

# European Masters Programme in Software Engineering

Free University of Bozen-Bolzano, Italy (UNIBZ)

University of Oulu, Finland (OY)

Technische Universität Kaiserslautern, Germany (UNIKL)

Universidad Politécnica de Madrid, Spain (UPM)

Call for Student's Applications

Edition: EMSE 2018/2020

**Deadline: 5 February 2018 12:00 AM AoE time**



Application web site: <http://em-se.eu>

Online Application at: <https://emse.gomovein.com>

Funded by the  
Erasmus+ Programme  
of the European Union



## 1. OVERVIEW

EMSE Consortium composed by the Free University of Bozen-Bolzano, Italy (UNIBZ), the University of Oulu, Finland (OY), the Technische Universität Kaiserslautern, Germany (UNIKL) and the Universidad Politécnica de Madrid, Spain (UPM) offers a two-years (120 ECTS credits) Joint Masters Degree Programme, named European Masters Programme in Software Engineering (**EMSE**).

### 1.1. DESCRIPTION OF THE PROGRAMME

The EMSE curriculum covers a wide range of topics, such as software process management, verification and validation, software design, requirements engineering and advanced topics including software quality, distributed systems and development, global software development, embedded systems and open source software & agile development.

### 1.2. STRUCTURE OF THE PROGRAMME

The curriculum consists of modules (divided into foundations and advanced topics in Software Engineering), a mandatory Internship, a Summer School and a Master thesis.

The full structure can be accessed at <http://em-se.eu/index.php/the-programme/>.

The Programme foresees a mobility period in two different Partner Universities of EMSE Consortium. A **mobility track** is one of such mobility period in which the student spends one year in one University (i.e., **first university**) and one year in another University (i.e., **second university**). A **learning path** is a study plan defined on a specific mobility track. The learning paths are accessible at <http://em-se.eu/index.php/study-plan/>.

The Internship and the Master thesis will be carried out during the second year (on the third semester for the Internship). The Master thesis will be jointly supervised and evaluated by two supervisors, one from each University attended by the student (for more information please consult: <http://em-se.eu/index.php/exams-and-thesis/>).

### 1.3. GRADUATES' PROFILE

Overall, students will gain a solid knowledge to be applied as managers in software companies, IT specialist and/or applied researchers in academia. The Programme prepares students to continue with doctoral studies in Empirical Software Engineering (ESE) as well. The typical profiles of an EMSE graduate include:

- **Software Engineer (SE)** whose duties include work in the areas of user and systems requirements and analysis, software design, development, and maintenance, software process management, and maintenance of information systems, also in non-IT environments;
- **Information Technology (IT) manager** whose duties include the management of information systems of any level of complexity and size; and
- **Researcher in Empirical Software Engineering (ESE)** in public and private research centres or universities whose work comprises the empirical investigation of the quality of software processes and systems of any level of complexity and size.

#### *1.4. LEARNING OUTCOMES*

A successful student will be able to:

- Have solid knowledge of theoretical foundations in Software Engineering (SE) and their application in the several informatics domains; have knowledge of techniques and methods of design, development, test, and maintenance of information systems and be able to apply them in different contexts, also not typically IT, where the software technology is anyway crucial;
- Be able to analyse and solve problems in SE of several different levels of complexity with specific focus on empirical investigation; that is, employ the scientific methods of investigation in SE; in particular, understand and use mathematical instruments that support ESE and its practice;
- Have basic knowledge of public, corporate and professional cultures and societies in Europe;
- Have practice in various software applicative sectors in the socio-economic context including the non-IT specific like health, automotive, energy;
- Be able to work in large autonomy also managing projects and infrastructures over different platforms, like cloud, distributed, or mobile systems;
- Have a command of the SE technical knowledge and skills necessary to practice as software developer;
- Have a command of the SE management skills needed to organize and control software project team work;
- Be able to reconcile conflicting project objectives providing reasonable cost and time information;
- Overcome the challenges of global software development and internationalization.

The international dimension of the Masters Course guarantees that students familiarise with different educational methods and multi-culture.

#### *1.5. LANGUAGE*

All courses are taught in English. Students are requested to acquire language skills in the local language (e.g., by passing an exam) of each University they will attend on the first and on the second year.

#### *1.6. STARTING TERM*

The term starts between August – October depending on the first university internal calendar.

