



# DENSYS 2.0

## DECENTRALISED SMART ENERGY SYSTEMS 2.0 ERASMUS MUNDUS JOINT MASTER



The Université de Lorraine, located at 34, Cours Léopold, 54000 Nancy, France, acting as the coordinating institution of the Erasmus Mundus Master Programme in Decentralised Smart Energy Systems 2.0 (DENSYS 2.0), representing the DENSYS 2.0 consortium and represented by H  l  ne BOULANGER, President, in her capacity as Legal and Financial Representative, hereinafter referred to as "DENSYS 2.0,"

of the first part, and

Mr./Ms. ....  
*First Name Surname*

born in .....

with Nationality: .....

and with Country of residence:.....

**the student**, hereafter called "Student", of the other part,

have agreed to the following terms and conditions.

### Article 1 Admission to the EMJM DENSYS 2.0 Programme

-   1. The Student declares to meet the requirements to follow the Erasmus Mundus Joint Master Degree in Decentralised Smart Energy Systems 2.0, hereinafter called DENSYS 2.0; particularly he/she holds a Bachelor degree (or equivalent) and has the required English proficiency (as mentioned on the EMJM DENSYS 2.0 website and on the online application tool). The Student declares that the information provided during the application and registration, on the provided online application and pre-registration tools, is authentic.
-   2. The student hereby commits him/herself on his/her honour to:
  - have never been granted an Action 1 Erasmus Mundus Master Course or EMJM scholarship.

### Article 2 Content of the DENSYS 2.0 programme

-   1. **Programme length and location:** The programme comprises 4 consecutive semesters of 30 ECTS each. The first 2 semesters constitute the common part of the programme and are spent at Universit   de Lorraine in Nancy (France). The third semester and, depending on the specialization track of the student, can be spent at KTH in Stockholm (Sweden), UPC in Barcelona (Spain) or PoliTo in Torino (Italy). The fourth semester is dedicated to the internship and the related MSc thesis. Thus, students enrolled in the DENSYS EMJM comply to the compulsory mobility consisting of a minimum of 2 study periods in 2 countries, which must be for at least one a EU member State and different from the country of residence of the student at enrolment stage.  
  
During the internship period, the student will be under supervision of an academic mentor. During the programme, three mandatory joint sessions take place:

- An immersive week at the University of Liège (B) for students in M1,
- One joint summer school of one 5 to 7 days per year at one of the partner universities, according to a rotation scheme.

Activities	Location	Calendar **
Semester 1	UL	Early September to early February
<i>Welcome days</i>		Early September
<i>Immersive week</i>	U. Liège	December
Semester 2	UL	Early February to early July
Semester 3	KTH / UPC / PoliTo	Early September to early February
<i>Welcome days</i>		Late August to end of September
Semester 4	Internship/MSc Thesis	Early February to end of July
<i>Master Thesis submission</i>		End of June to end of August
<i>Joint summer school*</i>		Beginning of July
<i>DENSYS 2.0 Graduation ceremony</i>		December to January

\* The Joint summer school is organized every year by one of the core academic partners according to a rotation scheme and embed the master thesis defence.

\*\* *Precise start and end dates of teaching, exam modalities and holiday periods will be jointly fixed in accordance with the local rules at each hosting institutions and then communicated to the students before issuing this student agreement.*

§ 2. **Specialization track allocation:** the specialization track choice is done by the student at the application stage.

§ 3. **Programme content:** An overview of the programme content is presented in the following table.

The programme includes mandatory courses as well as elective courses. Electives courses will be selected by the students according to their desired profile skills, upon advices of the academic staff. The opening of the elected courses will be subject to a minimum number of registered students.

