



**European Master in Official Statistics**  
**Permanently open call with annual cut-off dates**  
**for universities applying for the EMOS label**

# **Guide for applicants**

This guide is intended to facilitate drafting and compiling of the application for the EMOS label. It

- gives background to EMOS
- outlines the emphasis of the call for applications and roadmap
- sets out the criteria to be met by the Master programme
- explains the assessment process
- lists the documents to be submitted for the assessment.

# I. Introduction

## 1. What is the European Master in Official Statistics (EMOS)?

The European Master in Official Statistics ([EMOS](#)) was launched by Eurostat and the European Statistical System ([ESS](#)) in 2014 to connect producers of official statistics and academia at European level. As a joint project of universities and data producers, EMOS aims at including official statistics in statistical curricula, meeting training and recruitment needs in the ESS and constituting a future recruitment pool of highly educated professional statisticians for the ESS and the European System of Central Banks ([ESCB](#)).

EMOS is a label awarded by the European Statistical System Committee ([ESSC](#)) for four years, renewable upon continued fulfilment of EMOS requirements. In the EMOS governance structure ESSC is the highest decision making body awarding the EMOS label to the Master programmes and appointing members to the [EMOS Board](#). The Board assists the ESSC in developing the project, especially in awarding the EMOS label and in quality monitoring of the EMOS Master programmes. The EMOS Board is chaired by Eurostat and consists of 14 members representing both universities and producers of official statistics.

The [EMOS network](#) in several European countries consists of some 30 universities and collaborating partners in national statistical offices (NSIs), central banks (CBs), other national statistical authorities (ONAs) and international organisations (IO). The network builds on existing and nationally accredited Master programmes which, in line with the [EMOS learning outcomes](#) (Annex 1), familiarise the graduates with the system of official statistics, production models, statistical methods and data dissemination. EMOS labelled Master programmes also collaborate actively with the National Statistical Institutes or other producers of official statistics for relevant master thesis topics<sup>1</sup> and internships in the sphere of official statistics. Partners in the EMOS network benefit from each other's experiences and can develop deeper cooperation, e.g. joint degrees or exchange of students. In addition, the EMOS webinars<sup>2</sup> offer a relevant mix of skills and knowledge for tomorrow's official statisticians and study visits to Eurostat provide an insight into official statistics at European level considered attractive by the students.