#### *1.7. MASTERS DEGREE AWARDED BY THE PROGRAMME*

Upon the successful completion of the curriculum and fulfilment of the Masters course requirements, students will be awarded a double degree, one for each University they have visited. The official names of the awarded degrees are:

- Laurea magistrale in Informatica in Italy, Classe delle Lauree n. LM 18 del D.M. n. 270/2004;
- Master of Science (M.Sc.) in Germany;
- Master of Science in Information Processing Science in Finland; and
- Máster Universitario en Ingeniería del Software in Spain.

## 2. ADMISSION

Applicants are admitted to EMSE Programme regardless of sex, age, or nationality.

To be admitted, applicants need to fulfil the **admission criteria**.

### 2.1. ADMISSION CRITERIA

In order to be admitted, applicants must fulfil the following requirements:

- **Meet the application deadline;**
- **Indicate the preferred mobility track;**
- **Have excellent academic background:** candidates will be evaluated based on their curriculum vitae, academic grades, professional experience, and letters of recommendation.
- **Have been awarded a BSc in Software Engineering, Computer Science or Computer Engineering or degrees with equivalent skills in the three areas (Software Engineering, Computer Science or Computer Engineering) by an internationally recognized university-level institution.** Applicants who have not completed their first level degree yet, but they are expected to graduate before **July, 31st 2018**, are allowed to apply to the current call for application. However, if selected, in order to be admitted to the Programme, they will have to provide a copy of the first-level degree certificate before **July, 31st 2018**.
- **Provide proof of proficiency in English language at level B2.2 (CEFR).**
  - o With one or more of the following internationally recognized certificates, issued no more than 5 years before application deadline date: TOEFL ( $\geq 567$  (paper based),  $\geq 227$  (computer-based), or  $\geq 87$  (internet-based)), IELTS ( $\geq 6.0$ ) or equivalent certificates. For more information regarding “Equivalent certificates”, applicants are advised to check at <https://www.unibz.it/assets/Documents/Languages/unibz-recognised-language-certificates-2016-2017.pdf>
  - o With University declaration of undergraduate studies in English: applicants who have received a degree from a university-level institution where the official teaching language is English must submit a declaration issued by the same University stating that English is the official language of the respective program of degree at level B2.2 or equivalent.
  - o With country of origin certification: applicants who are citizens and first-degree-holders of the following English speaking countries Antigua & Barbuda, Australia, Bahamas, Barbados, Belize, Canada, Gambia, Ghana, Grenada, Guyana, Republic of Ireland, Jamaica, Kiribati, Liberia, Mauritius, Micronesia, New Zealand, Nigeria, Papua New Guinea, St. Kitts-Nevis, St. Lucia, St. Vincent, Sierra Leone, Solomon Islands, Trinidad & Tobago, Uganda, United Kingdom, United States of America, Zambia or Zimbabwe must submit a document attesting their country of origin.
  - o The consortium may request an assessment of the student's English level during the selection interview.

Candidates from India, Pakistan and Bangladesh are advised to contact in advance the relevant diplomatic Representation in their country of residence in order to confirm the documentation required for the pre-enrolment procedure **in case of acceptance**.

In order to proof the eligibility for the admission criteria, applicants must submit on line the following digital documents that must be compliant to the originals:

- Copy of the English test results (certificate);
- Curriculum Vitae (European format);
- Proof of nationality (copy of passport);
- Proof of place of residence. For example:
  - o a residence certificate issued in accordance with the candidate's municipality normal registration rules;
  - o a certificate from the candidate's place of work, study or training issued by the employer or institution in question.

**The proof of place of residence must have been issued within 12 months before the submission deadline.**

- Certified (translated into English) copy of university diploma;
- Certified (translated into English) copy of Transcript of study Results (subjects taken during their degrees, along with the marks obtained and the number of hours/credits devoted to each subject); and
- Recommendation letters (one compulsory and 1 optional) and references.

**Upon admission to the Programme, candidates shall provide copies of their university diplomas and transcript of records duly legalised and apostilled.**

## *2.2. SELECTION CRITERIA*

Candidates that fulfil the admission criteria will be ranked according to the following selection criteria:

- Academic records;
- Type of entrance qualification;
- Work experience and professional qualifications;
- Motivation and willingness, curriculum vitae; and
- Recommendation letters and references.

### 3. PARTICIPATION COSTS (EMSE TUITION FEE)

For each academic year, the tuition fees are EUR **6.000,00** for Partner Country students and EUR **4.250,00** for Programme Country Students.