Title	ECTS	Comment
<b>Semester 1 – 30 ECTS</b>		
Harmonization courses	3	Mandatory
Energy conversion processes	7.5	Mandatory
Key technologies of decentralized energy systems	7.5	Mandatory
Case-based module	3	Mandatory
Digital skills 1 (basics - delivered by ULg)	3	Mandatory
French language and culture	-	Mandatory
Critical resources for energy and recyclability	3	2 electives courses out of 4
Materials for energy conversion	3	
Energy transition and territories	3	
Economy for energy	3	
<b>Semester 2 – 30 ECTS</b>		
Carbon Capture and Reutilization	3	Mandatory
Smart and flexible energy management	6	Mandatory
Digital skills 2 (applications - delivered by ULg)	3	Mandatory
Challenge-based module – part 1	6	Mandatory
Project management	6	Mandatory
Corporate social responsibility		
System Engineering		

Co-simulation of processes	3	2 elective courses out of 4
Energy geopolitics	3	

Scientific, social and human context in the elaboration of energy policies	3	
Life cycle analysis	3	
<b>Joint Summer School</b>	-	Mandatory

<b>Title</b>	<b>ECTS</b>	<b>Comment</b>
<b>Semester 3 – 30 ECTS</b>		
<b>KTH - Specialization track "Decentralized smart energy systems in a global energy system "</b>		
Global energy markets and systems in transition	6	Mandatory
Energy System Economics, Modelling and Indicators for Sustainable Energy Development	6	Mandatory
Challenge-based module – part 2	6	Mandatory
Swedish language and culture	-	Mandatory
Theory and Methodology of Science for Energy Research	6	Mandatory
Renewable Energy Technology (advanced course)	6	1 elective course out of 4
Green Building - Concept, Design, Construction and Operation	6	
Energy storage technology	6	
Circular Economy and Energy System	6	
<b>PoliTo - Specialization track "Energy-to-X: innovative pathways for energy storage"</b>		
Polygeneration and advanced energy systems	6	Mandatory
Smart electricity systems	6	Mandatory
Challenge-based module – part 2	6	Mandatory
Italian language and culture	-	Mandatory
Resources and Environmental Sustainability	6	Mandatory
Wind and ocean energy plants	6	1 elective courses out of
Battery assembly, BMS and modeling	6	
Industrial chemistry and process simulation	6	
<b>UPC - Specialization track " Thermal Energy Engineering"</b>		
Thermal Equipment for heat and cold generation	5	Mandatory
Computational methods in thermal energy technology	5	Mandatory
Turbulence phenomenology, simulation	5	Mandatory
Challenge-based module – part 2	5	Mandatory
Spanish language and culture	-	Mandatory
Energy Resources	5	Mandatory
Advanced heat and mass transfer	5	1 elective course out of 3
Heat Engines and Combustion	5	
Experimental measurement techniques	5	
<b>Semester 4 – 30 ECTS</b>		
<b>Internship- Master Thesis</b>	30	Mandatory
<b>Joint summer school</b>	-	Mandatory

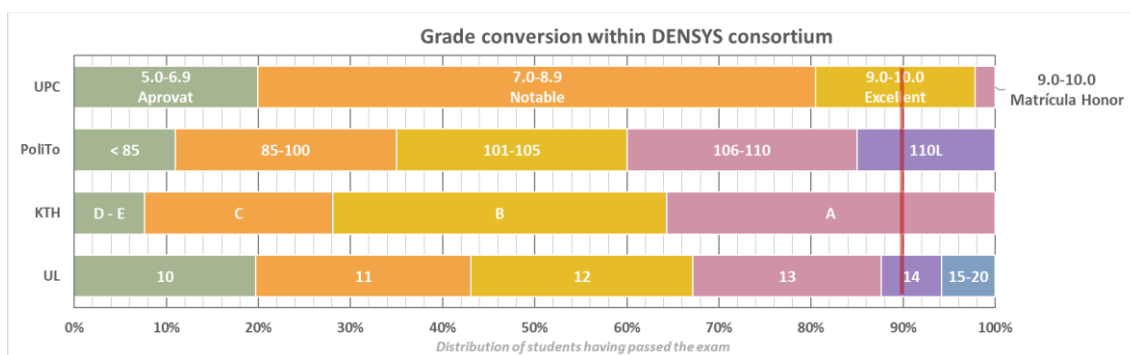
### Article 3 Attendance, evaluation, diploma

- § 1. Attendance: the Student hereby commits him/herself on his or her honour to duly attend the academic programme and the prescribed lectures and examinations of the EMJM DENSYS 2.0.
- § 2. Examination and master thesis:
- Local rules and regulations of the partner institutions at which the student is enrolled apply to modules that are followed, type of examination (written / oral examinations, oral defences, project work, organization of a debate...), grading of modules, resits, consultation of graded work etc. The language of all the courses of the DENSYS 2.0 Programme and the examination language is English for all the students. Exam results obtained at any partner university are fully recognized by all the universities in the consortium.
  - Enrolment in the second year will be only possible if the Student has obtained at least 75% of the first year ECTS i.e. 45 ECTS by the start of the 3<sup>rd</sup> semester. In the case where the Student has obtained at least 45 ECTS and less than 60 ECTS at the end of the first year, remedial exams (online

or in person) will be organised during the 3<sup>rd</sup> semester. If the Student has obtained less than 45 ECTS at the end of the first year, he/she will have to bear the re-registration of the participation cost to year 1.