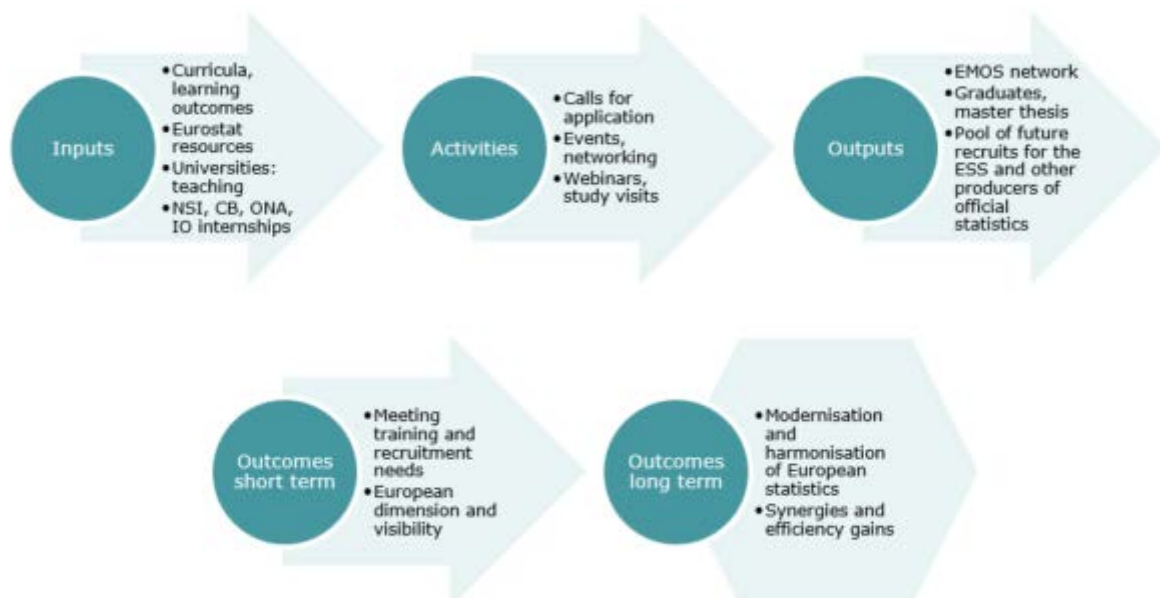


Figure 1: Intervention logic about how EMOS activities are expected to deliver long- and short- term outcomes

<sup>1</sup> For examples of [topics](#) please see winners of Master thesis competition

<sup>2</sup> For examples please see EMOS webinars [2020](#), [2018](#) and [2017](#)

## 2. Emphasis of EMOS Master programmes to address future challenges

This call offers the opportunity for new universities interested in official statistics to join the EMOS network. Whereas applications from countries where there is no EMOS labelled programme would be welcome, the selection procedure will emphasise the quality of the application and proposed educational project. Applicants can build their EMOS proposal on existing relevant Master programmes or, if they choose so, build a new and accredited EMOS Master programme.

EMOS Master programmes need to address the rapidly changing landscape from design-based production of official statistics to integrating different kinds of data sources, including unstructured (big) data. Students will need a blend of different skills to cope with multisource statistics such as administrative registers and big data, along with associated new statistical production methods that make more frequent use of model-based and algorithm-based estimation techniques. Moreover, future statisticians will need to be knowledgeable not just about technicalities but understand the institutional environment and dissemination aspects, not only in their national contexts but at European level. Also, communicating statistical products needs new type of storytelling, requiring strong communication capabilities and soft skills. EMOS labelled programmes should address these future challenges and adapt their pedagogical approach accordingly in order to offer attractive professional education. In the February 2019 ESSC meeting, the Directors General of the National Statistical Institutes (NSIs) made clear that they expect EMOS programmes to put more emphasis on addressing the technical and communication skills needed to process and analyse new digital sources, in order to remain relevant and attractive both for employers and students. Applicants are therefore asked to pay special attention to this aspect when preparing their applications and designing the proposed EMOS curriculum<sup>3</sup>.

## 3. Roadmap

February 2020	Call for applications is published on EMOS homepage <sup>4</sup>
<b>31 December 2020</b>	Cut of date for submissions
January	Secretariat <ul style="list-style-type: none"><li>– checks admissibility criteria and requests missing documents with short deadlines.</li><li>– proceeds with clarification requests on behalf of the Board members and recomposing evaluation teams in case of conflict of interest.</li></ul>
January	EMOS Board will assess the following two sets of criteria: <ul style="list-style-type: none"><li>a) Eligibility criteria — formal criteria (yes/no)</li><li>b) Selection criteria — fulfilling the EMOS requirements</li></ul>
Feb-March	Board finalises the assessment and proposes a short-list of programmes to the ESS Committee for award of the EMOS label
May 2021	EMOS label award by the ESS Committee and informing the applicants

<sup>3</sup> See more details in learning outcomes, Annex 1

<sup>4</sup> EMOS homepage: [https://ec.europa.eu/eurostat/cros/content/emos\\_en](https://ec.europa.eu/eurostat/cros/content/emos_en)

## II. Criteria for awarding the EMOS label

### 4. Admissibility criteria

The admissibility criteria are formal features of the application. The documents may be submitted in a national language; however, in this case a non-certified translation into English **must** be provided. Personal data will be collected, processed and published in accordance with the provisions of Regulation (EU) No [\(EU\) 2018/1725](#).