Programme country students (**PrC**): are applicants

- Whose citizenship is one of European Union, Turkey, the former Yugoslav Republic of Macedonia (FYROM), and the European Economic Area / European Free Trade Association (Iceland, Liechtenstein, Norway). The list of programme countries is available at <http://em-se.eu/wp-content/uploads/2015/11/PartnerProgrammeCountryList.pdf>
- Partner Country students who are/have been residents or have carried out their main activity (studies, training or work) for more than a total of 12 months over the last five years in any Programme Country are considered as Programme Country students. The five-year reference period for this 12-months rule is calculated backwards as from the submission deadline (**February, 5th 2018 AoE**) of applying for a scholarship.

Partner country students (**PaC**): are all the applicants

- Whose citizenship is **NOT** one of European Union, Turkey, the former Yugoslav Republic of Macedonia (FYROM), and the European Economic Area / European Free Trade Association (Iceland, Liechtenstein, Norway). The list of partner countries is available at <http://em-se.eu/wp-content/uploads/2015/11/PartnerProgrammeCountryList.pdf>
- Partner Country students who are/have **NOT** been residents **NOR** have carried out their main activity (studies, training or work) for more than a total of 12 months over the last five years in any Programme Country are considered as Programme Country students. The five-year reference period for this 12-months rule is calculated backwards as from the submission deadline (**February, 5th 2018**) of applying for a scholarship.

Students with a double nationality (of a Partner and of a Programme Country) must specify their nationality under which they submit their scholarship application.

The participation costs cover: European insurance cost, social taxes, cost for one local language course per year and university services according to the local regulations of each university visited (e.g., access to library, computer laboratories, Wi-Fi, Internet, alumni associations, university sport associations).

The tuition fee for any further year(s) is to be paid directly by the student to the Second Hosting Institution. The tuition fees for any further year(s) are laid down in accordance with the Internal Regulations of each Full Partner University.

The amount of the tuition fees for any further year(s) will be communicated to the students in question before the beginning of the third academic year in order to allow students to meet all relevant obligations. The tuition fees for any further year(s) will be charged annually and may be subject to annual increases.

Students who are not awarded an Erasmus Mundus scholarship will obtain a support to travel for the Summer school.

#### 4. ERASMUS MUNDUS SCHOLARSHIP

For the edition 2018/2020, **9** Erasmus Mundus scholarships are offered to **Partner Country applicants (PaC)** and **1** Erasmus Mundus scholarship to **Programme Country applicants (PrC)** distributed over the mobility tracks as in the following two tables:

##### Scholarship distribution over mobility tracks

		Second year				
Partner Country applicants		UNIBZ	UNIKL	OY	UPM	
First year	UNIBZ	0	1	0	1	2
	UNIKL	0	0	1	0	1
	OY	1	0	0	2	3
	UPM	1	1	1	0	3
		2	2	2	3	<b>9</b>
Programme Country applicants		Second year				
		UNIBZ	UNIKL	OY	UPM	
First year	UNIBZ	0	0	0	1	1
	UNIKL	0	0	0	0	0
	OY	0	0	0	0	0
	UPM	0	0	0	0	0
		0	0	0	1	<b>1</b>

**How to read the tables:** columns are second year universities, rows are first year universities. For example, the second column and the first row of the first table indicates that there is one scholarship for a Partner Country student attending the first year at UNIBZ and the second year at UNIKL.

Applicants must apply to either Programme or Partner country scholarship according to their eligibility as Partner country student or Programme country student described in section 3.

No more than three candidates for a single country can receive an Erasmus Mundus scholarship.

**Students who have already obtained an Erasmus Mundus Joint Master Degree (EMJMD) scholarship or are former Erasmus Mundus Master/Doctoral scholarship holders are not eligible for an additional scholarship under the this action. Students benefiting from an EMSE scholarship cannot benefit from another EU grant while pursuing their EMSE studies.**

## 5. ERASMUS MUNDUS SCHOLARSHIP AMOUNT

The amount of a scholarship per academic year varies according applicant's residence and type as in the following

	PrC	PaC near (<4000Km)	PaC far (>4000Km)
Participation cost	EUR 4.250,00	EUR 6.000,00	EUR 6.000,00
Travel cost	EUR 1.000,00	EUR 2.000,00	EUR 3.000,00
Installation cost	-	EUR 1.000,00	EUR 1.000,00
Monthly allowance (12 months)	EUR 12.000,00	EUR 12.000,00	EUR 12.000,00
<b>Total per year</b>	<b>EUR 17.250,00</b>	<b>EUR 21.000,00</b>	<b>EUR 22.000,00</b>

**How to read the table:** the three columns indicate the different types of applicant as described below; the rows indicate the breakdown of the scholarship amount.

