



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA
DIPARTIMENTO DI
INGEGNERIA DELL'ENERGIA ELETTRICA
E DELL'INFORMAZIONE "GUGLIELMO MARCONI"

Call for applications for 2 scholarships for company-based final projects

ART. 1 – Scope and goals

Teko Telecom S.r.l. is a worldwide leading company in the field of Wireless Cellular Communication, owned by JMA Wireless, with headquarters and R&D Department established in Castel San Pietro (BO).

With the aim of reinforcing the links with the region and with the Alma Mater Studiorum – Università di Bologna, in 2019 Teko Telecom and the Department of Electrical, Electronic and Information Engineering - Guglielmo Marconi established a framework agreement related to research, and education. In this context, Teko Telecom finances scholarships for students enrolled at the Bologna and Cesena Campuses, in order to support an early stage development of R&D expertise in support of a professional career in advanced mobile telecommunications.

In this framework, this “Call for applications” for **2 scholarships** is launched to finance company-based final projects at Teko Telecom for students enrolled on the Master’s degrees 9205 – Telecommunications Engineering and 0934 – Ingegneria elettronica.

ART. 2 – Scholarships’ amount and payment

Each scholarship amounts to 2,500 euros gross, to be paid by the Department of Electrical, Electronic, and Information Engineering “Guglielmo Marconi” in two instalments:

- The first one (50% of the overall amount) after 30 days of the start of the activity at Teko Telecom, conditioned upon the approval of Prof. Alessandro VANELLI CORALLI (project scientific coordinator) declaring that the company-based final project has actually started off. Accordingly, the project scientific coordinator will deal with the student’s supervisor and with the company.
- The second one (50% of the overall amount) within 60 days of the end of the activity at Teko Telecom, conditioned upon the approval of the project scientific coordinator that the company-based final project has actually finished off. Accordingly, the project scientific coordinator will deal with the student’s supervisor and with the company.

ART. 3 – Participation requirements and forfeiture

The following categories of students can apply:



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA
DIPARTIMENTO DI
INGEGNERIA DELL'ENERGIA ELETTRICA
E DELL'INFORMAZIONE "GUGLIELMO MARCONI"

- Those enrolled in 2020/2021 on the first or second year of the Master's degree 9205 – Telecommunications Engineering, as well as those “fuori corso”.
- Those enrolled in 2020/2021 on the first or second year of the Master's degree 0934 - Ingegneria elettronica, as well as those “fuori corso”.

Moreover, Applicants must have registered at least **42 ECTS** and have a CGPA no lower than **27/30**.

Those enrolled on the first year in 2020/2021 may also apply even if not yet enrolled in 2021/2022. Nevertheless, should they be awarded a scholarship, they will be required to finalize their enrolment to the second year within 10 days of the publication of the results, otherwise they will forfeit the scholarship.

Forfeiture of the scholarship shall also occur in case of:

- Loss of student status or withdrawal from studies;
- Transfer to another degree of the University of Bologna (except for those transferring from 9205-Telecommunications Engineering to 0934 – Ingegneria Elettronica and viceversa);
- Transfer to another university.

ART. 4 - Incompatibility

It is not possible to benefit from this scholarship and from any other funding delivered by the University of Bologna for the same goal and concerning the same period.

ART. 5 – Application procedure

Student can apply online at Studenti Online (SOL) only, throughout the following time-frame:

August the 31st, 2021 – September 23rd, 2021 by 10.00 AM

The following documents shall be enclosed to the application:

- **CV/résumé;**
- **Self-certification of the exams** given on the Master's Degree. Students will be able to pick and choose one of the documents already available on SOL.

Applicants will be requested to declare they do not meet any of the incompatibility circumstances



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA
DIPARTIMENTO DI
INGEGNERIA DELL'ENERGIA ELETTRICA
E DELL'INFORMAZIONE "GUGLIELMO MARCONI"

set forth on article 4 of this "Call for applications".

ART. 6 – Evaluation criteria

Applications will be evaluated according to the following criteria:

1. **Academic records (max 60/100):** the number of exams and the CGPA will be taken into consideration, as well as relevant items on the CV (e.g. scientific papers, vocational courses);
2. **Interview (max 40/100):** it will assess Applicants' motivation as well as their technical skills relevant to the final project's topics put forward by Teko Telecom (see the following article 7).