The 4<sup>th</sup> semester of the DENSYS 2.0 programme is devoted to a mandatory internship dedicated to the preparation of the master thesis. This internship can take place either in industry or in a research laboratory, within and outside the consortium, within and outside of Europe. However, scholarships for studies outside programme countries cannot be paid for more than 3 months. It will be under the supervision of an academic tutor, who will be also responsible for grading the thesis work. An in-company/in-lab tutor, in charge of following the day to day work will also be assigned to the students.

§ 3. Grade harmonisation: Local exam results are transferred within the consortium (during the specialisation semester from the hosting university to the coordinating university, UL and from UL to the 2<sup>nd</sup> year University), both grades in the local system and ECTS acquired. To ease the comparisons, a conversion table, inspired from the European Grade Conversion System project EGRACONS – (<http://egracons.eu/>) is provided. As an example, as shown by the red line, a grade of 9/10 given at UPC is equivalent to 14/20 at UL. This statistical distribution of grades has been completed collecting all grades within the degrees that will be delivered in the DENSYS 2.0 programme over a period of four years.



§ 4. Diplomas and Joint Diploma Supplement:

- Depending on the specialization track followed during the DENSYS 2.0 programme, the student can obtain the following degrees:
  - From UL, Master Energie parcours "Decentralised Smart Energy System" and, depending of the institution delivering the specialisation semester, one of these degrees:
    - o From KTH, Teknologie Masterexamen, (Degree of Master of Science)
    - o From PoliTo, Laurea Magistrale in Ingegneria Energetica e Nucleare
    - o From UPC, Erasmus Mundus Master in Decentralised Smart Energy Systems, with Thermal Energy Engineering Specialization.

In addition, the students will receive a Joint Diploma Supplement mentioning all the partner Universities, the course titles, the learning outcomes, the grade records in the local systems and the ECTS gained, and an internship certificate. This document is signed by the President of Université de Lorraine.

#### Article 4 Consortium's obligations

§ 1. The Consortium and its partners provide the students with tuition, thesis supervision, all necessary learning support facilities and any other service associated with the Programme with reasonable care and skill.

§ 2. The Consortium provides the students with all the **information and material about the structures of the hosting universities, the academic program and the extra-curricular offerings**. The international offices offer services related to Visa application, accommodation, registration to the local authorities, opening a bank account, access to internet and intranet of the universities. **Local language training** for the students will be mandatory and offered in each university (even if not providing ECTS), as well as an initiation to the local and national culture. More details about the offering at each hosting university are given on the DENSYS 2.0 website.

- § 3. All partner universities organize **welcome day(s)** for the DENSYS 2.0 students at the start of each academic year. Joint welcome days, at the start of the programme are organized in UL, to present the overall programme architecture and challenge. Throughout the semester, students are given the opportunity to integrate with the local student community thanks to science fairs, networks and festive events.
- § 4. All students have access to **study materials** through a web platform. Moreover, Partners give access to both physical and electronic library services and other student amenities.
- § 5. Every DENSYS 2.0 Partner is responsible to ensure that the **personal data** of Students that will be subject to Data Processing are accurate and up-to-date and will be well-protected. Student data may be used by the European Commission for the purpose of evaluating the Programme, efficiently managing the EMJMD projects, and producing statistics. Data could be made available to the EACEA, the European Commission, the European External Action Service staff, as well as to other stakeholders of the Erasmus+ Programme, such as Erasmus+ National Agencies, National Erasmus+ Offices and the Erasmus Mundus Student and Alumni Association (EMA)<sup>1</sup>.
- § 6. Students are offered **language and culture** courses in each European country of their study Programme. Language courses are integrated in the course schedules of the DENSYS 2.0 lectures, in order to avoid overlaps; the number of classes is commensurate to the load of the term coursework. In addition, the language courses are offered free of charge by each Partner University. Upon completion of each language course, the students will receive a certificate of attendance.