**PrC:** Scholarship holder **resident** in a Programme Country (including students with nationality of a Partner country)

**PaC near:** Scholarship holder **resident** in a Partner Country whose location is situated at less than 4.000 km from **Bolzano, Italy**

**PaC far:** Scholarship holder **resident** a Partner Country whose location is situated at 4.000 km or more from **Bolzano, Italy**

Residence distance is calculated via the distance calculator [http://ec.europa.eu/programmes/erasmus-plus/tools/distance\\_en.htm](http://ec.europa.eu/programmes/erasmus-plus/tools/distance_en.htm)

The Erasmus Mundus scholarship covers the payment of the EMSE participation costs and provides an annual travel and installation support plus a monthly allowance for 12 months a year.

Travel costs and installation costs are defined only on the residence of a scholarship holder at the application deadline. Participation costs are defined as in section 3.

The amounts of travel and installation costs reflect the maximum amount the Erasmus Mundus Programme could grant to scholarship holders resident in a Partner Country or in a Programme country.

Installation cost is offered only to students who are resident in a Partner Country. It is given only once at the first academic year for the whole duration of the scholarship.

Travel amount per year	
EUR 1.000,00	Scholarship holder <b>resident</b> in a Programme Country for travel costs
EUR 2.000,00	Scholarship holder <b>resident</b> in a Partner Country whose location is situated at less than 4.000 km from <b>Bolzano, Italy (PaC near)</b>
EUR 3.000,00	Scholarship holder <b>resident</b> in a Partner Country whose location is situated at 4.000 km or more from <b>Bolzano, Italy (PaC far)</b>
Installation amount for the whole two-years duration	
EUR 1.000,00	Scholarship holder <b>resident</b> in a Partner Country whose location is situated at less than 4.000 km from <b>Bolzano, Italy (PaC near)</b>
	Scholarship holder <b>resident</b> in a Partner Country whose location is situated at 4.000 km or more from <b>Bolzano, Italy (PaC far)</b>

Monthly allowance will not be given to:

- Scholarship holders for periods spent in their country of residence;
- Scholarship holders from a Partner country for the period exceeding three months spent in any Partner country.

Candidates can apply for an Erasmus Mundus scholarship to any of the Erasmus+ Erasmus Mundus courses of their choice: [https://eacea.ec.europa.eu/erasmus-plus/library/emjmd-catalogue\\_en](https://eacea.ec.europa.eu/erasmus-plus/library/emjmd-catalogue_en), but for a given academic year the number of applications must be limited to **maximum three** different joint programmes.

## **6. AWARDING PROCEDURE**

A Joint Board consisting of academic/administrative representatives of all Universities will review the candidacies.

Applicants that fulfil the admission criteria will be ranked according to the selection criteria.

A preliminary ranking list and a reserve list will be defined accordingly.

The Joint Board will interview applicants in the preliminary ranking list.

Applicants of the preliminary reserve list can be interviewed upon decision of the Joint Board.

After the interviews, a final ranking list and reserve list are formed.

Applicants in the **final ranking list** will be awarded an Erasmus Mundus scholarship according to the availability in each mobility track (see section 4) and the order of the ranking list. If no scholarship for the mobility track chosen by an applicant of the ranking list is available, the applicant may be offered a scholarship for a different mobility track. In case of applicant's refusal or no answer by the confirmation deadline, the first applicant of the finalised reserve list will be offered the scholarship. The selection will continue iteratively until all scholarships are allocated.

Applicants in the reserve list may be awarded an Erasmus Mundus scholarship only in case of refusal of applicants in the ranking list.

Applicants of the ranking list must communicate the acceptance and participation to the Programme by the date specified in section 10. Applicants in the reserve list will be notified of available scholarships and confirm their acceptance and participation to the Programme as specified in Section 9 and 10.

Applicants that fulfil the admission requirements but do not belong to the main and reserve list are not awarded an Erasmus Mundus scholarship and can participate to the EMSE Programme as self-paying students.

## 7. HOW TO APPLY

Applicants apply on-line at the EMSE website <https://emse.gomovein.com/>

Applicants are requested to fill out the on-line application and provide the following documents in electronic form:

- Copy of the English test results (certificate);
- Curriculum Vitae (European format);
- Proof of nationality (copy of passport);
- Proof of place of residence. For example:
  - o a residence certificate issued in accordance with the candidate's municipality normal registration rules;
  - o a certificate from the candidate's place of work, study or training issued by the employer or institution in question.