#### 4.1. Submission modalities and deadline

The deadline for sending the complete application is Thursday 31 December 2020. Applications should include:

- a) Filled and signed application form ([Word](#) and [Excel](#))
- b) Electronic copy of the complete application with annexes is to be sent to [ESTAT-EMOS@ec.europa.eu](mailto:ESTAT-EMOS@ec.europa.eu) by 31 December 2020 at the latest by 23:59 (Central European Time - CET ) with the subject 'Reply to EMOS Call for applications + name of the university'

**Any application failing to meet the deadline will not be accepted for the following steps of the assessment.**

#### 4.2. Completeness of the application

In Annex 2 you will find a checklist of **all** documents and annexes that need to be attached. Please number and list your documents and annexes on a separate page.

### 5. Eligibility criteria

**5.1. The programme is an accredited Master programme in an EU Member State, EU candidate country or EFTA country.**

**5.2. The Master programme is in line with the Bologna process and the European Credit Transfer and Accumulation System (ECTS) or equivalent<sup>5</sup>.**

Please see Annex 2 for list of required documents and annexes.

**If the application does not meet the eligibility requirements, it will not be assessed any further and feedback will be provided only on the aspects that led to it being rejected.**

### 6. Selection criteria

Please fill in the respective tables of the EMOS application form. For detailed descriptions of the EMOS learning outcomes, please see Annex 1 of this guide. Please see Annex 2 for list of required documents and annexes. Selection criteria:

**6.1. The Master programme is organised in line with the EMOS learning outcomes, includes a Master thesis and an internship in the area of official statistics.**

6.1.1. **Master theses:** the programme includes a Master thesis or in formally justified cases the Master theses can be substituted by an equivalent scientific report on a

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<sup>5</sup> For example the UK's credit transfer systems, subject to Brexit developments

relevant topic related to official statistics and is supported by a National Statistical Institute (NSI), National Central Bank (NCB), Other National Authority (ONA)<sup>6</sup> or an International Organisation (IO)

6.1.2. **Internships:** The programme includes an internship of minimum 6 weeks in an NSI or a statistical department of an NCB, ONA or IO and is steered and managed by a University as well as the respective NSI, NCB, ONA or IO. In formally justified cases the internship could be substituted by a research project (written report) on a topic relevant to official statistics. In such a case the NSI or NCB has to certify the research project as a relevant topic for official statistics.

**6.2. The University has set up a written agreement of cooperation with the respective NSI, NCB, ONA or IO with regard to internships and other support such as cooperation in teaching and Master theses.**

**6.3. Minimum requirement 90 ECTS:** the total credits devoted to the EMOS Master are worth at least 90 ECTS or equivalent which must include:

6.3.1. At least 50 ECTS allocated to the courses aimed at reaching the EMOS learning outcomes

6.3.2. At least 30 ECTS allocated to a combination of Master thesis of at least 20 ECTS and internship of at least 10 ECTS and/or of a minimum duration of 6 weeks.

6.3.3. In case of awarding only a minimum number of ECTS to the Master thesis and internship, the remaining ECTS (up to 10 ECTS) should be allocated to the EMOS learning outcomes in order to reach the total of 90 ECTS.

6.3.4. In case the specific rules in place in a given country do not allow ECTS to be awarded for the:

- Master thesis, the programme has to include an equivalent number of ECTS dedicated to research leading to a scientific report.
- Internship, the programme has to include an internship with an equivalent workload in terms of duration (6 weeks).

**6.4. Start of the programme:** The Master program should already be operational or start not later than one year after application.

**6.5. The University holds adequate teaching capacity and qualifications for the Master programme.**

### III. Additional assets

Though not taken into account in the selection decision, an effective quality assurance system and cooperation with higher education institutions at an international level or participation in European networks are considered as additional assets. The information will give an insight into ongoing projects and the quality assessment mechanism that has been put in place. This information will also feed into further development work of the EMOS network.

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<sup>6</sup> List of National Statistical Institutes (NSI) and Other National Authorities (ONA)<sup>7</sup> based on Article 5(2) of Regulation (EC) No 223/2009 amended by Regulation (EU) 2015/759.