In order to be admitted to the interview, it is necessary to obtain at least 30/60 on the academic records' evaluations, whereas an overall score of 60/100 is needed to be deemed eligible for the scholarship.

Should two or more applicants have the same score, the younger ones shall precede.

Candidates shall be evaluated by the following Committee:

- Prof. VANELLI CORALLI Alessandro (Chairman);
- Mr ASCARI Giulio (minute-taker);
- Prof. COSTANZO Alessandra;
- Prof. RAFFAELLI Carla;
- Prof. ROSSI Davide;
- Prof. BARBIROLI Marina (deputy member);
- Prof. CERRONI Walter (deputy member);
- Prof. TARCHI Daniele (deputy member).

ART. 7 – Interviews, results' publications, winners' nomination

The Evaluation Committee, following the records' assessment, shall determine the list of those admitted to the interview, to be published on the procedure's restricted-access area on Studenti online on:

October 7, 2021

Interviews shall take place over the following 2 weeks and may be carried out in a remote mode:



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA
DIPARTIMENTO DI
INGEGNERIA DELL'ENERGIA ELETTRICA
E DELL'INFORMAZIONE "GUGLIELMO MARCONI"

the published list will indeed detail the schedule of the interviews and how they will be performed. It is worth noting that such a publication constitutes the sole legal information means and no further communications shall be sent off: **not showing up the day of the interview will result in the exclusion from the procedure.**

The interview shall assess the **interest in and the technical skills relevant to the following final project's topics** put forward by Teko Telecom:

- Characterization of mmWaves propagation models (human body impact on the signal, weight and parametrization of several signal contributes and obstacles effects etc.);
- Analog/digital/hybrid beamforming and its effects on propagation and performance of a 5G signal;
- Study of the optimal radiation pattern of a 5G antenna for indoor vs outdoor applications;
- New paradigm for the outdoor 5G network planning (innovative sectorization design, antennas model/height/location, mid-band & mmWaves coexistence in heterogeneous networks etc.);
- How the increasing demanding Uplink requirements of 5G users should properly reflect into a new UL-centric network design versus traditional DL-dimensioned networks;
- RAN Softwarization and virtualization;
- gNB implementation on SDR platforms, with or without HW accelerators;
- Optimization of SDR platforms for gNB implementation;
- Orchestration framework in Open RAN environment (RIC, SMO, etc.);
- Analysis of different options in vRAN deployments: centralized Data Centers, Edge DC, Telco Cloud, etc. and associated costs/benefits analysis;

The interview shall be held in **English and Italian.**

Following the interviews, the Evaluation Committee shall draw up a standing, pointing out the overall score of each applicant and stating those deemed winners, eligible and not eligible. Such a standing shall be published within **10 days from the end of the interviews.**

Starting from the aforementioned standing's publication, winners will have **10 days to accept the scholarship**, otherwise they will give it up and the position shall be pass on to the following eligible applicant. They should notify their acceptance in writing to the email address dei-didattica@unibo.it, enclosing the personal data form attached to this "Call for applications" and published on www.bandit.unibo.it.



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA
DIPARTIMENTO DI
INGEGNERIA DELL'ENERGIA ELETTRICA
E DELL'INFORMAZIONE "GUGLIELMO MARCONI"

Having received all the acceptances, the winners shall be officially nominated.

ART. 8 – Persona data

Personal data gathered on the applications shall be treated fairly and complying with the Regulations (UE) 2016/679 – *General Data Protection Regulation* as well as with the Italian legislative decree #196/03.

Data processing shall be carried out using computer-based as well as paper-based means for call-related purposes only. Conferring personal data is compulsory in order to participate in the “Call for applications”.

The Data Holder is the Alma Mater Studiorum - Università di Bologna, whose headquarters is located in via Zamboni n. 33, 40126 Bologna. Applicants can claim the rights of article 7 of the aforementioned legislative decree #196/03 by filing a request to the Head of the Department of Electrical, Electronic, and Information Engineering “Guglielmo Marconi”.

ART. 9 – Publication and leading authority

This “Call for applications” is published on www.bandi.unibo.it.

The Leading Authority of this procedure (so-called RUP) – pursuant to article 7 of the Italian law 241/90 – is Mrs Barbara Di Placido.

Contacts

Mr Giulio Ascari - - giulio.ascari@unibo.it