**The proof of place of residence must have been issued within 12 months before the submission deadline.**

- Certified (translated into English) copy of university diploma;
- Certified (translated into English) copy of Transcript of study Results (subjects taken during their degrees, along with the marks obtained and the number of hours/credits devoted to each subject); and
- Recommendation letters (one compulsory and one optional) and references.

**Upon admission to the Programme, candidates shall provide copies of their university diplomas and transcript of records duly legalised and apostilled.**

Additional documents may be requested. Unreadable or incomplete documents or late submissions will not be considered.

Applicants admitted to the EMSE programme **will be interviewed** as described in section 6 and 9.

**In the application, applicants must specify the mobility track. Students selected for one type of track cannot later change the two universities of destination. Applicants cannot apply to more than one type of grant or mobility track.**

**THE EMSE CONSORTIUM WELCOMES STUDENTS WITH THEIR OWN SOURCES OF FUNDING.**

## 8. HOW TO ENROL

Admitted students will be contacted by the EMSE Project Manager and guided in the enrolment procedure.

To secure the participation, **all admitted students must pay the first instalment of the participation costs for the first year by the confirmation date (see section 9).**

Such **first instalment** is

- € 600,00 for Partner country applicants; and
- € 425,00 for Programme country applicants.

**Scholarship holders will be reimbursed of such payment with the first monthly allowance.**

Payment receipt must be submitted to the EMSE secretariat ([emse-secretariat@unibz.it](mailto:emse-secretariat@unibz.it)) via e-mail attachment.

**The second instalment** for the first year shall be paid only by the self-paying admitted applicants and is

- € 5400,00 for Partner country applicants; and
- € 3825,00 for Programme country applicants.

Such second instalment **of the participation costs** shall be paid **by August 31st 2018.**

**In case of student's withdrawal, no reimbursement of the participation costs (first instalment or full) will be performed.**

### 8.1. BANK ACCOUNT

Cassa di Risparmio della Provincia di Bolzano

IBAN: IT67P0604511619000000009000

BIC (SWIFT): CRBZIT2B107

Payment reason: EMSE edition/ Full student's name / Type of instalment (First instalment/Full participation costs/90% of participation costs);

e.g: EMSE 2016-2018/Mark Zuckerberg/First Instalment

**No bank expenses can be charged to the EMSE consortium. Within the European Union, a SEPA bank transfer is available.**

## 9. IMPORTANT DATES

- **October, 31st 2017:** opening of the timeframe for application
- **February, 5th 2018 (AoE):** closing of the timeframe for application
- **From February 26th to March 9th 2018:** Interview invitation. Shortlisted applicants are invited to interview (if candidates do not receive an interview invitation during the indicated timeframe, they are not considered for scholarship).
- **March 14th 2018:** Publication of results on EMSE website. The results will be divided into 4 categories of applicants. The personal ID number assigned in the application phase identifies each

candidate for privacy reasons: 1) Scholarship Holders List; 2) Reserve List; 3) Non-scholarship Holders List; and 4) Non selected Applicants List.

- **From 14th to 16th March 2018:** Notification of scholarship award by EMSE Project Manager. Applicants in the Scholarship Holders List will be notified of the award by email. **No email will be sent to other candidates.**
- **From 19th to 23rd March 2018 at the latest:** Confirmation of participation of candidates in Scholarship Holders List. Applicants on the Scholarship Holders List will send by email a confirmation of participation to the EMSE programme and their first instalment bank transfer receipt (Please send it as attachment to the confirmation email. See section 8 for further details on payment). **No email will be sent to other candidates.**
- **From March 26th to April 2nd 2018:** Confirmation of participation of candidates in the Reserve List. If candidates on the Reserve List are offered a scholarship, the selected candidates on the Reserve List will send by email a confirmation of participation to the EMSE programme and the first instalment bank transfer receipt (Please send it as attachment to the confirmation email. See section 8 for further details on payment).

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#### **For self-paying students**

- **From March 14th to May 31st 2018:** All admitted applicants are welcomed to join the EMSE Programme on a self-paying basis by sending an e-mail with the confirmation of participation and the receipt of the first instalment transfer **by May, 31st 2018** (Please send it as attachment to the confirmation email. See section 8 for further details on payment).
- The second instalment of the participation costs shall be paid **by August, 31st 2018** (Please send it as attachment to the confirmation email. See section 8 for further details on payment).

## **10. CONTACTS**

### **EMSE Secretariat**

Free University of Bozen-Bolzano

Faculty of Computer Science

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