## IV. Assessment

### 7. Scores

The EMOS Board will assess the eligibility and the selection criteria on the basis of the information given in the sub-categories of the application form and the annexes. Each criterion will be scored on a scale from 0 to 3 (half point scores may be given):

- 0 Insufficient** proposal fails to address the criterion or cannot be assessed due to missing or incomplete information
- 1 Fair** proposal broadly addresses the criterion, but there are significant weaknesses
- 2 Good** proposal addresses the criterion well, but some shortcomings are present
- 3 Excellent** proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor

An application fulfils the selection criteria if it receives at least “Good” for each criterion.

### 8. Assessment process

The assessment team consists of the EMOS Board and EMOS secretariat in Eurostat. The EMOS Board must assess the applications objectively and independently. All members of the EMOS Board must sign a declaration of absence of conflict of interest and of confidentiality. The deliberations of the EMOS Board shall be confidential.

In case the organisation of an EMOS Board member is involved in an application for the EMOS label, the respective member will not be involved in the assessment and will be requested to leave the room during the deliberations regarding that particular application.

The team reserves the right to ask clarifications from the applicants at any point in time of the process.



September 2019

## Learning Outcomes of the EMOS programmes

### I. Programme Profile

EMOS aims at providing students with an advanced training in the specific themes of statistics in general and official statistics in particular, supported by the complementary quantitative and statistical tools offered by the hosting university. The main objective of EMOS is to enhance the abilities of students to understand and to be able to analyse European official data at different levels: quality, production process, dissemination, and analysis in a national, European and international context.

This range of skills represents the ideal foundation for the development of professionals able to interpret the fast-changing official data production system of the 21st century. This is why it is important that the EMOS learning outcomes are included in a degree designed for students aiming at economical/social/statistical knowledge-intensive careers. It contributes to offer a solid foundation for those willing to pursue a preparation in the field of data collection on societal and economic facts or other professional activities characterised by a strong need for awareness about the development, production and dissemination as well as use of official statistics.

### II. Learning Outcomes

Graduates who have successfully completed an EMOS programme will be able to demonstrate knowledge about:

#### 1) The system of official statistics

- a. To be aware of the importance of official statistics as basis for data-driven policy decision making;
- b. To master the organisation and role of the European Statistical System (ESS), the European System of Central Banks (ESCB) and other official data producers and their legal bases, including those referring to data confidentiality;
- c. To be aware of the main institutions operating at national and international level and their data sources (e.g. Eurostat, ECB, IMF, ILO, BIS, UN, OECD, World Bank);
- d. To understand the principles of the [European Statistics Code of Practice \(for the ESS\)](#)<sup>7</sup> and the [Public Commitment \(for the ESCB\)](#) and how they apply to the different steps of data production and dissemination.

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<sup>7</sup> Laid down in Regulation (EC) No 223/2009 as amended as well as Council Regulation (EC) No 2533/98.

## 2) Production models and methods

- a. To understand and be able to use different kinds of data sources for statistical production, especially censuses, survey data, administrative sources, big data as well as to evaluate pros and cons of each data source (impact on the main quality dimensions of the results);
- b. To be able to design and manage data production processes, including the definition of the main dimensions of quality and how to monitor and evaluate them;
- c. To be aware of different production models, including the enterprise architecture concepts applied to official statistics (e.g. metadata management, Generic Statistical Business Process Model, data archiving, standard statistical units, mixed-device surveys, statistical classification);

## 3) Themes in official statistics

- a. To be able to understand methodological issues related to the statistical domains such as economy and finance, population and social conditions, industry, trade and services, agriculture and fisheries, international trade, transport, environment and energy, science and technology, general and regional statistics, sustainable development goals;
- b. To be able to apply methods suitable to produce and analyse data in these fields;

## 4) Statistical Methods

- a. Knowledge of and ability to apply statistical methods such as sampling, small area estimation, non-response adjustments, editing and imputation, validation, treatment of big data, time series analyses, seasonal adjustment, outlier treatment, index theory, multivariate statistics, econometrics, spatial statistics, knowing the concepts of metadata, paradata, data integration, critical capacity of framing analysis of statistical data;
- b. Understand statistical confidentiality issues in the production as well as dissemination of official statistics and the main methods to ensure it (i.e. privacy-preserving computation, statistical disclosure control)
- c. User experience and programming capacities enabling to find professional solutions to complex data processing tasks, e.g. with tools such as R, Python , SAS, SPSS or STATA;