Regardless the University of the consortium they attend, students shall benefit from the same advantages as a full-time student in the host university, including the procurement of a student card, valid for the duration of their stay.

## Article 5 Students' obligations

- § 1. **The Student shall follow the rules for attendance and discipline in place in each of the EMJM DENSYS 2.0 institutions** that he/she may attend, following his/her study track. Each EMJM DENSYS 2.0 institution shall direct the Student to the relevant rules i.e. from the institutional websites.
- § 2. The Student is obliged to obtain his/her residence permit from the national and local authorities upon his/her arrival in the host countries if required.
- § 3. The Student engages in behave with ethics during his/her studies. He/she will commit no fraudulent act, and will specially avoid cheating, falsification or plagiarism of any academic work. Moreover, he/she will not abuse or misuse the access to equipment and installations and will not perform any unauthorized access or violation of departmental, school or institution rules. Any incident against this compromise will be treated under the local regulation that applies in the University the student attends. This may cause the exclusion from DENSYS 2.0 Programme.
- § 4. The Student is obligated to participate in **DENSYS 2.0 programme surveys and evaluations** as well as cooperate with Erasmus+ EMJM surveys from the European Union Education, Audiovisual and Culture Executive Agency (EACEA). The Student will be encouraged to become a member of the Erasmus Mundus Students and Alumni Association (EMA) upon their graduation from DENSYS 2.0.
- § 5. **Exclusion:**  
The Student understands that he/she may be excluded from the EMJM DENSYS 2.0 programme for several serious motivations (including unjustified repeated non-attendance to programme activities). Exclusion procedure is subject to the local rules of the institution in which the Student is currently studying will apply (in particular the appeal procedure, if existing).
- §6. **For the EMJM Scholarship holders:** in such an event, the Student hereby makes a commitment on his/her honour to reimburse the DENSYS 2.0 Coordinating Institution (Université de Lorraine, France) the excess funding from the grant(s) allocated to him/her, which consists in:
- any DENSYS 2.0 funds received covering the period following the date of exclusion
  - except for the sums stipulated in Article 7 Article § 1.

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<sup>1</sup> [http://eacea.ec.europa.eu/erasmus\\_mundus/funding/documents/Privacy\\_statement\\_EMT.pdf](http://eacea.ec.europa.eu/erasmus_mundus/funding/documents/Privacy_statement_EMT.pdf)

## Article 6 Amount and payment of the scholarship for the EMJM scholarship holders

- § 1. In order to participate in the two-year DENSYS 2.0 programme starting in the academic year 2024, which is financed by the European Commission under Framework Agreement Number 101180112, the Student will receive a contribution to subsistence costs of 33.600 € (1400 €/month), granted by the European Commission. All the payments will be proceeded by the coordinating institution, Université de Lorraine. The contribution to subsistence costs will be paid to the Student personal bank account.
- § 2. The scholarship also includes a full coverage of the participation costs to the programme. The participation costs include the following:
- Registration in two EMJM DENSYS 2.0 institutions (University registration fee). If the local universities require any extra charge belonging to the programme requirements, the DENSYS 2.0 consortium will reimburse this amount to the Student.
  - Participation to the 2-year 120-ECTS DENSYS 2.0 educational programme, including:
    - Participation, mobility and accommodation to the Immersive Week at the University of Liège,
    - Participation to the Joint Summer schools courses, conferences, social events (travel remain at the students charge, catering will be partially covered by the programme),
  - Insurance coverage of the Student (see Article 6 § 6),
  - Administrative assistance (support for visa issues, accommodation, bank account opening),

Other student costs, such as document application, visa and residence permits, local transportation, trips to the host universities and accommodation, trips for the joint summer schools are not covered by these participation costs.

For information, the Student has to register at the coordinating institution, Université de Lorraine, during the 2 years of the program and at the hosting university for the second year. Registration at Université de Lorraine will be free for the 2<sup>nd</sup> year.

