4 among the ones here below)	
		Remote Sensing (80048, 2nd semester)	5
		Chemical and Biochemical Processes and Plants for Energy (72562, 2nd semester)	5
		Project Management for Energy Production (86666, 2nd semester)	5
		Power Systems Simulation and Optimization (86667, 1st semester)	5
Total ECTS=51		Total ECTS=69	

USMB-EMESB student will attend courses at Unige which refer to En2 fall semester, second year (31ECTS), including the Other Activities (3ECTS) module at En2 fall semester 2nd year, according to the teaching modules in the list here above and he/she will acquire the corresponding 31 ECTS by passing examinations.

USMB- ESBC ORGANIZATION

The ESBC MSc course at USMB is organized according to the following teaching modules, as also described in the USMB website

<https://www.univ-smb.fr/solaracademy/master-energy-for-solar-buildings-and-cities-esbc-program/>

FIRST YEAR – 1ST SEMESTER, FALL (S7)	30
UE701 Core Solar	4
Solar Ressource, Radiation and Optics	3
Application to solar systems	1
UE702 Core Building	4
Energy needs and performance	1
Building energy: Envelope and HVAC	3
UE703 Physics and materials for solar systems and buildings	4
Thermodynamics and heat transfer	3
Materials for energy	1
UE704 Introduction to Economics	4
Introduction to economics	2
Public economics	2
UE 705 Sustainability for energy transition	8
International regulations	2
Seminars solar 1	2
Sustainability analysis	2
Foreign language (French or English)	2
UE706 Introduction to research	6
Literature review project	6
Library research tools and methods	
FIRST YEAR – 2ND SEMESTER, SPRING (S8)	30
UE801 Power generation	6
Solar power generation	2
Energy vectors & Energy storage	2
Energy grids	2
UE802 Advanced tools - experimental	4
Experimental methods	2
Application to solar systems	2
UE803 Modelling of transfers phenomena	4
Modelling of Energy Systems	2
Building performance simulation (BPS)	1
Radiation modeling in complex media	1
UE804 Introduction to management	2
Strategic management	2
UE805 Energy Environment and Society	6
European regulations	2
Seminars Solar 2	2
Foreign language (French or English)	2

UE806 Innovation, creativity, research	8	2025-275
Creativity through biomimicry for solar cities	2	
Research project	6	
Optional Internship/Work placement		
SECOND YEAR – 1ST SEMESTER, FALL (S9)	30	
UE901 Advanced Solar Systems	6	
Solar thermal systems	2	
Building integrated PV	2	
Solar power generation	2	
UE902 Tools for Solar Cities	6	
Urban Metabolism: Energies, anergy, geothermy...	2	
Solar cadastre, solar performance	2	
Environment and buildings and systems	2	
UE903 Advanced methods	4	
Artificial Intelligence	2	
Operational research for urban solar development	2	
UE904 Urban development	6	
Case study common project	2	
Urban planning and architectural integration	1	
Performance indicators and information processing	1	
Foreign language (French or English)	2	
UE905 Research and Innovation Project	8	
Research project	6	
Entrepreneurship, Innovation challenge	2	
SECOND YEAR – 2ND SEMESTER, SPRING (S10)	30	
UE001 Internship	30	
Total ECTS	60	

UNIGE- -EMESB student mobility is in the first (fall) semester of their second year. They will attend courses at USMB corresponding to at least 22 ECTS common with ESBC S9 students. Additional 8 ECTS refer to S7 (semester 7) of ESBC, as stated hereafter. Additional credits from ESBC S9 can be chosen as elective courses.

Second Year – 1st (fall) semester, for UNIGE EMESB students at USMB		
UE701 Core Solar Solar Resource, Radiation and Optics Application to solar systems	4 3 1	<i>Mandatory</i>
UE702 Core Building Energy needs and performance Building energy: Envelope and HVAC	4 1 3	<i>Mandatory</i>
UE901 Advanced Solar Systems Solar thermal systems Building integrated PV Solar power generation	6 2 2 2	<i>Mandatory</i>
UE902 Tools for Solar Cities Urban Metabolism: Energies, energy, geothermy... Solar cadastre, solar performance Environment and buildings and systems	6 2 2 2	<i>Mandatory</i>
UE903 Advanced methods Artificial Intelligence Operational research for urban solar development	4 2 2	<i>Mandatory</i>
UE905 Research and Innovation Project Research project	6 6	<i>Mandatory</i>
TOTAL ECTS	30	

V – COURSE SYLLABI, PROFESSOR IN CHARGE AND OTHER INFORMATION RELATED SPECIFIC COURSE

The course syllabus, professors, exam organization, references, course schedules are information available at USMB and En2 web sites

<https://www.univ-smb.fr> and <https://formations.univ-smb.fr/fr/catalogue/master-XB/sciences-technologies-sante-STs/master-energie-solaire-solar-energy-KGYQG5E6/energy-for-solar-buildings-and-cities-energie-pour-batiments-et-villes-solaires-KGYT50QD.html>)

<https://corsi.unige.it/en/corsi/11917>

Article III: Amendments to Annex 3 – Teaching Team

Appendix 3 is amended as follows:

**EMESB Agreement, Annex 3,
Teaching Team**

I – SUBJECT

This document deals with the Teaching Teams of the EMESB agreement, academic years 2024-2025 to 2026-2027 included.

II – Teaching Team at UNIGE

The coordination team of the present EMESB program at Unige is made by Professors:

Marco Fossa
Antonella Priarone
Giorgio Zamboni

The complete teaching team at Energy Engineering is available, on a yearly bases, inside the “Manifesto degli Studi” document, “Piano degli Studi” section
(https://servizionline.unige.it/unige/stampa_manifesto/MF/2025/11917.html)

III – Teaching Team at USMB

Following members of USMB staff are involved in teaching and coordinating the courses:

Monika Woloszyn
Christophe Ménézo
Nolwenn Le Pierrès
Emilie Planès
Lamia Berrah
Martin Thebault
Julien Ramousse
Alexandre Benoit

In addition, experts from USMB or other universities, research centers and industry may be involved.

Article IV: Coming into effect

This amendment takes effect from the date of the last signature by the authorised representatives of the two partners and is applicable until the end of the academic year 2026/2027.

The other articles of the interational cooperation agreement no. 2024-504 remain unchanged.

This amendment is drafted in French and English. In the event of disagreement, the English version shall prevail.

This amendment is signed electronically.

For Université Savoie Mont Blanc

For Università degli Studi di Genova

Philippe BRIAND

Federico DELFINO