## 5) Dissemination

- a. Ability to present data in an effective way to different kinds of audience using different types of state-of-the-art communication channels including social media;
- b. Understanding and actively handling the most important tools available for data and metadata dissemination and presentation of results, such as tables, charts in a static and dynamic web-based environment, data warehouses, advanced visual graphics, etc.
- c. To be familiar with different disseminated data e.g. linked open data, infographics and experimental statistics.



## List of required documents and annexes to the EMOS application

**For documents in national language, a translation in English (non-certified) must be provided**

No	Name of document/annex/proof	Check
1	<p><b>EMOS application form</b></p> <p>For electronic submission, the application forms as Word and Excel files</p> <p><b>Please compress voluminous files as .zip files.</b></p>	
2	<p><b>Eligibility/Accreditation</b></p> <ul style="list-style-type: none"> <li>– Proof that the current programme is authorised by the relevant State authorities in an eligible country: Copy of the authentic curriculum document in the original language and its translation in English</li> </ul> <p>Note: if the received accreditation implies the compliance with the Bologna process, please explain in a separate letter with reference to national legislation if relevant</p>	
3	<p><b>Eligibility/Bologna</b></p> <ul style="list-style-type: none"> <li>– Proof that the programme is in line with the Bologna process and the European Credit Transfer and Accumulation System (ECTS) or equivalent.</li> </ul>	
4	<p><b>Selection/Programme details (mostly covered in the online application form), supporting documents can be added on assuring that:</b></p> <ul style="list-style-type: none"> <li>– Detailed explanation how each EMOS learning outcome is reached by the offered courses</li> <li>– At least 50 ECTS or equivalent of the programme are linked to subjects of the EMOS learning outcomes</li> <li>– At least 30 ECTS or equivalent are dedicated to the Master thesis on a topic related to official statistics and an internship steered and supported by an NSI, NCB, ONA or IO</li> <li>– If necessary, explain clearly how the remaining 10 ECTS are allocated in order to reach the overall minimum of 90 ECTS</li> <li>– Start not later than one year after application</li> </ul>	

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<b>5</b>	<p><b>Selection /Cooperation with NSI</b></p> <ul style="list-style-type: none"> <li>– Proof of established collaboration with the respective NSI or other statistical authority: Copy of the written agreement of cooperation with the respective NSI, NCB, ONA or IO with regard to internships and other support such as cooperation in teaching and Master theses</li> </ul> <p>Note:</p> <ul style="list-style-type: none"> <li>– The document should be signed by the highest possible hierarchy (equivalent to Director General or Director General Statistics).</li> <li>– Cooperation with national authorities other than ONAs or IOs can also be established. In such a case the NSI should sign a document certifying that the organisation is involved in production of official statistics.</li> <li>– In formally justified cases the internship could be substituted by a research project (written report) on topics relevant to official statistics. In such a case the NSI or NCB has to certify the research project as a relevant topic for official statistics.</li> </ul>	
<b>6</b>	<p><b>Selection /Teacher profile</b></p> <ul style="list-style-type: none"> <li>– CVs of course leaders</li> </ul> <p>Note: applications must include CVs not older than one year of each responsible course leader, explaining their experience relevant to official statistics. CVs of the proposed lecturers may be requested at a later stage on a case-by-case basis, if necessary.</p>	
<b>7</b>	<p><b>Assets/Quality</b></p> <ul style="list-style-type: none"> <li>– Document certifying that the Master programme is regularly monitored by an effective quality assurance system</li> </ul>	
<b>8</b>	<p><b>Assets/Inter-institutional cooperation:</b></p> <ul style="list-style-type: none"> <li>– Document certifying that the Master programme has established cooperation with higher education institutions at the European level or participates in international networks.</li> </ul>	