- § 3. The DENSYS 2.0 consortium will provide a **health and accident insurance**, under the Erasmus + program, included in the program cost, according to the “Minimum Requirements for the health and accident insurance coverage provided under EMJM”. The DENSYS 2.0 consortium is exonerated from any responsibility for accidents, illnesses, injuries, losses or damages to persons or goods resulting from or in any way related to the activities that are the object of the present agreement.
- § 4. The Student will open a personal European bank account in € currency and will provide the full details of this account to DENSYS 2.0 who will transfer the scholarship to this account.
- § 5. The Student shall refuse any other scholarship or subvention financed by the Commission of the European Communities under other Community programmes.
- § 6. The scholarship does not create or entitle an employer-employee relation between DENSYS 2.0 and the Student.

## Article 7 Reimbursement for the EMJM scholarship holders

- § 1. As an exception to Article 5§ 5, the Student shall not refund sums he/she perceived for the following:
- the equivalent amount of rent of his/her accommodation, for the month of the day of his/her exclusion,
  - any part of what constitutes the participation costs for the remainder of the EMJM DENSYS 2.0;
  - the sums the Student shall need to live between the exclusion day and the end of the calendar month (e.g. food, transportation), within a limit he/she shall agree on with DENSYS 2.0.
- § 2. Upon exclusion, the Student shall in due time and before his/her departure pay for the rent of his/her accommodation, for the month of the day of his/her exclusion, and any bank fees, bank charges or insurance fees contracted by the Student.
- § 3. DENSYS 2.0 shall pay to the Student the full amount of the monthly payment (living allowance) of the scholarship for the month of the day of his/her exclusion, thus enabling the Student to fulfil the commitments in Article 7§ 2.
- § 4. DENSYS 2.0 shall allocate funds to the Student to cover the cost of travel back to his/her country of origin.

§ 5. For the Student's information, the Framework Agreement (101180112) between the DENSYS 2.0 Coordinating Institution (Université de Lorraine, France) and the Education, Audiovisual & Culture Executive Agency (EACEA) of the Commission of the European Communities which funds the EMJM DENSYS 2.0, imposes upon the DENSYS 2.0 Coordinating Institution, following the exclusion or the withdrawal of a Student from the EMJM DENSYS 2.0.

- to make the remainder of the scholarship allocated to that Student available to a new applicant
- to refund the EACEA with the remainder of the scholarship allocated to that Student if no new applicant is enrolled as a replacement
- except for funds mentioned in Article 7§ 1 for the prescribed use only.

**Article 8 Participation costs for the non-scholarship holders**

§ 1. Non-scholarship holders are committed to pay the participation costs to the coordinating institutions, Université de Lorraine. Payment has to be done into two equal instalments, one at the beginning of the 1<sup>st</sup> year of the programme, the other at the end of the year.

The participation costs include the following:

- Registration in two EMJM DENSYS 2.0 institutions (University registration fee). If the local universities require any extra charge belonging to the programme requirements, the DENSYS 2.0 consortium will reimburse this amount to the Student.
- Participation to the 2-year 120-ECTS DENSYS 2.0 educational programme, including:
  - Participation, mobility and accommodation to the Immersive Week at the University of Liège,
  - Participation to the Joint Summer schools courses, conferences, social events (travel remain at the students' charge, catering will be partially covered by the programme),
- Insurance coverage of the Student (see Article 6 § 6),
- Administrative assistance (support for visa issues, accommodation, bank account opening),
- **For a student with sponsored rates**, i.e. with part of the participation costs is covered by DENSYS 2.0 programme, the participations cost depend on the origin of the student (EU or non EU):

	Track	Institution	Part. fees
Non-EU students	Decentralized energy systems in a global energy system	KTH, Sweden	6,000 €
	Energy-to-X: innovative pathways for energy storage	POLITO, Italy	
	Thermal Energy Engineering	UPC, Spain	
EU students	Decentralized energy systems in a global energy system	KTH, Sweden	3,000 €
	Energy-to-X: innovative pathways for energy storage	POLITO, Italy	
	Thermal Energy Engineering	UPC, Spain	

- **For fully self-paying students** the participation costs depend on the origin of the student (EU or non EU):

	Track	Institution	Part. fees
Non-EU students	Decentralized energy systems in a global energy system	KTH, Sweden	17,277 €
	Energy-to-X: innovative pathways for energy storage	POLITO, Italy	12,370 €
	Thermal Energy Engineering	UPC, Spain	14,386 €
EU students	Decentralized energy systems in a global energy system	KTH, Sweden	6,486 €
	Energy-to-X: innovative pathways for energy storage	POLITO, Italy	9,086 €
	Thermal Energy Engineering	UPC, Spain	8,573 €

§ 2. In the event that a non-scholarship holder student is excluded (see §5), or decides to step down of his own accord:

- **For a student with sponsored rates**, i.e. with part of the participation costs is covered by DENSYS 2.0 programme, if the student is excluded or steps down during the first year, only the first

instalment of the participations costs are due. If the student steps down during the second year, the two instalments are due.

- **For fully self-paying students**, the amount of registration fees in universities is due for any academic year commenced therein. These amounts are the following:

First year	EU students	UL	486 €
	Non-EU students	UL	3,770 €
Second year	EU students	KTH	0 €
	Non-EU students	KTH	7,500 €
	EU students	PoliTo	2,600 €
	Non-EU students	PoliTo	2,600 €
	EU students	UPC	4,616 €
	Non-EU students	UPC	2,087 €

The amount of other fees included in the participation costs will be reimbursed on a pro-rata basis for the number of months spent in the program, including the month in which the student stepped-down or was excluded.

## Article 9 Appeal procedure

§1. The consortium has set-up an appeal procedure and internal appeal procedure. **The following motivations can enter into the appeal procedure field:**

- Disagreement with the evaluation of a teaching unit, making the teaching unit is not validated (no ECTS delivered),
- Decision resulting from the outcome of the master thesis, if the decision leads to not validate the thesis,
- Decision of the end of the 1<sup>st</sup> year jury about the number of credits that will be transferred from UL to the partner university where the 3<sup>rd</sup> semester mobility will take place,
- Decision of the final jury, which affect the awarding of the final degree(s) (i.e. the degree of UL and/or the degree of one of the partner universities).

§2. The students who want to appeal a decision have to fill the appeal form (annex 1) and send a scanned and signed copy to the address: [densys-contact@univ-lorraine.fr](mailto:densys-contact@univ-lorraine.fr). The appeal will be processed by DENSYS 2.0 central management office and if required, students will be redirected to official appeal procedure of the concerned university of the DENSYS 2.0 consortium. The appeal will be processed by the DENSYS 2.0 central management office (CMO) within 15 calendar days. The final decision of the appeal will be upon the local procedures depending on the consortium universities, and will be notified to the student on a written form

## Article 10 Modification of the Contract and dispute resolution conditions

- § 1. Any alteration to the present Agreement must be communicated in writing. All alterations to the initial situation must be immediately communicated by the Student to DENSYS 2.0. Upon mutual agreement of contractual modifications, DENSYS 2.0 will issue an addendum to the present agreement.
- § 2. DENSYS 2.0 Consortium is exonerated from any responsibility for accidents, illnesses, injuries, losses or damages to persons or goods resulting from or in any way related to the activities that are object of the present agreement.
- § 3. Without prejudice to the general consequences laid down in national law applicable in the present Contract, DENSYS 2.0 reserves the right to cease the effects of the present contract, without recourse to any juridical procedure apart from adequate communication to the Student. Failing agreement by both parts, the French courts are designed as the only competent authorities to resolve any legal dispute between DENSYS 2.0 and the Student emerging from the contract. The present contract will be governed by the French Law.

The Student agrees with the terms of this contract by signing the copy



**Student**

Name:

Signed in Nancy, France.  
on the September 18<sup>th</sup>, 2024.

Signature:

**DENSYS 2.0**

Programme Chair: Fabrice  
LEMOINE

Signed in NANCY, FRANCE  
on the 18/09/2024

Signature

**DENSYS 2.0**

Coordinating Institution

Signed in  
on the

Signature

# Annex 1

## APPEAL FORM

Name	Surname	Date	DENSYS Intake (e.g. 2023-2024)
<p>Describe the motivation behind the appeal: provide details about the decision you intend to challenge, and if applicable, specify the relevant teaching unit and the DENSYS consortium partner involved (<b>UL, KTH, PoliTo, UPC</b>)</p>			
<p><i>500 char. max (spaces included)</i></p>			
<p>Describe the reasons why you believe the decision, which is the subject of the appeal, is unfair</p>			
<p><i>2000 char. Max (spaces included)</i></p>			

Date

Student signature